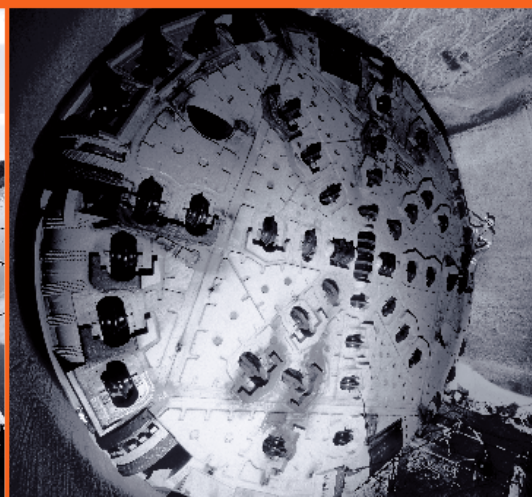


THE WORLD OF LAPP

International edition














LAPP GROUP



Welcome

To contact your local Lapp Group representative please visit www.lappgroup.com/worldwide

This catalogue is valid
as from May 2012.

	Informations about the company	2
	ÖLFLEX® Power- and control cables	19
	UNITRONIC® Data communication systems	253
	ETHERLINE® Data communication systems for ETHERNET-Technology	403
	HITRONIC® Optical transmission systems	427
	EPIC® Industrial connectors	441
	SKINTOP® Cable glands	643
	SILVYN® Protective cable conduit- and cable carrier systems	755
	FLEXIMARK® Cable marking systems	849
	Cable Accessories	897
	Appendix Selection Tables, Technical Tables, Index of part numbers, Index of products	977

Dear Business Associates and Customers,

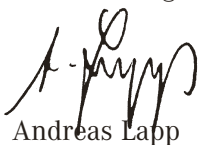
I am delighted to be able to present you with our latest main catalogue, 2012, and to bid you a very warm welcome to “the World of Lapp”. On around 1000 pages, you will find all our brand products for the perfect connection, along with lots of technical tips and service offers.

The new edition is somewhat leaner, making it more convenient and customer-friendly. Even so, the comprehensive range of products is unrivalled. Our product portfolio includes standard and highly-flexible cables, industrial connectors and screw technology, bespoke assembly and system solutions, automation technology and technical accessories. Just take a look! Our main catalogue gives you a quick overview of all products for almost every application, from mechanical and plant engineering to device and apparatus construction and for growth sectors such as renewable energy, mobility and food & beverage.

As you would expect, all of our new products are already included in the latest edition. And we’re getting more international: For the first time, “The World of Lapp” is appearing simultaneously in German, English, Chinese, Italian, Polish and Spanish with identical content. This will give many customers, who, just like the Lapp Group, are internationally-minded, just what they’d been asking for. There is also a hardcover version (book version) of the catalogue.

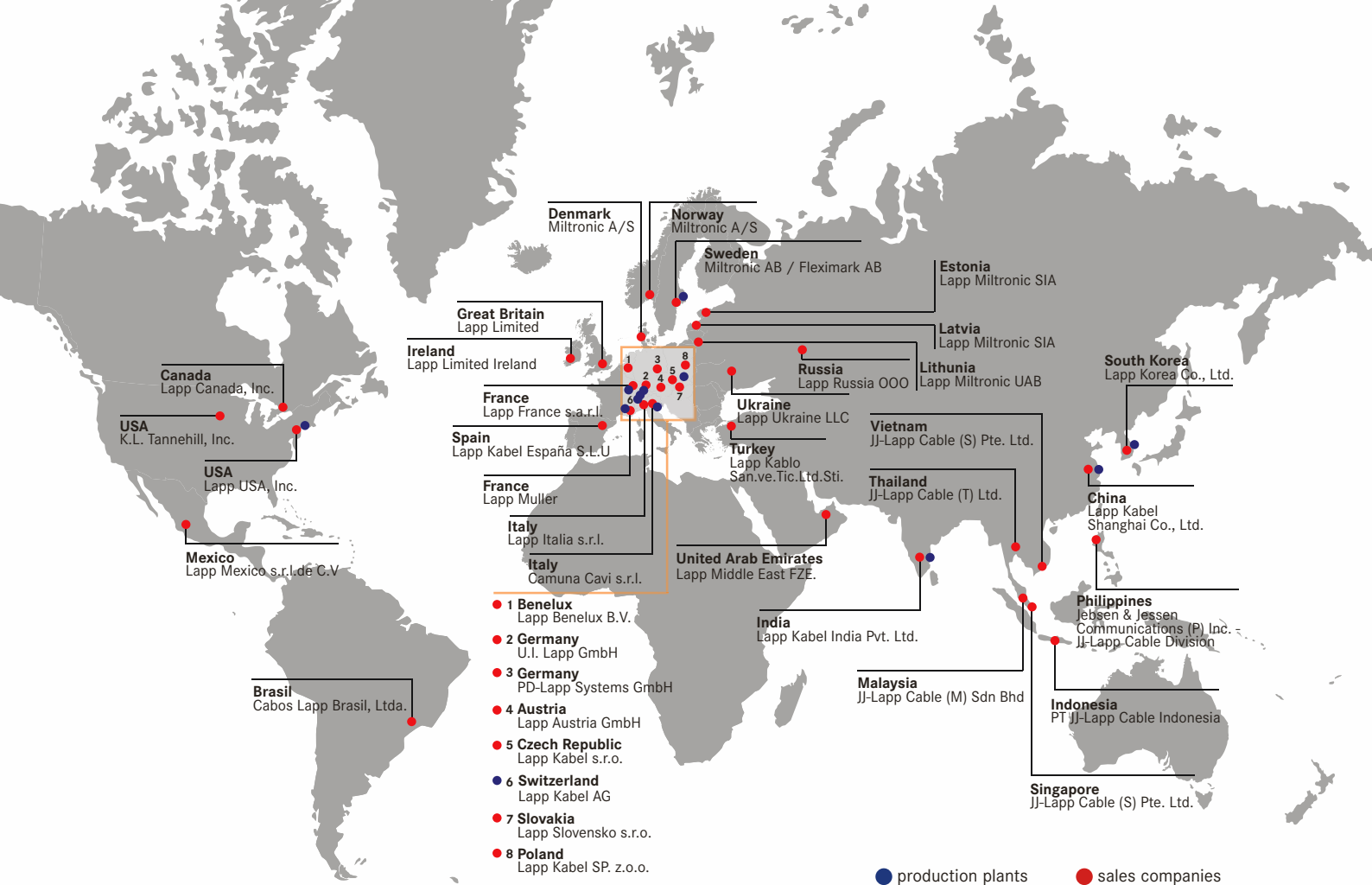
We felt it important to introduce our corporate philosophy to you in the new catalogue. It builds on our values of being customer-oriented, familiar, innovative and success-oriented; it is according to these values that we do business. We see ourselves as your partner. With our innovative products and our professional services we help you to become even more successful yourself. Discover the world of Lapp. It’s worth it.

With best regards,



Andreas Lapp





At home in Stuttgart, but known all over the world

The World of Lapp is based in Stuttgart. This is where it all started for our company, which was founded in 1959 as U.I. Lapp KG (now U.I. Lapp GmbH). From its headquarters in Stuttgart we have determinedly evolved to become a global player – with currently 15 production plants in Europe, Asia and America, 41 sales companies and more than 100 sales partners, 3,000 employees. The larger Lapp companies such as Russia, India, China, Canada and Mexico have their own warehouses. The others are promptly supplied through our high-performance logistics centres. At our Lapp Centres we are also strongly committed to enhancing the knowledge of our employees and customers. After all, knowledge is the ink with which the future is written down.

One of our most successful “products” is that of proximity to our customers. On the one hand, we practice intensive dialogue with designers and planners, manufacturers and users. This enables us to identify new requirements and trends at a much earlier stage, to quickly provide you with suitable solutions. Innovation leadership put into active practice.

On the other hand, proximity to our customers really means something to us: our presence extends all round the globe. As a reliable partner on a local basis we support our customers in exploiting markets by providing them with short delivery times and low logistics costs.

Our current addresses see www.lappgroup.com/worldwide

 **Algeria**
EURL CABELMAT
Cit  Mimouni Lotissement 18
Villa N  14 Bordj El Kifane
ALGER, 16411
Tel.: +213 2 1201039
Fax: +213 2 0388220
info@cablemat.net
www.cablemat.net

 **Argentina**
NAKASE SRL
Calle 49 No. 5764
B 1653AOX
Villa Ballester
1870 BUENOS AIRES
Tel.: +54 11 47684242122
Fax: +54 11 47684242111
gerencia@nakase.com
www.nakase.com.ar

 **Armenia**
Integral Design ev Engineering
8 Tumanyan Street, suite 425 - 426
375002 YEREVAN
Tel.: +374 10 519188
Fax: +374 10 519188
info@ihtb.am
www.ihtb.am

 **Australia**
DKSH Australia Pty Ltd.
14-17 Dansu Court Hallam
3803 VICTORIA
Tel.: +61 3 95546666
Fax: +61 3 95546677
info@dksh.com.au

 **Austria**
Lapp Austria GmbH
Bremenstra e 8
4030 LINZ
Tel.: +43 732 781272444
Fax: +43 732 78127234
sales@lappaustria.at
www.lappaustria.at

 **Belarus**
PNS „Professional Network Systems“
Temirjaseva Str. House 65 b off. 308
220035 MINSK
Tel.: +375 17 2908372
Fax: +375 17 2547828
info@pns.by
www.pns.by

 **Belgium - Luxembourg**
Lapp Benelux B.V.
Van Dijklaan 16, 5581 WG WAALRE
Postbus 74, 5580 AB WAALRE
NL:
Tel.: +31 40 2285000
Fax: +31 40 2285010
Belux:
Tel.: +32 78 353060
Fax: +32 78 353065
info.lappbenelux@lappgroup.com
www.lappbenelux.com


 **Brazil**
Cabos Lapp Brasil Ltda.
Av. Dr. Mauro Lindemberg
Monteiro, 628
Galpao 18, Osasco
CEP 06278-010 SAO PAULO
Tel.: +55 11 21664166
Fax: +55 11 21664165
vendas@lappbrasil.com.br
www.lappbrasil.com.br

 **Bulgaria**
V&V Isomatic Ltd.
128, Yanko Sakazov blvd.
1505 SOFIA
Tel.: +359 29 583111
Fax: +359 29 582270
v.v@techno-link.com
www.viv-isomatic.com

 **Canada**
Lapp Canada
3505 Laird Road, Unit 10
L5L 5Y7 MISSISSAUGA, Ontario
Tel.: +905 8 205492
Fax: +905 8 206516
sales@lappcanada.com
www.lappcanada.com

 **Chile**
Desimat Chile
Av. Puerto Vespuccio 9670
Parque Industrial Puerto Santiago
Pudahuel, SANTIAGO
Tel.: +56 2 5851200
Fax: +56 2 7470153
importaciones@desimat.cl
www.desimat.cl

 **China**
Lapp Kabel Shanghai Co., Ltd.
23A Zhaofeng Universe Building
1800 Zhongshan Road West
SHANGHAI 200235
Tel.: +86 21 64400833
Fax: +86 21 64400834
info@lappkabel.com.cn
www.lappkabel.com.cn

 **Costa Rica**
Elvatr n, SA
De Rapifre no en La Uruca
400 metros Nte.
SAN JOS E
P.O. Box 8-3770 (1000)
Tel.: +506 2242-9955
Fax: +506 2520-0697
elvatron@elvatron.com
www.elvatron.com

 **Colombia**
Transmisiones Ltda.
Carrera 69 B No. 21 A 48 Bodega
UE 28-9 Parque Industrial Salitre
BOGOT , D.C.
Tel.: +57 1 4126898
Fax: +57 1 3153315221
info@transmisiones.de

 **Croatia**
TIM KABEL
Savska cesta 103
10360 ZAGREB - Sesvete
Tel.: +385 1 5555900
Fax: +385 1 5555901
zagreb@tim-kabel.hr
www.tim-kabel.hr

 **Cyprus**
MARIOS KARANTONIS LTD
6 Pentadactilou Street, 2682
P.O. Box 14509, 2690
PALEOMETOCHO, NICOSIA
info@karantonis.com.cy
www.karantonis.com.cy

 **Czech Republic**
LAPP KABEL s.r.o.
Bartosova 315
765 02 OTRKOVICE
Tel.: +420 5 73501011
Fax: +420 5 73394650
info@lappgroup.cz
www.lappgroup.cz

 **Denmark**
Mitronic
Korskildeeng 6
2670 GREVE
Tel.: +45 43 950000
Fax: +45 43 950009
info@mitronic.dk
www.mitronic.dk

 **Ecuador**
ELSYSTEC S.A.
Electricidad Sistemas y Tecnologia
Vasco de Contreras y
Ma osca 35-251
QUITO
Tel.: +593 2 2455698
Fax: +593 2 2455698
info@elsystec.com.ec

 **El Salvador**
INTEK EL SALVADOR S.A. de C.V.
Calle Gabriela Mistral No. 373
Entre Blvd. Los H eroes y 33 Ave. NTE,
C. A.
SAN SALVADOR
Tel.: +503 2260-8888
Fax: +503 2260-8855
inteksv@intek-ca.com
www.intek-ca.com

 **Estonia**
Lapp Mitronic SIA Eesti Filiaal
Kastani pst 10
44307 RAKVERE
Tel.: +372 6 518970
Fax: +372 6 518971
orders@lappmitronic.lv
www.lappmitronic.ee

 **Finland**
SKS Automaatio Oy
Martinkyl antie 50
P.O. Box 122
01721 VANTAA
Tel.: +358 2 076461
Fax: +358 2 07646820
automaatio@sks.fi
www.sks.fi

 **France**
Lapp France s.a.r.l.
Technop le Forbach-Sud BP 50084
57602 FORBACH CEDEX
Tel.: +33 387 841929
Fax: +33 387 841794
lappfrance@lappgroup.com
www.lappfrance.fr

LAPP MULLER SAS
Z.A. du Grand Pont
83310 GRIMAUD
Tel.: +33 494 566500
Fax: +33 494 43487
info@mullercables.com
www.mullercables.com

 **Georgia**
INSTA Ltd.
8, Zakariadze str.
0177 TBILISI
Tel.: +995 32 202020
Fax: +995 32 202022
sales@insta.ge
www.insta.ge

 **Germany**
U.I. Lapp GmbH
Schulze-Delitzsch-Stra e 25
70565 STUTTGART
Tel.: +49 711 783801
Fax: +49 711 78382640
info@lappkabel.de
www.lappkabel.de

Lapp Systems GmbH
Oskar-Lapp-Str. 5
70565 STUTTGART
Tel.: +49 711 783804
Fax: +49 711 78383520
info@lappkabel.de
www.lappkabel.de

 **Ghana**
PROCESS AND PLANT AUTOMATION Ltd.
No. 3 Becca Villa, behind Cal Bank
Baatsona, Spintex Road.
P.O. Box Sr 95
ACCRA
Tel.: +233 3 02812680
ekua@automationghana.com
www.automationghana.com

 **Great Britain**
Lapp Limited
Unit 3 Perivale Park
Horsenden Lane South
UB6 7RL GREENFORD MIDDLESEX
Tel.: +44 20 87587800
Fax: +44 20 87587880
sales@lapplimited.com
www.lappgroup.co.uk

 **Greece**
Dimoulas Special Cables S.A.
100-102 Lenorman Str.
10444 ATHENS
Tel.: +30 21 05157610
Fax: +30 21 05157611
info@dimoulas.gr
www.dimoulas.gr

 **Guatemala**
INTEK GUATEMALA, S.A.
Vi a 5 y Ruta 3 4-35 Zona 4
C.P. 01004
GUATEMALA, GUA
Tel.: +502 2361-5977
Fax: +502 2334-4338
intekgt@intek-ca.com

 **Honduras**
INTEK HONDURAS, S.A. DE C.V.
3ra. Ave. entre 10 y 11 calle
N.O., local #9, EDIFICIO SIKABUN,
Barrio Las Acacias
SAN PEDRO SULA
Tel.: +504 5 503116
Fax: +504 5 578016
intekhn@intek-ca.com

 **Hong Kong**
Worldtex & Co.
Unit 11, 11/F, Tins Enterprises
Centre
777 Lai Chi Kok Rd.
CHEUNG SHA WAN
KOWLOON
Tel.: +85 22 7811860
Fax: +85 22 7814733
info@worldtex-co.com.hk

 **Hungary**
Lapp Austria GmbH m. k. k.
Neumann J anos u.1
2040 BUDA ORS
Tel.: +36 23501-250
Fax: +36 23501-259
sales@lappgroup.hu
www.lappgroup.hu

 **India**
Lapp India Pvt. Ltd.
Plot No.98, J & K
Jigani Industrial Area, II Phase
BANGALORE SOUTH - 560 105
Tel.: +91 8110 304800
Fax: +91 80 27825479
info@lappindia.com
www.lappindia.com

 **Indonesia**
PT. JJ-LAPP CABLE INDONESIA
Graha INTI FAUZI, 7th Floor
Jl. Buncit Raya No. 22
JAKARTA 12510
Tel.: +62 21 27537051
Fax: +62 21 27537052
sales_jji@jjsea.com
www.jj-lappcable.com

 **Island**
Johan R nning Ltd.
Klettgardar 12
104 REYKJAVIK
Tel.: +354 5 200800
Fax: +354 5 200888
ronning@ronning.is
www.ronning.is


 **Israel**
Arrow Control Cables Ltd.
7, Zaviton street
49950 NEHALIM
Tel.: +972 3 9074887
Fax: +972 3 9074889
info@arrowcables.com
www.arrowcables.com

 **Italy**
LAPP ITALIA S.R.L.
Via Lavoratori Autobianchi 1
Building 20
20832 DESIO (MB)
Tel.: +39 362 4871
Fax: +39 362 487330-340
lappitalia@lappitalia.it
www.lappitalia.it

Camuna Cavi s.r.l.
Via Lavoratori Autobianchi 1
Building 20
20832 DESIO (MB)
Tel.: +39 364 773411
Fax: +39 364 770120
info@camunacavi.it
www.camunacavi.it

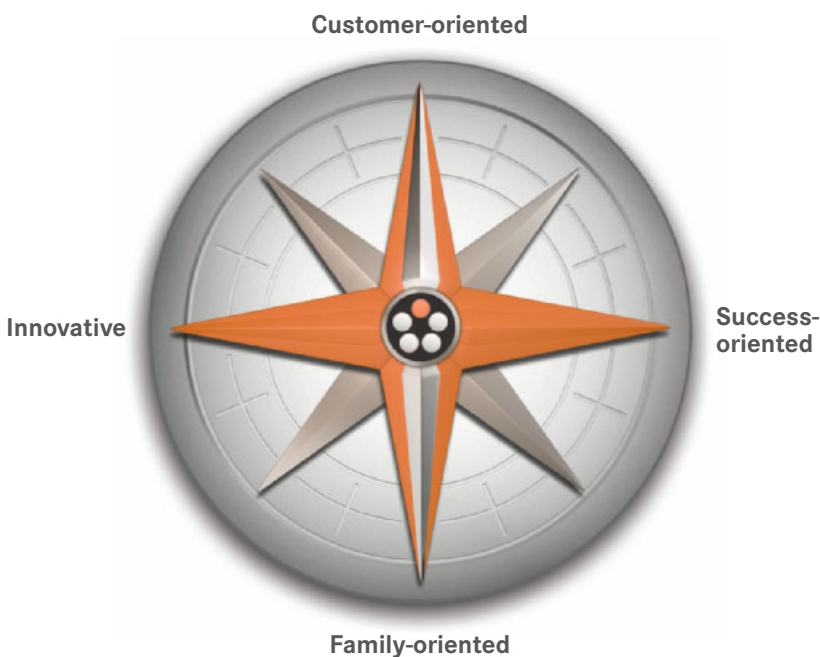
Production Site:
Via General Treboldi, 128
25048 EDOLO (BS)
Tel.: +39 364 773411
Fax: +39 364 770120
info@camunacavi.it
www.camunacavi.it

 **Japan**
K.Mecs Co., Ltd.
Headquarters Yusen Iwamotocho
Bldg. 3F
2-3-3 Iwamotocho, Chiyodaku
101-0032 TOKYO
Tel.: +81 3 58255333
Fax: +81 3 58258550
info@kmecs.co.jp
www.kmecs.com

 **Kazakhstan**
SAR
Sales Area Representative
Alexandr Zemlyanoy
Tel.: +77273 282346
Mob.: +7777 2877330
Alexandr.Zemlyanoy@lappgroup.kz



Our guiding principles



Customer-oriented

We strive to make our customers successful in their markets.

We work together reliably with our partners in a spirit of trust.

- We take each existing and potential customer serious and treat one another with respect
- We guarantee our customers worldwide security of supply through international manufacturing locations and local stocking of Lapp brand-name products
- We are there for our customers all over the world with our competent staff
- We find quick, flexible and simple solutions for our customers
- We provide our customers a competitive price-performance ratio
- We work together with our partners on a long-term basis and grow with them
- We complete our range of skills with strong partners
- We strengthen our global growth with an international network of partners



Success-oriented

Success orientation is important to us in order to secure our independence and our profitable growth.

- Our achievement-oriented organisation inspires customers and other stakeholders
- Our organisation is versatile and adapts to new challenges
- Our organisation has transparent structures which are aligned with our processes
- We encourage team-oriented decision making
- We remain conscious of our risks while driving our growth
- We are cost and result conscious
- We orient ourselves to mutually agreed targets and communicate these
- Our decisions are sustainable and long-term oriented

Family-oriented

Long-term orientation, warmth and the familiar atmosphere of our family-owned and operated company stand against coldness and anonymity.

- Our corporate culture is characterised by treating one another with respect
- We promote personal responsibility and initiative
- We communicate openly and transparently
- We work together toward our goal in a spirit of trust
- We reflect our thoughts and actions constructively
- We secure our future through actively training and developing our staff
- We respect human rights, values and standards in all cultures. We are committed to social responsibility
- The shareholders identify themselves with the company. Lapp remains a family-owned enterprise

Innovative

For us, innovation means future-oriented solutions for our customers.

- We continuously develop our products, system solutions and services
- We set standards with our brand-name products in terms of safety, quality and functionality
- We are always striving towards improvements in methods, processes and technologies
- We manufacture our innovative brand-name products in our own, flexible plants
- We pledge ourselves to ensure safety, the well-being of our employees, the protection of our environment and the conservation of resources when manufacturing our products

Brand quality from Stuttgart



ÖLFLEX® Power- and control cables

The world's first brand cable is available in the most varied of versions to match maximum requirements.

Key features: Oil-resistant, flexible and available to match almost any requirement or environmental condition – also free of halogens.

Fields of application: Multipurpose. Special variants are more and more in demand in the area of renewable energies.

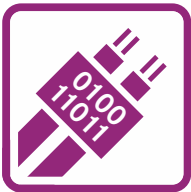


EPIC® Industrial connectors

The brand for strong and reliable connections.

Key features: Robust square and circular connectors. Flexible system consisting of housings, inserts, contacts and accessories – for every requirement, the tailor-made solution. Similarly, EPIC® SOLAR plugs for photovoltaics are also part of the extensive product range.

Fields of application: Mechanical and systems engineering, drive technology, Automation.



UNITRONIC® Data communication systems

The ideal brand for fast, trend-setting and reliable data transfer.

Key features: UNITRONIC® are not only data lines, but also bus lines, which together with active sensor/actuator modules or gateways provide a perfect system for automation.

Fields of application: Measurement, control, regulation, bus or LAN networks.



SKINTOP® Cable glands

The brand for multipurpose cable entries in line with the following: quickly fastened, centred and hermetically sealed.

Key features: Large clamping areas, optimum strain reliefs, the most diverse of versions such as SKINTOP® CLICK, COLD or CUBE.

Fields of application: Everywhere, where cables must be fastened reliably and quickly.



ETHERLINE® Data communication systems for ETHERNET-Technology

The brands for network solutions, safety systems and firewalls in the industrial networking sector.

Key features: System solutions consisting hardware, software, consulting, network design and support.

Fields of application: Factory automation, Renewable Energy, Building technology, Structured cabling.



SILVYN® Protective cable conduit- and cable carrier systems

The brand for all-round cable protection.

Key features: The product range includes SILVYN® cable protection hoses for perfect protection against mechanical and chemical loads, along with SILVYN® CHAIN energy supply chains for highly-dynamic applications.

Fields of application: Everywhere that cables have to be additionally protected or routed.



HITRONIC® Optical transmission systems

The brand for split-second, fault-free, intercept-free data transport.

Key features: The HITRONIC® product range includes fibre optic cables in the most varied of versions, along with suitable accessories such as splice boxes, wall distributors or couplings.

Fields of application: Office and industrial sector, Renewable Energy.



FLEXIMARK® Cable marking systems

The brand for permanent, clearly-arranged cable markings.

Key features: Comprehensive range – from manual labelling solutions onto digital identification. Withstands high chemical, thermal and mechanical loads.

Fields of application: All cable, single cores, control cabinets.

May I help you?

There are different ways leading to Lapp. You can leave your order by phone or fax or by sending an e-mail.

Cable Finder

Make short work of searching for cables.
www.lappgroup.com/cablefinder

Connector Finder

Configure your EPIC® square, circular or solar plugs online, with only a few clicks of the mouse.
www.lappgroup.com/connectorfinder

CAD Product Catalogue

Design time costs money. Our CAD Product Catalogue enables developers and planners to save both.
www.lappgroup.com/3d-data





Our test laboratory

Multimillion bending cycles at maximum speeds and minimum bending radii. This is only one of many tests that a highly-flexible line has to withstand to be accepted into our standard product range.

In addition to load and endurance tests, state-of-the-art analysis methods are employed. For example, we use x-ray methods such as EDX to detect any possible hazardous materials. This ensures that all cables and products from the standard delivery programme are free from substances of high concern in accordance with the REACH regulation and components do not exceed the limit values set out by the RoHS Directive.

With this in mind: You are very welcome to put your own products through their paces in our trial and test centre.

Pictogrammes:

With the aid of internationally-approved pictogrammes, the directives, standards and conformalities with which our products comply can be easily recognised straight away.

Regional registrations such as for North America or Canada or user-specific registrations such as RoHS, DNV or WEEE are frequent requirements for relevant use of the products.

See appendix T30



Certificates and quality seals

Many of our products are certified, just like our companies. Certificates are always awarded by independent bodies. They are both a seal of quality and a certificate of non-objection, representing technical “passports” for international use.

Our most important certificates

www.lappgroup.com/certificates



Lapps Strategic Markets



Mechanical engineering



Solar energy



Wind energy

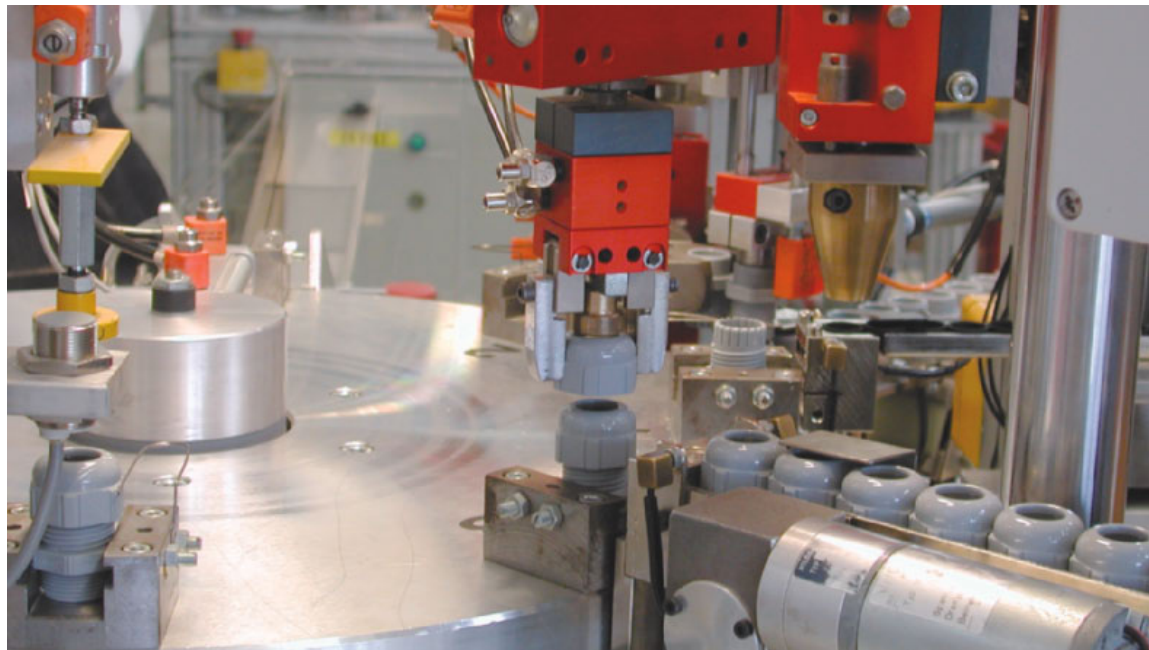
Photo: PowerWind GmbH/J. Meier

Lapps Strategic Markets

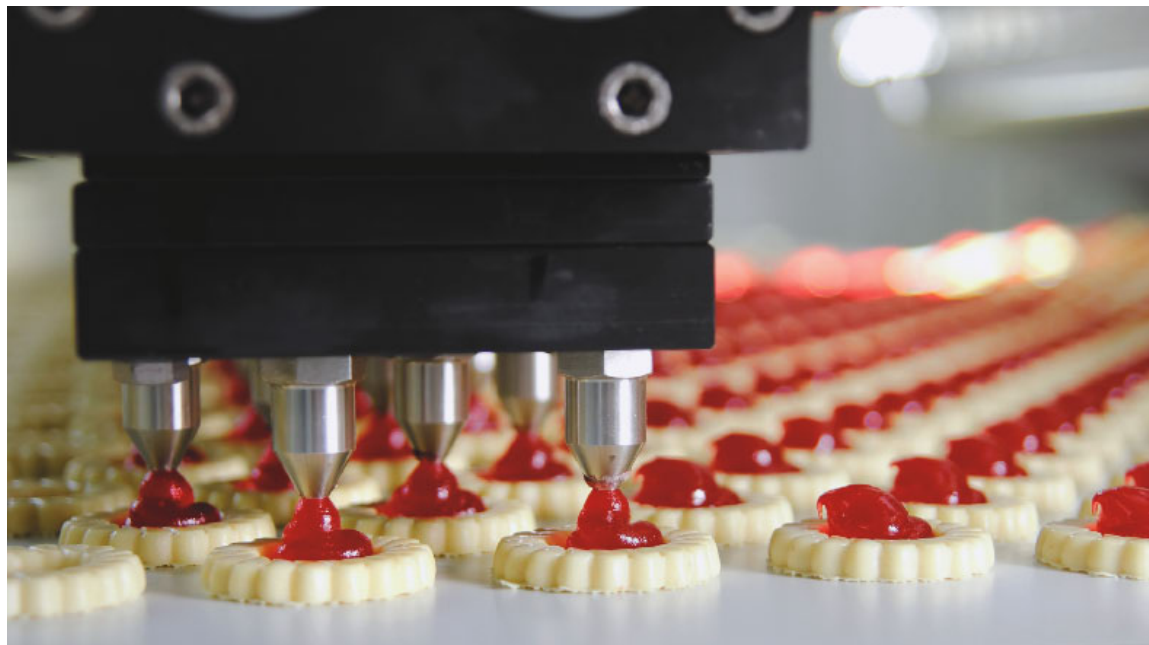
eMobility



Automation



Food & Beverage



Finding everything easily – the new navigation

Content

- Information about the company 2
- ÖLFLEX® Power and control cables 19
- UNITRONIC® Data communication systems 253
- ETHERLINE® Data communication systems for ETHERNET technology 403
- HETRONIC® Optical transmission systems 427
- EPIC® Industrial connectors 441
- SCENTOP® Cable glands 443
- SILVYN® Protective cable conduits and cable carrier systems 755
- FLEXIMARK® Cable marking systems 849
- Cable Accessories 897
- Appendix: Selection Tables, Technical Tables, Index of part numbers, Index of products 977

Content
 on the first page, there is the table of contents including a list of the product lines and page reference

Product lines directories
 in front of each product line, you will find a structured directory of the following pages

Product lines directories
 in front of each product line, you will find a structured directory of the following pages

Key word index
 sorted by group, you will find everything from Adapters to ZT Stainless steel – Character holders

Key word index
 sorted by group, you will find everything from Adapters to ZT Stainless steel – Character holders

Index of products
 a numerical overview with direct page references leading to the products

Index of products
 a numerical overview with direct page references leading to the products

How we help you:
 To help you to find, out of 40,000 items, those that are the most suitable for individual use, you will find further advice and information about our products in our appendix.

- In part T0 you can find information about the selection and handling of our products.
- In parts T1 to T30 detailed information is given and the relevant standards are referred to, such as: Assembly and cable laying guidelines, rating tables, colour codes and an overview about chemical resistance.
- The selection tables A1 to A13 provide information about important features and the relevant degree of fulfilment for different product categories, such as: Temperature range, nominal voltage, bending radius, typical industrial applications.

By this we would like to help you to prevent erroneous applications and to ensure intended use.

- Legend for abbreviations**
 Legend for abbreviations of product names (e.g. ÖLFLEX® CLASSIC 110 CY):
- C: Screened
 - Y: Outer sheath made of PVC
 - CY: screened, Outer sheath made of PVC (C = screened; Y = Outer sheath made of PVC)
 - S: Steel wire braid
 - SY: steel wire braid, Outer sheath made of PVC (S = steel wire braid; Y = Outer sheath made of PVC)
 - P: Outer sheath made of polyurethane (PUR)
 - CP: screened, Outer sheath made of Polyurethan
 - H: halogenfree
 - CH: screened, halogenfree
 - FD: Cable for Power Chain
 - TP: Twisted Pair

Running titles

Simple and convenient navigation from the table of contents to the product:

- ① Product group
- ② Sub-product group
- ③ Application range

Product images

Find the right products using detailed images

Additional information

Useful information about the Lapp products

Product designation

Benefits

Provides a quick and easy guide to the special features and advantages of the products

Application range

Provides information regarding the ideal application of Lapp products

Product features

Find the right product in terms of function and safety

Approvals (Norm references)

Clearly demonstrating the applicable guidelines, standards and conformities

Design

Provides information on make-up, processing and the materials used


Technical data

The parameters for all important product features

Table of Products

Provides you with a quick overview of product data and part numbers

ÖLFLEX®




① Power- and control cables
 ② Power chain applications
 ③ Servo applications - power drive systems, approved

New

ÖLFLEX® SERVO FD 796 CP

LAPP KABEL STUTTGART ÖLFLEX® SERVO FD 796 CP



Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Multi-standard+ fewer part varieties – cost savings
- Suitable for use with servomotor drive systems from leading manufacturers
- The advantage: the modified design of the control core pairs means the longitudinal voltage drop is lower; it also permits considerably higher operating voltages in the auxiliary circuits
- To substitute 7 ÖLFLEX® SERVO FD product lines: 75SCP-/75SCP DESINA-/781CP-/785CP-/785CP DESINA-/790CP-/795CP

Product features

- Dynamic performance in power chains: Acceleration up to 50 m/s². Travel speeds up to 5 m/s. Travel distances up to 100 m.
- Low-capacitance design: this may result in lower EMI interference, depending on the drive's electrical operating conditions.
- Halogen-free materials
- Flame retardancy: UL/CSA: VW-1, FT1. IEC/EN: 60332.1.2
- Oil-resistant

Approvals

CE, RoHS

- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: polypropylene (PP)
- Individual design depending on the item: power cores with or without one pair, or with two control core pairs, in pairs, with screening, twisted together in short lay lengths
- Non-woven wrapping
- Tinned copper braiding
- PUR outer sheath, orange (RAL 2003)

Info

- New high-end version! For very dynamic motion sequences
- Slim = less space required
- Multiple certifications

Technical data

Core identification code
 Power: black cores with marking U/L1/C/L-; V/L2; W/L3/D-/L- and 1 green-yellow core
 Optional designs with one pair of control cores: black; white
 Two pairs of control cores: black with white numbers: 5, 6, 7, 8

Approvals
 VDE reg. submitted
 UL AWM Style 20234
 CSA AWM I/II, A/B 1000 V 80° FT 1

Specific insulation resistance
 > 20 GOhm x cm

Conductor stranding
 Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6

Minimum bending radius
 For flexible use:
 7.5 x outer diameter (1.5-16 mm)
 10 x outer diameter (25-50 mm)
 Fixed installation: 4 x outer diameter

Nominal voltage
 IEC: power cores and control cores: U0/U: 600/1000 V
 UL & CSA: 1000 V

Test voltage
 Core/Coil: 4 kV
 Core/Screen: 4 kV

Protective conductor
 G – with GR-VE protective conductor

Temperature range
 Flexing: -40°C to +80°C
 Fixed installation: -50°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO FD 796 CP									
0027956	4 G 1.5	9.2	79.0	140	0027963	4 G 10 + (2 x 1.5)	19.4	515.0	701
0027951	4 G 2.5	10.6	129.0	197	0027964	4 G 16 + (2 x 1.5)	23.8	250.0	1848
0027952	4 G 4	11.9	186.0	268	0027965	4 G 25 + (2 x 1.5)	27.0	1,147.0	1532
0027953	4 G 6	14.4	246.0	397	0027966	4 G 35 + (2 x 1.5)	31.2	1,538.0	2097
0027954	4 G 10	17.6	449.0	591	0027967	4 G 50 + (2 x 1.5)	34.7	2,181.0	2721
0027955	4 G 16	22.0	716.0	955	0027969	4 G 1.5 + 2 x (2 x 0.75)	12.2	151.0	313
0027956	4 G 25	25.2	1,073.0	1337	0027970	4 G 2.5 + 2 x (2 x 1.0)	14.6	209.0	395
0027957	4 G 35	28.7	1,480.0	1769	0027971	4 G 4 + (2 x 1.0) + (2 x 1.5)	16.3	336.0	485
0027958	4 G 50	33.4	2,115.0	2468	0027972	4 G 6 + (2 x 1.0) + (2 x 1.5)	18.1	438.0	588
0027959	4 G 1.5 + (2 x 1.0)	12.0	135.0	261	0027973	4 G 10 + (2 x 1.0) + (2 x 1.5)	21.8	602.0	819
0027960	4 G 2.5 + (2 x 1.5)	13.8	188.0	318	0027974	4 G 16 + 2 x (2 x 1.5)	25.1	794.0	1135
0027961	4 G 4 + (2 x 1.5)	14.9	235.0	385	0027975	4 G 25 + (2 x 2 x 1.5)	28.9	1,179.0	1599
0027962	4 G 6 + (2 x 1.5)	17.0	329.0	486	0027976	4 G 35 + 2 x (2 x 1.5)	31.4	1,580.0	2093
					0027977	4 G 50 + 2 x (2 x 2.5)	36.8	2,249.0	2920

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO 709 CY refer to page 91

Accessories

- Circular connectors refer to page 597
- SKINDICHT® EMC/Earthing refer to page 668

102 For current information see: www.lappgroup.com

Cross-references

Supplementary products and matching accessories



**Lapp Ideas:
The Innovative
Community of
the Lapp Group**



“There needs to be something invented for that...” – Has this thought ever occurred to you, more than once perhaps? If so, then Lapp Ideas is exactly what you’re looking for, serving as your direct link to our Development department.

What is “Lapp Ideas”?

Lapp Ideas is the new innovation platform from the Lapp Group. If you have an innovative idea or improvement suggestion for cable and connection technology, or if none of our 40,000 plus standard products meet your requirements, then you have come to the right place with. Share your thoughts on the Lapp Ideas platform, discuss possible solutions with other users and watch as development progresses!




The World of Lapp

How does “Lapp Ideas” work?

If you have an idea that you would like to share with us and other users, simply register to get started! Once you have submitted your idea, our Development experts will check it and release it to the platform community. Or, if you wish, you can send us your idea in confidence. Step 2 involves our experts verifying that your idea has not already been developed elsewhere. Once it has been confirmed that your idea really is unique, it will be integrated into the Lapp development process and our experts will contact you to discuss further action. Good ideas are also rewarded, of course. There are attractive bonuses to be gained, depending on the stage of development. Take part today – You won’t regret it!

www.lappideas.com

 **LAPP GROUP** WORLDWIDE

HOME IDEAS ABOUT LAPP IDEAS PROFILE

Elements of an idea

Enter the title here

Enter the text here

Strictly confidential – Other users will not be able to see the idea
 Notify me per email when my idea receives comments

Attach file

ÖLFLEX® Power- and control cables	Page		
ÖLFLEX® SERVO FD 796 CP	103	EPIC® H-Q 4+2/EPIC® H-Q 8/EPIC® H-Q 17	593
ÖLFLEX® CHAIN 815 CY	110	EPIC® H-Q Hood Plastic	594
ÖLFLEX® CHAIN 808 P	111	EPIC® H-Q panel mount base Plastic	594
ÖLFLEX® CHAIN 808 CP	112	EPIC® H-Q Surface Mount Base Plastic	594
ÖLFLEX® CHAIN 815 CP	115	EPIC® H-Q Cable Coupler Plastic	595
ÖLFLEX® PETRO FD 865 CP	118	EPIC® H-Q Hood Metal	595
ÖLFLEX® CHAIN 809	123	EPIC® H-Q Panel Base Metal	595
ÖLFLEX® CHAIN 809 CY	124	EPIC® H-Q Contacts	596
ÖLFLEX® SOLAR XLR-R	145	EPIC® H-Q Cable gland	596
ÖLFLEX® SOLAR XLS-R	148	EPIC® H-Q Accessories	596
ÖLFLEX® SOLAR XLR 4703	149	EPIC® LS1.5	623 – 625
ÖLFLEX® TRAF0 XLv 1.8/3 kV	151	EPIC® LS1.5 Contacts male	626
ÖLFLEX® SOLAR XLS-R T	152	EPIC® LS1.5 Contacts female	626
eMobility assembled cables and connectors	245 – 252	EPIC® LS1.5 Tools	626
		EPIC® LS3	627 – 628
		EPIC® LS3 Contacts male	629
		EPIC® LS3 Contacts female	629
		EPIC® LS3 Tools	629
		EPIC® SOLAR 4 THIN M pre-assembled	640
		EPIC® SOLAR 4 THIN F pre-assembled	640
UNITRONIC® Data communication systems		SKINTOP® Cable glands	
UNITRONIC® BUS ASI/UNITRONIC® BUS ASI FD	300 – 301	SKINTOP® ST-M/SKINTOP® STR-M	652
UNITRONIC® BUS PB Y 7-W FC BK	306	SKINTOP® CLICK/SKINTOP® CLICK-R	654
EPIC® Data PROFIBUS Connectors 90° M12	323	SKINTOP® SOLAR/SKINTOP® SOLAR plus	655
S/A cable: M12 socket on free conductor end	339	SKINTOP® ST-HF-M	656
S/A cable: M8 connector on free conductor end	342	SKINTOP® CLICK BS	658
S/A cable: M12 socket on free conductor end	347	SKINTOP® K-M ATEX plus/SKINTOP® KR-M ATEX plus	660
S/A cable: M12 connector on M12 socket	348	SKINTOP® K-M ATEX plus blue/	
S/A cable: M8 connector on free conductor end	350	SKINTOP® KR-M ATEX plus blue	661
S/A cable: M8 connector on M8 socket	352	SKINTOP® MS-M/SKINTOP® MSR-M	662
S/A cable: M12 connector on M12 socket	355	SKINTOP® COLD/SKINTOP® COLD-R	664
S/A cable: M12 connector/socket		SKINTOP® MS-M ATEX BRUSH	667
on free conductor end	356	SKINTOP® MS-M BRUSH	669
S/A cable: M12 connector on M12 socket	357	SKINTOP® DIX-M AUTOMATION	673
S/A cable: shielded, M12 connector		SKINTOP® CUBE	676
on free conductor end	358	SKINTOP® CLICK BLK	696
S/A cable: shielded, M12 socket on free conductor end	359	SKINDICHT® MR-M hexagonal	700
Field mountable valve connectors	368	SKINMATIC® MH Set	710
S/A box with M12 slots and master cable	371	SKINTOP® MS-SC NPT/SKINTOP® MS BRUSH	714
Field mountable S/A connectors M12	377		
Field mountable S/A connectors M8	378	SILVYN® Protective cable	
S/A M12 flush-type connectors with		conduit- and cable carrier systems	
M16 fastening thread	380	SILVYN® BRAID PA6/SILVYN® BRAID SNAP PET	758
S/A M12 flush-type connectors with		SILVYN® SHRINK BRAID PET	758
PG9 fastening thread	381	SILVYN® EL/SILVYN® ELÖ/SILVYN® ELT	769 – 771
PROFIBUS cable: M12 connector		SILVYN® MPC/SILVYN MPC-M	772
on free conductor end	391	SILVYN® MPC 90°/SILVYN MPC 90° M	773
PROFIBUS Cable: straight M12 connector		SILVYN® SPLIT GMP-M	810
M12 on straight M12 socket	392	SILVYN® HIPROSILTAPE	825
		SILVYN® FG/SILVYN® AMG-M FG	832 – 833
		SILVYN® CHAIN KITS	848
ETHERLINE® Data communication systems		FLEXIMARK® Cable marking systems	
for ETHERNET-Technology		FLEXIMARK® ULTRA L 12X8,5	878
ETHERLINE® Y CAT.5e BK 2x2AWG22/7	408	FLEXIMARK® LA Labels	882
ETHERLINE® Cat.6 FD	409	FLEXIMARK® FLEXILABEL TFL Cable marking	887
UNITRONIC® LAN 200 MHz – CAT.5e	410		
UNITRONIC® LAN 250 MHz – CAT.6	411	Cable Accessories	
UNITRONIC® LAN 500 MHz – CAT.6 _A	412	DSA 0110 + DSA 0725 crimping pliers	924
UNITRONIC® LAN 1000 MHz – CAT.7	413	CSA 0760 + KSA 0760 crimping pliers	924
UNITRONIC® LAN 1200 MHz – CAT.7 _A	414	DRB 0505 + DRB 0115 crimping pliers	925
UNITRONIC® LAN 1500 MHz – CAT.7 _A	414	KRB 0560 crimping pliers	925
UNITRONIC® LAN Outdoor/UNITRONIC® LAN Flex	415	DKB 0325 + DKB 0360 crimping pliers	926
Connector RJ45 Cat.6 _A fieldmountable	419	KWB 4099 crimping pliers	926
		TY-RAP® detectable cable ties	956
		AS-I clip clamp/AS-I cable end sealing	967
		Cable trolley system for flat and round cables	970 – 971
HITRONIC® Optical transmission systems			
HITRONIC® HQW armoured Outdoor Cable	435		
EPIC® Industrial connectors			
EPIC® Q Contacts	496		
EPIC® ULTRA H-B 6	521 – 522		
EPIC® ULTRA H-B 10	523		
EPIC® ULTRA H-B 16	524		
EPIC® ULTRA H-B 24	525		

Various applications	
PVC outer sheath and coloured cores	22
PVC outer sheath and numbered cores	29
Intrinsically safe circuits	39
PVC sheath, approved	41
Halogen-free	52
Harsh conditions	
High mechanical and chemical resistance	61
Rubber cables	78
Servo applications	
PVC sheath	87
PVC sheath, approved	91
Power chain applications	
Servo applications - power drive systems	95
Servo applications - power drive systems, approved	102
Various applications	108
Harsh conditions	111
Various applications, approved	121
Harsh conditions, approved	129
Torsion, articulated robot	131
Torsion, articulated robot, approved	133
Special applications	
Special single cores	135
Commercial vehicles	137
Rolling stock	140
Photovoltaic	145
Wind energy	154
Temperature measurement (extension and compensating cables)	157
Conveyor technology	
Reelable	161
With support element	164
For push-button control units	165
For lifts	166
Flat cables	169
Expanded ambient temperatures	
PVC cables (-20°C to +90°C)	172
Cross-linked cables (-55°C to +125°C)	173
Silicone cables (-50°C to +180°C)	175
FEP cables (-100°C to +205°C)	182
PTFE cables (-190°C to +260°C)	183
Glass fibre cables (above +260°C)	185
Cross-linked single cores (-55°C to +125°C)	187
Silicone single cores (-50°C to +180°C)	188
FEP single cores (-100°C to +205°C)	191
PTFE single cores (-190°C to +260°C)	192
Glass fibre single cores (above +260°C)	193
Control Cabinet Single Cores	
Various applications	195
Harmonised and approved	203
Halogen free	208
EMC-optimised	212
Building Installation	
Various applications	214
VDE standard cables	215
Cables for direct burial	217
Assembled cables	
Servo and power drive systems	222
TRUCK applications	227
Spiralised	230
Connection and extension cables	236
Ground straps	242
Pre-wired front-end connector	243
eMobility - Assembled charging line, 7-pin	245
eMobility - Assembled charging socket, 7-pin	248
eMobility - Assembled charging line, 3-pin, 5-pin	249
eMobility - Assembled charging socket, 3-pin, 5-pin	252



Various applications

PVC outer sheath and coloured cores

ÖLFLEX® CLASSIC 100	22
ÖLFLEX® CLASSIC 100 YELLOW	24
ÖLFLEX® CLASSIC 100 CY	25
ÖLFLEX® CLASSIC 100 SY	26
ÖLFLEX® CLASSIC 100 BK POWER 0,6/1kV	27
PVC outer sheath and numbered cores	
ÖLFLEX® CLASSIC 110	29
ÖLFLEX® CLASSIC 110 COLD	31
ÖLFLEX® CLASSIC 110 ORANGE	32
ÖLFLEX® CLASSIC 110 CY	33
ÖLFLEX® CLASSIC 110 SY	34
ÖLFLEX® CLASSIC 110 BLACK 0,6/1kV	35
ÖLFLEX® CLASSIC 110 CY BLACK 0,6/1 kV	36
ÖLFLEX® CLASSIC 115 CY	38
Intrinsically safe circuits	
ÖLFLEX® EB	39
ÖLFLEX® EB CY	40
PVC sheath, approved	
ÖLFLEX® 140	41
ÖLFLEX® 140 CY	42
ÖLFLEX® 150 QUATTRO	43
ÖLFLEX® 150 CY QUATTRO	44
ÖLFLEX® 191	45
ÖLFLEX® 191 CY	46
ÖLFLEX® CONTROL TM	47
ÖLFLEX® CONTROL TM CY	48
ÖLFLEX® TRAY II	49
ÖLFLEX® TRAY II CY	50
ÖLFLEX® SF	51
Halogen-free	
ÖLFLEX® CLASSIC 100 H	52
ÖLFLEX® CLASSIC 110 H	53
ÖLFLEX® CLASSIC 110 CH	54
ÖLFLEX® 120 H	55
ÖLFLEX® 120 CH	56
ÖLFLEX® CLASSIC 130 H	57
ÖLFLEX® CLASSIC 135 CH	58
ÖLFLEX® CLASSIC 130 H BK 0,6/1kV	59
ÖLFLEX® CLASSIC 135 CH BK 0,6/1kV	60

Harsh conditions

High mechanical and chemical resistance

ÖLFLEX® PETRO C HFFR	61
ÖLFLEX® ROBUST 200	62
ÖLFLEX® ROBUST 210	63
ÖLFLEX® ROBUST 215 C	64
ÖLFLEX® CLASSIC 400 P	65
ÖLFLEX® CLASSIC 400 CP	66
ÖLFLEX® CLASSIC 415 CP	67
ÖLFLEX® 440 P	68
ÖLFLEX® 440 CP	69
ÖLFLEX® 491 P	70
ÖLFLEX® CONTROL M	71
ÖLFLEX® FORTIS	72
ÖLFLEX® 450 P	73
ÖLFLEX® 500 P	74
ÖLFLEX® 540 P	75
ÖLFLEX® 540 CP	76
ÖLFLEX® 550 P	77
Rubber cables	
H05RR-F	78
H05RN-F	79
H07RN-F	80
H07ZZ-F	81
H01N2-D	82
NSSHÖU	83
NSGAFöu 1.8/3 kV	84
NSHXAFö 1.8/3 kV	85
H07RN8-F	86

Servo applications

PVC sheath

ÖLFLEX® SERVO 700	87
ÖLFLEX® SERVO 700 CY	88
ÖLFLEX® SERVO 720 CY	89
ÖLFLEX® SERVO 2YSLCY-JB	90
PVC sheath, approved	

ÖLFLEX® SERVO 709 CY	91
ÖLFLEX® SERVO 9YSLCY-JB	92
SERVO cables in acc. to SIEMENS® Standard 6FX 5008-	93
SERVO Cables in acc. to SEW® Standard	94

Power chain applications

Servo applications - power drive systems

ÖLFLEX® SERVO FD 750 P	95
ÖLFLEX® SERVO FD 755 P	96
ÖLFLEX® SERVO FD 760 CP	97
ÖLFLEX® SERVO FD 770 CP	98
ÖLFLEX® SERVO FD 770 CP DESINA®	99
ÖLFLEX® SERVO FD 781 CY	100
ÖLFLEX® SERVO FD 785 P	101

Servo applications - power drive systems, approved

ÖLFLEX® SERVO FD 795 P	102
ÖLFLEX® SERVO FD 796 CP	New 103
SERVO cables in acc. to SIEMENS® Standard 6FX 8PLUS	104
SERVO cables in acc. to INDRAMAT® Standard INK	105
SERVO cables in acc. to LENZE® Standard	106
Special Encoder and resolver cables	107

Various applications

ÖLFLEX® FD CLASSIC 810	108
ÖLFLEX® FD CLASSIC 810 CY	109
ÖLFLEX® CHAIN 815 CY	New 110

Harsh conditions

ÖLFLEX® CHAIN 808 P	New 111
ÖLFLEX® CHAIN 808 CP	New 112
ÖLFLEX® FD CLASSIC 810 P	113
ÖLFLEX® FD CLASSIC 810 CP	114
ÖLFLEX® CHAIN 815 CP	New 115
ÖLFLEX® FD 855 P	116
ÖLFLEX® FD 855 CP	117
ÖLFLEX® PETRO FD 865 CP	New 118
ÖLFLEX® CHAIN 809	119
ÖLFLEX® FD ROBUST C	120

Various applications, approved

ÖLFLEX® FD 90	121
ÖLFLEX® FD 90 CY	122
ÖLFLEX® CHAIN 809	New 123
ÖLFLEX® CHAIN 809 CY	New 124
ÖLFLEX® FD 891	125
ÖLFLEX® FD 891 CY	126
ÖLFLEX® CHAIN 879	127
ÖLFLEX® CHAIN 879 CY	128
Harsh conditions, approved	
ÖLFLEX® FD 891 P	129
ÖLFLEX® FD 891 CP	130
Torsion, articulated robot	
ÖLFLEX® ROBOT 900 P	131
ÖLFLEX® ROBOT 900 DP	132
Torsion, articulated robot, approved	
ÖLFLEX® ROBOT F1	133
ÖLFLEX® ROBOT F1 (C)	134

Special applications

Special single cores

LiFY	135
LiFY MEASURING	135
ESUY Copper Earthing Cable	136
X00V3-D Copper Earthing Cable	136
Commercial vehicles	
ÖLFLEX® TRUCK 170 FLRY	137
ÖLFLEX® TRUCK 470 P FLRY11Y	138
ÖLFLEX® TRUCK REFLEX FLRY11Y	139
ÖLFLEX® TRUCK 170 TWIN	139

Rolling stock

ÖLFLEX® TRAFFIC 3GKW	140
ÖLFLEX® TRAFFIC 3GKW flex	141
ÖLFLEX® TRAFFIC 3GKW C-flex	142
ÖLFLEX® TRAFFIC 4GKW-AXplus	143
ÖLFLEX® TRAFFIC 4GKW-AXplus C-flex	144

Photovoltaic

ÖLFLEX® SOLAR XLR-R	New 145
ÖLFLEX® SOLAR XLR	146
ÖLFLEX® SOLAR XLR TF	147
ÖLFLEX® SOLAR XLS-R	New 148
ÖLFLEX® SOLAR XLR 4703	New 149
ÖLFLEX® SOLAR XLSv	150

ÖLFLEX® TRAFO XLv 1.8/3 kV	New	151	Multi-Standard SC 1	203
ÖLFLEX® SOLAR XLS-R T	New	152	Multi-Standard SC 2.1	204
ÖLFLEX® SOLAR V4A		153	Multi-Standard SC 2.2	206
Wind energy			Halogen free	
ÖLFLEX® TORSION		154	H05Z-K 90°C	208
ÖLFLEX® TORSION FRNC		155	H07Z-K 90°C	209
ÖLFLEX® TORSION D FRNC		155	X05Z-K 110°C	210
Temperature measurement (extension and compensating cables)			X07Z-K 110°C	211
Extension- and compensating cables, paired		157	EMC-optimised	
Extension- and compensating cables, multi-paired		159	LiYCY	212
Conveyor technology			Li2YCY	212
Reelable			Li5YCY	213
ÖLFLEX® CRANE NSHTÖU		161	Building Installation	
ÖLFLEX® CRANE VS (N)SHTÖU		162	Various applications	
ÖLFLEX® CRANE PUR		163	ÖLFLEX® STATIC CY black	214
With support element			VDE standard cables	
ÖLFLEX® CRANE		164	NYM-J	215
For push-button control units			(N)HXMH	216
ÖLFLEX® CRANE 2S		165	Cables for direct burial	
For lifts			NYJ-J, NYJ-O	217
ÖLFLEX® LIFT		166	NYCY	219
ÖLFLEX® LIFT T		167	NYCWY	220
ÖLFLEX® LIFT S		168	NAYY-J	221
Flat cables			Assembled cables	
ÖLFLEX® CRANE F		169	Servo and power drive systems	
ÖLFLEX® CRANE CF		170	Servo harnessing according to SIEMENS® 6FX5002-	222
ÖLFLEX® LIFT F		171	Servo harnessing according to SIEMENS® 6FX 8002-	223
			Servo harnessing according to INDRAMAT® IKG / RKL	224
			Servo harnessing according to INDRAMAT® IKS / RKG	224
			Servo harnessing according to LENZE®	225
			Servo harnessing according to SEW®	226
			TRUCK applications	
			ÖLFLEX® TRUCK SPIRAL ABS	227
			ÖLFLEX® TRUCK SPIRAL EBS	227
			ÖLFLEX® TRUCK SPIRAL 15-pole	228
			ÖLFLEX® TRUCK SPIRAL 7-pole	228
			TRUCK adapters and cables	229
			TRUCK Cables for batterie-charging	229
			Spiralised	
			ÖLFLEX® SPIRAL 400 P	230
			SPIRAL H07BQ-F BLACK	232
			ÖLFLEX® SPIRAL 540 P	233
			ÖLFLEX® SPIRAL 540 P with angular, isolated ground plug	234
			UNITRONIC® SPIRAL	235
			Connection and extension cables	
			ÖLFLEX® PLUG H03VV-F Net Connection Cable	236
			ÖLFLEX® PLUG H05VV-F Net Connection Cable	237
			ÖLFLEX® PLUG 540 P Connection Cable	238
			ÖLFLEX® PLUG Extension Cable 540 P safety yellow	239
			ÖLFLEX® PLUG Extension Cable H07RN-F	239
			ÖLFLEX® PLUG CEE Connection/	
			Extension Cable without phase shifter	240
			ÖLFLEX® PLUG CEE Connection/Extension Cable with phase shifter	241
			Ground straps	
			Ground Straps / Flat Ground Straps	242
			Pre-wired front-end connector	
			Pre-wired front plug for PLC SIMATIC® S7-300	243
			Pre-wired front plug for PLC SIMATIC® S7-400	244
			eMobility - Assembled charging line, 7-pin	
			Type 2 charging cable 7-way spiral one-sided	New 245
			Type 2 cable 7-way spiral two-sided	New 245
			Type 2 charging cable 7-way one-sided	New 246
			Type 2 charging cable 7-way two-sided	New 246
			Type 2 charging cable 7-way Helix two-sided	New 247
			eMobility - Assembled charging socket, 7-pin	
			Type 2 charging socket	New 248
			Type 2 Accessories	New 248
			eMobility - Assembled charging line, 3-pin, 5-pin	
			Type F charging cable 3-way spiral	New 249
			Type F charging cable 3-way	New 249
			CEE charging cable 3-way spiral	New 250
			CEE Charging cable 3-way	New 250
			CEE charging cable 5-way spiral	New 251
			CEE charging cable 5-way	New 251
			eMobility - Assembled charging socket, 3-pin, 5-pin	
			Type F Charging socket 3-way	New 252
			CEE charging socket 3-way	New 252
			CEE charging socket 5-way	New 252

Various applications

PVC outer sheath and coloured cores

ÖLFLEX® CLASSIC 100



Info

- Up to 5 cores and 1.5 mm²: new items with reduced core insulation thickness
- Customised colour option and printing on the outer sheath are available upon request

Benefits

- Space-saving installation due to small cable diameters
- High electrical performance due to 4 kV test voltage
- High flexibility due to short-twisted conductor layers

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
Power stations
- Dry or damp rooms that are subject to medium mechanical loads
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load

Product features

- Flame-retardant according to IEC 60332-1-2
- Good chemical resistance see Appendix T1

Approvals



Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- Cores twisted in layers
- PVC outer sheath, grey (RAL 7001)

Technical data



Core identification code

Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: ÖLFLEX® colour code, refer to Appendix T7



Based on

IEC 60227-5
HD 21.5 S3; VDE 0281 Part 5
HD 21.13 S1; VDE 0281 Part 13



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

Fine wire according to VDE 0295, class 5/IEC 60228 class 5



Minimum bending radius

Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter



Nominal voltage

Up to 1.5 mm²: U₀/U: 300/500 V
From 2.5 mm²: U₀/U: 450/750 V
From 2.5 mm², in the case of fixed and protected installations: U₀/U: 600/1000 V



Test voltage

4000 V



Protective conductor

G = with GN-YE protective conductor
X = without protective conductor



Temperature range

Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 100; U₀/U: 300/500 V				
00100004	2 X 0.5	4.8	9.6	35
00100014	3 G 0.5	5.1	14.4	42
00101224	3 X 0.5	5.1	14.4	42
00100024	4 G 0.5	5.7	19.2	54
00101234	4 X 0.5	5.7	19.2	54
00100034	5 G 0.5	6.2	24.0	63
00101244	5 X 0.5	6.2	24.0	63
0010004	6 G 0.5	6.7	28.8	73
0010005	7 G 0.5	6.7	33.6	81
0010006	8 G 0.5	8.0	38.4	97
0010007	10 G 0.5	8.6	48.0	116
0010008	12 G 0.5	8.9	58.0	133
0010009	14 G 0.5	9.5	67.0	151
0010010	16 G 0.5	10.0	76.0	169
0010011	21 G 0.5	11.7	99.0	223
0010012	24 G 0.5	12.4	114.0	254
0010016	40 G 0.5	15.4	192.0	404
00100214	2 X 0.75	5.4	14.4	45
00100224	3 G 0.75	5.7	21.6	55
00101254	3 X 0.75	5.7	21.6	55
00100234	4 G 0.75	6.2	28.8	66
00101264	4 X 0.75	6.2	28.8	66
00100244	5 G 0.75	6.7	36.0	79
00101274	5 X 0.75	6.7	36.0	79
0010025	6 G 0.75	7.3	43.3	104
0010026	7 G 0.75	7.3	50.4	109
0010027	8 G 0.75	8.8	56.0	123

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0010028	9 G 0.75	9.4	63.0	144
0010029	10 G 0.75	9.6	72.0	153
0010030	12 G 0.75	9.9	86.4	176
0010031	15 G 0.75	10.9	108.0	211
0010032	18 G 0.75	11.7	129.6	268
0010033	21 G 0.75	13.0	151.0	293
0010034	25 G 0.75	13.8	180.0	374
0010036	40 G 0.75	17.3	288.0	571
0010037	50 G 0.75	19.2	360.0	698
00100414	2 X 1.0	5.7	19.2	53
00100424	3 G 1.0	6.0	28.8	65
00102034	3 X 1.0	6.0	28.8	65
00100434	4 G 1.0	6.5	38.4	79
00102044	4 X 1.0	6.5	38.4	79
00100444	5 G 1.0	7.1	48.0	94
00102054	5 X 1.0	7.1	48.0	94
0010045	6 G 1.0	8.0	58.0	124
0010046	7 G 1.0	8.0	67.0	131
0010047	8 G 1.0	9.5	77.0	146
0010049	10 G 1.0	10.2	96.0	183
0010050	12 G 1.0	10.5	115.0	215
0010052	16 G 1.0	11.8	154.0	282
0010053	18 G 1.0	12.7	173.0	315
0010054	20 G 1.0	13.4	192.0	350
0010056	25 G 1.0	14.7	240.0	449
00100634	2 X 1.5	6.3	28.8	68
00100644	3 G 1.5	6.7	43.2	84
00101284	3 X 1.5	6.7	43.2	84

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
00100654	4 G 1.5	7.2	57.6	104
00101294	4 X 1.5	7.2	57.6	104
00100664	5 G 1.5	8.1	72.0	128
00101304	5 X 1.5	8.1	72.0	128
0010068	7 G 1.5	8.9	101.0	166
0010069	8 G 1.5	10.6	115.0	205
0010071	12 G 1.5	12.0	173.0	307
0010072	14 G 1.5	12.7	202.0	349
0010074	18 G 1.5	14.4	259.0	465
0010076	25 G 1.5	16.9	360.0	655
ÖLFLEX® CLASSIC 100; U_n/U: 450/750 V				
0010086	2 X 2.5	8.9	48.0	128
0010087	3 G 2.5	9.6	72.0	162
00100933	3 X 2.5	9.6	72.0	162
00100883	4 G 2.5	10.7	96.0	203
00100893	5 G 2.5	11.8	120.0	242
0010091	7 G 2.5	13.1	168.0	321
0010092	8 G 2.5	15.8	192.0	385
0010100	2 X 4	10.6	76.8	187
0010210	3 G 4	11.4	115.2	244
00101013	4 G 4	12.7	154.0	297
00101023	5 G 4	13.9	192.0	355
0010103	7 G 4	15.4	269.0	471
0010105	3 G 6	12.6	173.0	318
00101063	4 G 6	13.8	230.0	394
00101073	5 G 6	15.6	288.0	489

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0010108	7 G 6	17.3	403.0	651
0010301	3 G 10	15.9	288.0	516
00101093	4 G 10	17.6	384.0	650
00101103	5 G 10	19.7	480.0	792
0010111	7 G 10	21.7	672.0	1058
0010302	3 G 16	18.3	461.0	728
00101123	4 G 16	20.4	614.0	1087
00101133	5 G 16	22.8	768.0	1118
0010303	3 G 25	23.0	720.0	1388
00101153	4 G 25	25.4	960.0	1582
00101163	5 G 25	28.5	1,200.0	1771
0010304	3 G 35	25.6	1,008.0	1766
00101173	4 G 35	28.5	1,344.0	2106
00101183	5 G 35	31.9	1,680.0	2635
0010305	3 G 50	31.0	1,440.0	2556
00101193	4 G 50	34.5	1,920.0	2943
00103133	5 G 50	38.6	2,400.0	3936
0010306	3 G 70	35.3	2,016.0	3182
00101203	4 G 70	39.4	2,688.0	4092
00103143	5 G 70	44.1	3,360.0	4800
0010307	3 G 95	41.3	2,736.0	4675
00101213	4 G 95	45.8	3,648.0	5290
00103153	5 G 95	51.6	4,560.0	5600
0010308	3 G 120	47.6	3,456.0	5626
00103093	4 G 120	53.1	4,608.0	6994
00103123	4 G 185	62.8	7,104.0	8300

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Single lengths for sizes: ≥ 5G50 max. 500 m; ≥ 5G95 max. 400; ≥ 3G120 max. 500 m; ≥ 4G120 max. 300; ≥ 4G185 max. 250 m
 Photographs are not to scale and do not represent detailed images of the respective products.

- **Similar products**
- UNITRONIC® 100 refer to page 256
 - ÖLFLEX® CLASSIC 100 BK POWER 0,6/1kV refer to page 27
 - ÖLFLEX® CLASSIC 130 H BK 0,6/1kV refer to page 59

- **Accessories**
- SKINTOP® CLICK refer to page 654
 - TY - FAST® standard cable ties refer to page 955
 - STAR STRIP stripping tool refer to page 906

Various applications

PVC outer sheath and coloured cores

ÖLFLEX® CLASSIC 100 YELLOW

Yellow outer sheath for special warning purposes



Info

- For warning purposes

Benefits

- High electrical performance due to 4 kV test voltage

Application range

- For electrical circuits that remain 'live' after the main switch has been disconnected
- Service sockets and illumination circuits in electrical switchboards and cabinets

Product features

- Flame-retardant according to IEC 60332-1-2
- Good chemical resistance see Appendix T1

Approvals



Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- PVC outer sheath, yellow (RAL 1016)

Technical data



Core identification code
VDE 0293-308, refer to Appendix T9



Based on
IEC 60227-5
HD 21.5 S3; VDE 0281 Part 5
HD 21.13 S1; VDE 0281 Part 13



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
Fine wire according to VDE 0295, class 5/IEC 60228 class 5



Minimum bending radius
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter



Nominal voltage
U0/U: 450/750 VAC
In protected and fixed installations:
U0/U: 600/1000 V



Test voltage
4000 V



Protective conductor
G = with GN-YE protective conductor
X = without protective conductor



Temperature range
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 100 YELLOW; U₀/U: 450/750 V				
0010400	3 G 1.5	8.1	43.0	95
00104023	4 G 1.5	8.9	58.0	117
00104033	5 G 1.5	10.0	72.0	144
0010401	3 G 2.5	9.6	72.0	152
00104043	4 G 2.5	10.7	96.0	205
00104053	5 G 2.5	11.8	120.0	225

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® 450 P refer to page 73
- ÖLFLEX® 540 P refer to page 75

Accessories

- SKINTOP® CLICK refer to page 654
- STAR STRIP stripping tool refer to page 906

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® CLASSIC 100 CY



Info

- EMC-compliant



Benefits

- Space-saving installation due to small cable diameters
- High electrical performance due to 4 kV test voltage

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Conveyor and transport systems
- Servo drives
- In EMC-sensitive environments (electromagnetic compatibility)

Product features

- Flame-retardant according to IEC 60332-1-2
- Good chemical resistance see Appendix T1
- High degree of screening low transfer impedance (max. 250 Ω/km at 30 MHz)

Approvals



Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- PVC inner sheath, grey
- Tinned-copper braiding
- PVC outer sheath, transparent

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: ÖLFLEX® colour code, refer to Appendix T7
- Based on**
IEC 60227-5
HD 21.5 S3; VDE 0281 Part 5
HD 21.13 S1; VDE 0281 Part 13
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
Up to 1.0 mm²: U₀/U: 300/500 V
From 1.5 mm²: U₀/U: 450/750 V
Fixed, protected installation:
U₀/U: 600/1000 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 100 CY; U₀/U: 300/500 V				
0035001	2 X 0.5	7.0	41.0	75
0035002	3 G 0.5	7.3	46.0	83
00350033	4 G 0.5	7.9	55.0	99
00352013	5 G 0.5	8.4	66.0	112
0035202	7 G 0.5	8.9	80.0	132
0035004	2 X 0.75	7.4	46.0	86
0035005	3 G 0.75	7.9	57.0	100
00350063	4 G 0.75	8.4	64.0	115
00350163	5 G 0.75	8.9	77.0	130
0035203	7 G 0.75	9.7	102.0	161
0035220	2 X 1.0	7.9	56.0	98
0035221	3 G 1.0	8.2	65.0	111
00352223	4 G 1.0	8.7	78.0	130
00352233	5 G 1.0	9.5	89.0	153
0035204	7 G 1.0	10.2	113.0	185
ÖLFLEX® CLASSIC 100 CY; U₀/U: 450/750 V				
0035000	2 X 1.5	9.9	65.0	132
0035458	3 G 1.5	10.3	79.0	170
00354593	4 G 1.5	11.3	97.0	204
00354603	5 G 1.5	12.6	116.0	246
0035461	7 G 1.5	13.9	149.0	320
0035011	3 G 2.5	11.8	146.0	211
00350173	4 G 2.5	13.5	167.0	310

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
00350123	5 G 2.5	14.6	200.0	326
0035289	7 G 2.5	15.9	288.0	444
00350183	4 G 4	15.1	237.0	403
00350133	5 G 4	16.5	328.0	478
00350193	4 G 6	16.6	318.0	521
00350143	5 G 6	18.2	441.0	624
0034953	3 G 10	18.9	414.0	690
00350213	4 G 10	21.1	558.0	843
00352903	5 G 10	23.1	714.0	1004
0034954	3 G 16	21.7	607.0	910
00350223	4 G 16	23.9	804.0	1164
00350153	5 G 16	26.8	1,050.0	1812
0034955	3 G 25	26.6	936.0	1330
00350233	4 G 25	29.4	1,289.0	1903
00350243	5 G 25	32.6	1,446.0	2374
0034956	3 G 35	29.4	1,258.0	1370
00350253	4 G 35	32.4	1,693.0	2489
00350263	5 G 35	36.0	1,975.0	2771
0034952	3 G 50	35.1	1,748.0	2590
00350273	4 G 50	38.8	2,342.0	3362
00350283	4 G 70	43.7	3,035.0	3719
00350293	4 G 95	50.4	4,055.0	5849
00354303	4 G 120	56.8	5,225.0	7509
00354313	4 G 150	62.2	6,300.0	7800
00354323	4 G 185	67.8	7,753.0	9866

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Single lengths for sizes: ≥ 4G50 max. 500 m; ≥ 4G95 max. 400 m; ≥ 4G120 max. 300 m; ≥ 4G150 max. 250 m
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO 9YSLCY-JB refer to page 92
- ÖLFLEX® SERVO 2YSLCY-JB refer to page 90

Accessories

- 3M Scotch™ 1183 screening tape refer to page 944
- SKINTOP® MS-M BRUSH refer to page 669

Various applications

PVC outer sheath and coloured cores

ÖLFLEX® CLASSIC 100 SY



Info

- With steel wire braiding

Benefits

- Extra mechanical protection due to braided steel wire

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Areas with high mechanical stress

Product features

- Flame-retardant according to IEC 60332-1-2
- Good chemical resistance
see Appendix T1

Approvals



Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8 / 1
- PVC inner sheath, grey
- Braid of galvanized steel wires
- PVC outer sheath, transparent

Technical data



Core identification code

Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: ÖLFLEX® colour code, refer to Appendix T7



Based on

IEC 60227-5
HD 21.5 S3; VDE 0281 Part 5
HD 21.13 S1; VDE 0281 Part 13



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

Fine wire according to VDE 0295, class 5/IEC 60228 class 5



Minimum bending radius

Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter



Nominal voltage

Up to 1.5 mm²: U₀/U: 300/500 V
From 2.5 mm²: U₀/U: 450/750 V
From 2.5 mm², in the case of fixed and protected installations: U₀/U: 600/1000 V



Test voltage

4000 V



Protective conductor

G = with GN-YE protective conductor
X = without protective conductor



Temperature range

Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 100 SY; U₀/U: 300/500 V				
0016022	2 X 0.75	8.2	14.4	97
0016023	3 G 0.75	8.5	21.6	108
00160243	4 G 0.75	9.2	28.8	126
00160253	5 G 0.75	9.7	36.0	146
0016027	7 G 0.75	10.3	50.0	172
0016031	12 G 0.75	12.9	86.0	260
0016042	2 X 1.0	8.5	19.2	137
0016043	3 G 1.0	8.8	29.0	154
00160443	4 G 1.0	9.5	38.4	180
00160453	5 G 1.0	10.1	48.0	202
0016047	7 G 1.0	11.0	67.0	242
0016057	25 G 1.0	18.1	240.0	653
0016064	2 X 1.5	9.3	29.0	172
0016065	3 G 1.5	9.7	43.0	191
00160663	4 G 1.5	10.2	58.0	217
00160673	5 G 1.5	11.1	72.0	268
0016069	7 G 1.5	11.9	101.0	311
0016072	12 G 1.5	15.4	173.0	499
0016075	18 G 1.5	17.6	259.0	652
0016077	25 G 1.5	20.3	360.0	913
0016078	32 G 1.5	22.1	461.0	1065

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 100 SY; U₀/U: 450/750 V				
0016087	2 X 2.5	12.1	48.0	245
0016088	3 G 2.5	12.6	72.0	278
00160893	4 G 2.5	13.9	96.0	339
00160903	5 G 2.5	15.2	120.0	397
0016092	7 G 2.5	16.3	168.0	470
0016101	2 X 4	13.6	76.8	329
00161023	4 G 4	15.7	154.0	457
00161033	5 G 4	17.1	192.0	545
0016106	3 G 6	15.8	173.0	544
00161073	4 G 6	17.2	230.0	687
00161083	5 G 6	18.8	288.0	798
00161103	4 G 10	21.3	384.0	1009
00161113	5 G 10	23.3	480.0	1197
00161133	4 G 16	24.1	614.0	1384
00161143	5 G 16	26.8	768.0	1740
00161163	4 G 25	29.4	960.0	2021
00161173	5 G 25	32.6	1,200.0	2464
00161183	4 G 35	32.4	1,344.0	2570
00161193	5 G 35	36.0	1,680.0	3185
00161203	4 G 50	38.8	1,920.0	3514

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Single lengths for sizes: ≥ 4G35 max. 500 m; ≥ 4G95 max. 400 m

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 110 SY refer to page 34

Accessories

- Cable shears KT 4 and KT 5 refer to page 904

ÖLFLEX® CLASSIC 100 BK POWER 0,6/1kV



Info

- Down to -30°C, also suitable for outdoor use
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396



Benefits

- High electrical performance due to 4 kV test voltage

Application range

- Plant engineering
- Industrial machinery
- Heating and air-conditioning systems
- Spray-painting lines
- Stage technology
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Suitable for outdoor applications
- Suitable for direct burial

Product features

- Flame-retardant according to IEC 60332-1-2
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396
- Flexible down to -30°C

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: PVC, cold-resistant
- PVC outer sheath, cold-resistant, black (RAL 9005)

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: ÖLFLEX® colour code, refer to Appendix T7
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 600/1000 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -30 °C to +70 °C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 100 BK POWER 0,6/1 kV				
1120456	2 X 1.0	8.6	19.2	98
1120457	3 G 1.0	9.0	29.0	112
1120458	4 G 1.0	9.6	38.0	131
1120459	5 G 1.0	10.4	48.0	152
1120462	2 X 1.5	9.6	29.0	123
1120463	3 G 1.5	10.1	43.0	144
1120464	4 G 1.5	10.8	58.0	170
1120465	5 G 1.5	11.7	72.0	199
1120468	2 X 2.5	10.8	48.0	147
1120469	3 G 2.5	11.3	72.0	182
1120470	4 G 2.5	12.2	96.0	225
1120471	5 G 2.5	13.3	120.0	266
1120474	4 G 4	13.8	154.0	324
1120475	4 G 6	15.1	230.0	442
1120476	4 G 10	18.7	384.0	707
1120477	4 G 16	21.3	614.0	1100
1120478	4 G 25	26.2	960.0	1600
1120479	4 G 35	29.1	1,344.0	2400
1120480	4 G 50	35.6	1,920.0	3400
1120481	4 G 70	40.7	2,688.0	5050
1120482	4 G 95	46.8	3,648.0	6010
1120483	4 G 120	53.5	4,608.0	7500

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Other sizes and screened types are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 130 H BK 0,6/1kV refer to page 59
- ÖLFLEX® CLASSIC 110 BLACK 0,6/1kV refer to page 35

Accessories

- FLEXIMARK® Stainless steel kit refer to page 872
- SKINTOP® MS-M refer to page 662



LAPP KABEL STUFGART OLFLEX® SERVO FD 796 CP

ÖLFLEX® CLASSIC 110



Info

- VDE certificate of conformity with factory surveillance



Benefits

- Space-saving installation due to small cable diameters
- High electrical performance due to 4 kV test voltage

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
Power stations
Stage applications
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Dry or damp rooms that are subject to medium mechanical loads

Product features

- Flame-retardant according to IEC 60332-1-2
- Good chemical resistance see Appendix T1

Approvals



- Remark: A RoHS-non-compliant version is marketed under ÖLFLEX® 110 with VDE-REG.-Nr. 8067. To order this, please add appendix <1> to the below stated part numbers. This does not affect the above given further technical data or description.

Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- Cores twisted in layers
- PVC outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C
- VDE-tested**
VDE reg. no. 7030 for the following sizes:
up to 2.5 mm²: 2 - 65 cores
from 4 mm²: 2 - 7 cores

Article number	Number of cores and mm ² per conductor	Standard lengths, metre							Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
		25	50	100	200	300	500	1000			
ÖLFLEX® CLASSIC 110											
1119752	2 X 0.5			100	200	300	500	1000	4.8	9.6	35
1119003	3 G 0.5			100	200	300	500	1000	5.1	14.4	42
1119753	3 X 0.5			100	200	300	500	1000	5.1	14.4	42
1119004	4 G 0.5			100	200	300	500	1000	5.7	19.2	54
1119754	4 X 0.5			100	200	300	500	1000	5.7	19.2	54
1119005	5 G 0.5			100	200	300	500	1000	6.2	24.0	63
1119755	5 X 0.5			100	200	300	500	1000	6.2	24.0	63
1119007	7 G 0.5		50	100	200	300	500	1000	6.7	33.6	81
1119757	7 X 0.5		50	100	200	300	500	1000	6.7	33.6	81
1119010	10 G 0.5		50	100	200	300	500	1000	8.6	48.0	116
1119012	12 G 0.5		50	100	200	300	500	1000	8.9	58.0	131
1119014	14 G 0.5		50	100			500	1000	9.5	67.0	153
1119018	18 G 0.5		50	100			500	1000	10.5	86.4	188
1119021	21 G 0.5		50	100			500	1000	11.7	101.0	221
1119025	25 G 0.5		50	100			500	1000	12.4	120.0	261
1119030	30 G 0.5		50	100			500	1000	13.3	144.0	304
1119035	35 G 0.5		50	100			500	1000	14.5	168.0	356
1119040	40 G 0.5		50	100			500	1000	15.4	192.0	400
1119052	52 G 0.5		50	100			500		17.3	250.0	517
1119061	61 G 0.5		50	100			500		18.5	293.0	603
1119065	65 G 0.5		50	100			500		19.6	312.0	644
1119080	80 G 0.5		50	100			500		21.1	384.0	780
1119100	100 G 0.5		50	100			500		23.6	480.0	975
1119802	2 X 0.75			100	200	300	500	1000	5.4	14.4	45
1119103	3 G 0.75			100	200	300	500	1000	5.7	21.6	55
1119803	3 X 0.75			100	200	300	500	1000	5.7	21.6	55
1119104	4 G 0.75			100	200	300	500	1000	6.2	28.8	66
1119804	4 X 0.75			100	200	300	500	1000	6.2	28.8	66
1119105	5 G 0.75		50	100	200	300	500	1000	6.7	36.0	79
1119805	5 X 0.75		50	100	200	300	500	1000	6.7	36.0	79
1119107	7 G 0.75		50	100	200	300	500	1000	7.3	50.0	101
1119807	7 X 0.75		50	100	200	300	500	1000	7.3	50.0	101
1119109	9 G 0.75		50	100	200	300	500	1000	9.4	65.0	137
1119110	10 G 0.75		50	100	200	300	500	1000	9.6	72.0	150
1119112	12 G 0.75		50	100	200	300	500	1000	9.9	86.0	171
1119812	12 X 0.75		50	100	200	300	500	1000	9.9	86.0	171
1119115	15 G 0.75		50	100			500	1000	10.9	108.0	209
1119117	15 X 0.75		50	100			500	1000	10.9	108.0	209
1119116	16 G 0.75		50	100			500	1000	11.1	115.2	220
1119118	18 G 0.75		50	100			500	1000	11.7	130.0	244
1119121	21 G 0.75		50	100			500	1000	13.0	151.0	286
1119125	25 G 0.75		50	100			500	1000	13.8	180.0	337
1119126	26 G 0.75		50	100			500	1000	14.2	187.2	350
1119134	34 G 0.75		50	100			500	1000	15.9	245.0	448
1119141	41 G 0.75		50	100			500	1000	17.4	296.0	538
1119150	50 G 0.75		50	100			500		19.2	360.0	648
1119151	51 G 0.75		50	100			500		19.2	367.0	646
1119161	61 G 0.75		50	100			500		20.5	439.0	779
1119165	65 G 0.75		50	100			500		21.8	468.0	832
1119180	80 G 0.75		50	100			500		23.6	576.0	1019

Various applications

PVC outer sheath and numbered cores

Table with columns: Article number, Number of cores and mm² per conductor, Standard lengths (25, 50, 100, 200, 300, 500, 1000), Outer diameter (mm), Copper index (kg/km), Weight (kg/km). Rows include series like ÖLFLEX, UNITRONIC, ETHERLINE, HITRONIC, EPIC, SKINTOP, SILVYN, FLEXIMARK.

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum. Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils). Photographs are not to scale and do not represent detailed images of the respective products.

■ Similar products

- ÖLFLEX® 191 refer to page 45

■ Accessories

- SKINTOP® CLICK refer to page 654

ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

SILVYN®

FLEXIMARK®

ACCESSORIES

APPENDIX

ÖLFLEX® CLASSIC 110 COLD



Info

- VDE certificate of conformity with factory surveillance
- UV and weather-resistant according to ISO 4892-2
- Torsion-tested for wind turbines

Benefits

- Space-saving installation due to small cable diameters
- High electrical performance due to 4 kV test voltage

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Freezing plants, cold storage
- Suitable for outdoor applications
- Drip-loop installation in wind turbines

Product features

- Flame-retardant according to IEC 60332-1-2
- Flexible down to -30°C
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396
- Torsion-tested for wind turbines

LAPP KABEL STUÏGART ÖLFLEX® CLASSIC 110 COLD VDE Reg. Nr. 8274 CE

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: PVC, cold-resistant
- PVC outer sheath, cold-resistant, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -30 °C to +70 °C
Fixed installation: -40°C to +80°C
- VDE-tested**
VDE reg. no. 8274

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 COLD				
1119660	2 X 0.75	5.4	14.4	45
1119661	3 X 0.75	5.7	21.6	55
1119662	3 G 0.75	5.7	21.6	55
1119663	4 X 0.75	6.2	28.8	66
1119664	4 G 0.75	6.2	28.8	66
1119665	5 X 0.75	6.7	36.0	79
1119666	5 G 0.75	6.7	36.0	79
1119667	7 X 0.75	7.3	50.0	101
1119668	7 G 0.75	7.3	50.0	101
1119669	12 G 0.75	9.9	86.0	171
1119670	18 G 0.75	11.7	130.0	244
1119671	25 G 0.75	13.8	180.0	337
1119672	2 X 1.0	5.7	19.2	53
1119673	3 X 1.0	6.0	28.8	65
1119674	3 G 1.0	6.0	28.8	65
1119675	4 X 1.0	6.5	38.4	79
1119676	4 G 1.0	6.5	38.4	79
1119677	5 X 1.0	7.1	48.0	94
1119678	5 G 1.0	7.1	48.0	94
1119679	7 X 1.0	8.0	67.0	126
1119680	7 G 1.0	8.0	67.0	126
1119681	12 G 1.0	10.5	115.0	205
1119682	18 G 1.0	12.7	173.0	300
1119683	25 G 1.0	14.7	240.0	408
1119684	2 X 1.5	6.3	29.0	68
1119685	3 X 1.5	6.7	43.0	84
1119686	3 G 1.5	6.7	43.0	84
1119687	4 X 1.5	7.2	58.0	104
1119688	4 G 1.5	7.2	58.0	104
1119689	5 X 1.5	8.1	72.0	128
1119690	5 G 1.5	8.1	72.0	128
1119691	7 X 1.5	8.9	101.0	166
1119692	7 G 1.5	8.9	101.0	166
1119693	12 G 1.5	12.0	173.0	279
1119694	18 G 1.5	14.4	259.0	407
1119695	25 G 1.5	16.9	360.0	560
1119696	2 X 2.5	7.5	48.0	101
1119698	3 G 2.5	8.1	72.0	132
1119700	4 G 2.5	8.9	96.0	163
1119702	5 G 2.5	10.0	120.0	200
1119704	7 G 2.5	11.1	168.0	267
1119710	4 G 4	10.8	154.0	249
1119711	5 G 4	12.1	192.0	305
1119715	4 G 6	13.0	230.0	365
1119716	5 G 6	14.5	288.0	447

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 110 H refer to page 53
- ÖLFLEX® ROBUST 210 refer to page 63

Accessories

- FLEXIMARK® Stainless steel kit refer to page 872
- SKINTOP® MS-M refer to page 662

Various applications

PVC outer sheath and numbered cores

ÖLFLEX® CLASSIC 110 ORANGE



Info

- For warning purposes and for exempted circuits according to EN 60204-1, e.g. circuits for maintenance or interlocking circuits

Benefits

- Space-saving installation due to small cable diameters
- High electrical performance due to 4 kV test voltage

Application range

- According to EN 60204-1 (VDE 0113-1), conductors of control circuits that are supplied by an external power source and/or remain live when the main switch is deactivated must be orange
- Electrical lighting and socket circuits for maintenance or repair purposes
- Undervoltage protection circuits
- Interlocking control circuits

Product features

- Flame-retardant according to IEC 60332-1-2

Approvals



Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- Orange cores with black numbers
- PVC outer sheath, orange (RAL 2003)

Technical data

- Core identification code**
Orange cores with black numbers
- Based on**
IEC 60227-5
HD 21.5 S3; VDE 0281 Part 5
HD 21.13 S1; VDE 0281 Part 13
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 ORANGE				
0019700	2 X 1.0	5.7	19.2	53
0019701	3 G 1.0	6.0	28.8	65
0019702	3 X 1.0	6.0	28.8	65
0019706	4 G 1.0	6.5	38.4	80
0019708	4 X 1.0	6.5	38.4	80
0019709	5 G 1.0	7.1	50.0	95
0019710	2 X 1.5	6.3	29.0	68
0019711	3 G 1.5	6.7	43.0	85
0019718	4 G 1.5	7.2	58.0	105
0019720	5 G 1.5	8.1	72.0	128

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- H07V-K refer to page 198
- Orange-coloured single cores

Accessories

- SKINTOP® CLICK refer to page 654

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

ÖLFLEX® CLASSIC 110 CY



Info

- EMC-compliant
- VDE reg. no. 7030

Benefits

- Space-saving installation due to small cable diameters
- High electrical performance due to 4 kV test voltage

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Conveyor and transport systems
- In EMC-sensitive environments
(electromagnetic compatibility)

Product features

- Flame-retardant according to IEC 60332-1-2
- Good chemical resistance
see Appendix T1
- High degree of screening
low transfer impedance
(max. 250 Ω/km at 30 MHz)



Approvals



- Remark: A RoHS-non-compliant version is marketed under ÖLFLEX® 110 CY with VDE-REG.-Nr. 8067. To order this, please add appendix <1> to the below stated part numbers. This does not affect the above given further technical data or description.

Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- PVC inner sheath, grey
- Tinned-copper braiding
- PVC outer sheath, transparent

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C
- VDE-tested**
VDE reg. no. 7030 for sizes up to and including 65 cores

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 CY				
1135752	2 X 0.5	7.0	41.0	75
1135003	3 G 0.5	7.3	45.5	83
1135753	3 X 0.5	7.3	45.5	83
1135004	4 G 0.5	7.9	55.0	99
1135754	4 X 0.5	7.9	55.0	99
1135005	5 G 0.5	8.4	66.0	112
1135755	5 X 0.5	8.4	66.0	112
1135007	7 G 0.5	8.9	80.5	132
1135757	7 X 0.5	8.9	80.5	132
1135012	12 G 0.5	11.3	138.5	202
1135762	12 X 0.5	11.3	138.5	202
1135018	18 G 0.5	13.3	156.4	289
1135025	25 G 0.5	15.2	250.0	378
1135030	30 G 0.5	16.1	297.0	429
1135040	40 G 0.5	18.2	343.0	542
1135802	2 X 0.75	7.4	46.0	86
1135103	3 G 0.75	7.9	57.9	100
1135803	3 X 0.75	7.9	57.9	100
1135104	4 G 0.75	8.4	64.0	115
1135804	4 X 0.75	8.4	64.0	115
1135105	5 G 0.75	8.9	77.4	130
1135805	5 X 0.75	8.9	77.4	130
1135107	7 G 0.75	9.7	102.0	161
1135807	7 X 0.75	9.7	102.0	161
1135112	12 G 0.75	12.3	177.0	247
1135812	12 X 0.75	12.3	177.0	247
1135118	18 G 0.75	14.5	243.0	356
1135818	18 X 0.75	14.5	243.0	356
1135125	25 G 0.75	16.6	307.3	465
1135134	34 G 0.75	18.9	323.2	601
1135840	40 X 0.75	20.5	369.4	734
1135141	41 G 0.75	20.6	488.0	728
1135852	2 X 1.0	7.9	56.0	98
1135203	3 G 1.0	8.2	65.3	111
1135853	3 X 1.0	8.2	65.3	111
1135204	4 G 1.0	8.7	78.1	130
1135854	4 X 1.0	8.7	78.1	130
1135205	5 G 1.0	9.5	89.4	153
1135207	7 G 1.0	10.2	113.3	185
1135212	12 G 1.0	13.3	188.1	307
1135216	16 G 1.0	14.6	216.0	390
1135218	18 G 1.0	15.5	286.0	418
1135225	25 G 1.0	17.5	388.5	544

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1135234	34 G 1.0	20.3	505.0	738
1135241	41 G 1.0	22.0	578.0	864
1135250	50 G 1.0	23.8	688.0	1011
1135902	2 X 1.5	8.5	65.0	117
1135303	3 G 1.5	8.9	83.0	136
1135903	3 X 1.5	8.9	83.0	136
1135304	4 G 1.5	9.6	100.0	163
1135904	4 X 1.5	9.6	100.0	163
1135305	5 G 1.5	10.3	125.0	188
1135905	5 X 1.5	10.3	125.0	188
1135307	7 G 1.5	11.3	149.0	237
1135907	7 X 1.5	11.3	149.0	237
1135312	12 G 1.5	14.8	280.0	393
1135318	18 G 1.5	17.2	389.0	538
1135325	25 G 1.5	20.1	535.0	745
1135334	34 G 1.5	22.8	702.0	964
1135341	41 G 1.5	24.7	844.6	1123
1135350	50 G 1.5	27.1	1,006.0	1372
1135402	2 X 2.5	9.9	112.0	165
1135403	3 G 2.5	10.3	146.0	192
1135404	4 G 2.5	11.3	167.0	233
1135405	5 G 2.5	12.6	200.0	283
1135407	7 G 2.5	13.9	288.0	371
1135412	12 G 2.5	17.6	477.3	585
1135502	2 X 4	11.4	120.0	247
1135504	4 G 4	13.4	237.0	347
1135505	5 G 4	14.7	280.0	413
1135602	2 X 6	13.6	180.0	353
1135604	4 G 6	15.8	318.0	485
1135605	5 G 6	17.3	441.0	702
1135607	7 G 6	18.8	530.0	950
1135702	2 X 10	16.4	256.0	492
1135615	3 G 10	17.4	362.4	507
1135614	4 G 10	19.0	558.0	735
1135616	5 G 10	21.2	595.0	847
1135617	7 G 10	23.2	796.0	1039
1135622	2 X 16	18.6	390.0	698
1135624	4 G 16	22.2	804.0	1395
1135623	5 G 16	26.7	935.0	1440
1135626	4 G 25	28.7	1,161.0	1730
1135627	5 G 25	31.6	1,400.0	2090
1135625	4 G 35	32.0	1,543.0	2210
1135628	5 G 35	35.5	1,901.0	2710

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 110 CY BLACK 0,6/1 kV refer to page 36

Accessories

- SKINTOP® MS-M BRUSH refer to page 669

Various applications

PVC outer sheath and numbered cores

ÖLFLEX® CLASSIC 110 SY



Info

- With steel wire braiding
- VDE reg. no. 7030

Benefits

- Extra mechanical protection due to braided steel wire
- High electrical performance due to 4 kV test voltage

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Areas with high mechanical stress
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load

Product features

- Flame-retardant according to IEC 60332-1-2
- Good chemical resistance see Appendix T1

Approvals



Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- PVC inner sheath, grey
- Braid of galvanized steel wires
- PVC outer sheath, transparent

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5 °C to +70 °C
Fixed installation: -40 °C to +80 °C
- VDE-tested**
VDE reg. no. 7030 for sizes up to and including 65 cores

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 SY				
1125752	2 X 0.5	7.8	10.0	87
1125003	3 G 0.5	8.1	15.0	95
1125004	4 G 0.5	8.5	19.2	107
1125005	5 G 0.5	9.2	24.0	123
1125007	7 G 0.5	9.7	33.6	147
1125010	10 G 0.5	11.6	48.0	196
1125012	12 G 0.5	11.9	58.0	213
1125014	14 G 0.5	12.5	67.0	237
1125018	18 G 0.5	13.9	86.4	291
1125021	21 G 0.5	14.9	101.0	332
1125025	25 G 0.5	15.6	120.0	375
1125030	30 G 0.5	16.5	144.0	422
1125040	40 G 0.5	18.8	192.0	545
1125061	61 G 0.5	21.9	293.0	773
1125802	2 X 0.75	8.2	14.4	97
1125103	3 G 0.75	8.5	21.6	108
1125104	4 G 0.75	9.2	28.8	126
1125105	5 G 0.75	9.7	36.0	146
1125107	7 G 0.75	10.3	50.0	172
1125109	9 G 0.75	12.4	65.0	224
1125112	12 G 0.75	12.9	86.0	260
1125115	15 G 0.75	14.1	108.0	315
1125118	18 G 0.75	14.9	130.0	355
1125125	25 G 0.75	17.0	180.0	465
1125134	34 G 0.75	19.3	245.0	596
1125150	50 G 0.75	22.8	360.0	832
1125852	2 X 1.0	8.5	19.2	106
1125203	3 G 1.0	8.8	28.8	119
1125204	4 G 1.0	9.5	38.4	141
1125205	5 G 1.0	10.1	48.0	164
1125207	7 G 1.0	11.0	67.0	200
1125208	8 G 1.0	12.5	77.0	234
1125209	9 G 1.0	13.2	86.0	260
1125212	12 G 1.0	13.9	115.0	309
1125214	14 G 1.0	14.4	134.0	345
1125218	18 G 1.0	15.9	173.0	415
1125220	20 G 1.0	16.8	192.0	455
1125225	25 G 1.0	18.1	240.0	548

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1125234	34 G 1.0	20.5	326.0	714
1125241	41 G 1.0	22.2	394.0	832
1125250	50 G 1.0	24.2	480.0	987
1125265	65 G 1.0	27.2	624.0	1250
1125902	2 X 1.5	9.3	29.0	128
1125303	3 G 1.5	9.7	43.0	151
1125304	4 G 1.5	10.2	58.0	173
1125305	5 G 1.5	11.1	72.0	202
1125307	7 G 1.5	11.9	101.0	248
1125308	8 G 1.5	14.0	115.0	301
1125312	12 G 1.5	15.4	173.0	396
1125314	14 G 1.5	15.9	202.0	438
1125318	18 G 1.5	17.6	259.0	538
1125325	25 G 1.5	20.3	360.0	713
1125332	32 G 1.5	22.1	461.0	876
1125341	41 G 1.5	24.9	591.0	1101
1125350	50 G 1.5	27.1	720.0	1305
1125403	3 G 2.5	11.1	72.0	206
1125404	4 G 2.5	12.1	96.0	249
1125405	5 G 2.5	13.2	120.0	295
1125407	7 G 2.5	14.3	168.0	373
1125412	12 G 2.5	18.2	288.0	586
1125418	18 G 2.5	21.4	432.0	823
1125425	25 G 2.5	24.4	600.0	1093
1125503	3 G 4	12.7	115.0	285
1125504	4 G 4	14.0	154.0	348
1125505	5 G 4	15.1	192.0	410
1125507	7 G 4	16.4	269.0	519
1125604	4 G 6	16.2	230.0	482
1125605	5 G 6	17.7	288.0	579
1125607	7 G 6	19.2	403.0	740
1125614	4 G 10	19.4	384.0	731
1125615	5 G 10	21.5	480.0	889
1125617	7 G 10	23.4	672.0	1146
1125624	4 G 16	22.4	614.0	1384
1125625	5 G 16	24.6	768.0	1740
1125626	4 G 25	28.9	960.0	1680
1125630	5 G 25	31.8	1,200.0	2050
1125629	4 G 35	32.2	1,344.0	2170

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 100 SY refer to page 26

Accessories

- SKINTOP® MS-M refer to page 662

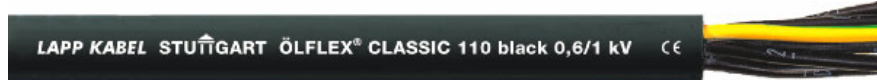
ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® CLASSIC 110 BLACK 0,6/1kV



Info

- Suitable for outdoor applications
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396



Benefits

- High electrical performance due to 4 kV test voltage

Application range

- Plant engineering
- Industrial machinery
- Heating and air-conditioning systems
- Power stations
- Stage applications
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Outdoor use is possible within the indicated operating temperature range
- Suitable for direct burial

Product features

- Flame-retardant according to IEC 60332-1-2
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396

Approvals



Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- PVC outer sheath, black (RAL 9005)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
VDE 0250-1 and HD 627 S1
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 600/1000 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 BLACK				
1120232	2 X 0.75	8.3	14.4	81
1120233	3 G 0.75	8.7	21.6	93
1120234	3 X 0.75	8.7	21.6	93
1120235	4 G 0.75	9.2	29.0	108
1120237	5 G 0.75	9.9	36.0	126
1120241	7 G 0.75	10.7	51.0	162
1120248	12 G 0.75	13.4	86.0	236
1120251	18 G 0.75	15.4	130.0	334
1120259	41 G 0.75	21.6	296.0	713
1120266	2 X 1.0	8.6	19.2	98
1120267	3 G 1.0	9.0	29.0	112
1120268	3 X 1.0	9.0	29.0	112
1120269	4 G 1.0	9.6	38.4	131
1120270	4 X 1.0	9.6	38.4	131
1120271	5 G 1.0	10.4	48.0	152
1120274	7 G 1.0	11.1	67.0	196
1120280	12 G 1.0	14.0	116.0	286
1120284	18 G 1.0	16.1	173.0	419
1120290	25 G 1.0	18.6	240.0	572
1120294	34 G 1.0	21.3	326.0	764
1120298	41 G 1.0	23.2	394.0	891
1120306	2 X 1.5	9.6	29.0	123
1120307	3 G 1.5	10.1	43.0	144
1120308	3 X 1.5	10.1	43.0	144
1120309	4 G 1.5	10.8	58.0	170
1120311	5 G 1.5	11.7	72.0	199
1120314	7 G 1.5	12.6	101.0	261
1120320	12 G 1.5	16.1	173.0	399
1120322	14 G 1.5	17.0	202.0	448
1120324	18 G 1.5	18.8	259.0	547

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1120328	25 G 1.5	21.7	360.0	770
1120330	34 G 1.5	24.9	490.0	996
1120333	50 G 1.5	29.8	720.0	1427
1120339	2 X 2.5	10.8	48.0	147
1120340	3 G 2.5	11.3	72.0	182
1120342	4 G 2.5	12.2	96.0	225
1120343	4 X 2.5	12.2	96.0	225
1120344	5 G 2.5	13.3	120.0	266
1120346	7 G 2.5	14.4	168.0	354
1120349	12 G 2.5	18.7	288.0	540
1120350	14 G 2.5	19.8	336.0	542
1120351	18 G 2.5	22.0	432.0	788
1120353	25 G 2.5	25.8	600.0	1094
1120360	4 G 4	13.8	154.0	324
1120361	5 G 4	15.1	192.0	385
1120362	7 G 4	16.4	269.0	513
1120366	4 G 6	15.1	230.0	442
1120367	5 G 6	16.8	288.0	526
1120368	7 G 6	18.2	403.0	705
1120370	4 G 10	18.7	384.0	707
1120371	5 G 10	20.7	480.0	881
1120374	4 G 16	21.3	614.0	1100
1120375	5 G 16	23.6	768.0	1600
1120376	7 G 16	26.2	1,075.0	1890
1120378	4 G 25	26.2	960.0	1600
1120379	5 G 25	29.0	1,200.0	2050
1120382	4 G 35	29.1	1,344.0	2400
1120383	5 G 35	32.5	1,680.0	2900
1120385	4 G 50	35.6	1,920.0	3400
1120387	4 G 70	40.7	2,688.0	5050
1120389	4 G 95	46.8	3,648.0	6010
1120390	4 G 120	53.5	4,608.0	7500

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 100 BK POWER 0,6/1kV refer to page 27
- ÖLFLEX® CLASSIC 130 H BK 0,6/1kV refer to page 59

Accessories

- SKINTOP® MS-M refer to page 662
- Cable shears KT 4 and KT 5 refer to page 904

Various applications

PVC outer sheath and numbered cores

ÖLFLEX® CLASSIC 110 CY BLACK 0,6/1 kV

LAPP KABEL STUTTGART ÖLFLEX CLASSIC 110CY Black 0,6/1kV CE



Info

- Suitable for outdoor applications
- UV and weather-resistant according to ISO 4892-2
- EMC-compliant

Benefits

- High electrical performance due to 4 kV test voltage

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
Power stations
- For frequency converter powered 3 phases AC motors
- In EMC-sensitive environments (electromagnetic compatibility)
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Outdoor use is possible within the indicated operating temperature range
- Suitable for direct burial

Product features

- Flame-retardant according to IEC 60332-1-2
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396
- High degree of screening
low transfer impedance
(max. 250 Ω/km at 30 MHz)

Approvals



Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- PVC inner sheath, black
- Tinned-copper braiding
- PVC outer sheath, black (RAL 9005)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
VDE 0250-1 and HD 627 S1
- Specific insulation resistance**
> 20 GΩm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 600/1000 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5 °C to +70 °C
Fixed installation: -40 °C to +80 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 CY BLACK				
1121232	2 X 0.75	10.5	46.0	183
1121233	3 G 0.75	10.9	56.0	210
1121235	4 G 0.75	11.4	67.0	238
1121236	4 X 0.75	11.4	67.0	238
1121237	5 G 0.75	12.1	78.0	272
1121241	7 G 0.75	12.9	97.0	315
1121247	12 G 0.75	15.8	168.0	464
1121251	18 G 0.75	18.0	229.0	616
1121254	25 G 0.75	20.7	296.0	762
1121266	2 X 1.0	10.8	52.0	198
1121267	3 G 1.0	11.2	66.0	228
1121268	3 X 1.0	11.2	66.0	228
1121269	4 G 1.0	11.8	79.0	261
1121270	4 X 1.0	11.8	79.0	261
1121271	5 G 1.0	12.6	93.0	300
1121274	7 G 1.0	13.3	117.0	335
1121280	12 G 1.0	16.4	204.0	522
1121284	18 G 1.0	18.7	280.0	687
1121290	25 G 1.0	21.6	369.0	884
1121306	2 X 1.5	11.8	69.0	243
1121307	3 G 1.5	12.3	87.0	273
1121308	3 X 1.5	12.3	87.0	273
1121309	4 G 1.5	13.0	102.0	290
1121310	4 X 1.5	13.0	102.0	290
1121311	5 G 1.5	13.9	125.0	352

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1121314	7 G 1.5	15.0	180.0	448
1121320	12 G 1.5	18.7	281.0	690
1121324	18 G 1.5	21.8	391.0	938
1121328	25 G 1.5	25.1	518.0	1180
1121340	3 G 2.5	13.5	123.0	354
1121342	4 G 2.5	14.6	168.0	413
1121344	5 G 2.5	15.7	204.0	515
1121346	7 G 2.5	17.0	265.0	619
1121349	12 G 2.5	21.7	421.0	936
1121360	4 G 4	16.2	238.0	587
1121361	5 G 4	17.7	302.0	689
1121362	7 G 4	19.0	396.0	828
1121367	4 G 6	17.7	318.0	715
1121368	5 G 6	19.2	419.0	862
1121369	7 G 6	21.2	559.0	1105
1121372	4 G 10	21.7	574.0	875
1121373	5 G 10	23.0	612.0	1037
1121377	4 G 16	24.3	809.0	1198
1121378	5 G 16	26.7	935.0	1500
1121381	4 G 25	29.8	1,165.0	1814
1121382	5 G 25	31.6	1,400.0	2164
1121385	4 G 35	32.7	1,683.0	2893
1121388	4 G 50	39.6	2,368.0	4094
1121391	4 G 70	44.5	3,261.0	5467
1121394	4 G 95	51.0	4,055.0	5849
1121397	4 G 120	58.1	5,225.0	7509

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 135 CH BK 0,6/1kV refer to page 60

Accessories

- SKINTOP® MS-M BRUSH refer to page 669



Various applications

PVC outer sheath and numbered cores

ÖLFLEX® CLASSIC 115 CY



Info

- EMC-compliant
- Thin and light, without inner sheath

Benefits

- Space-saving installation due to small cable diameters

Application range

- Measurement and control technology
- Office machines and systems for data processing

Product features

- Flame-retardant according to IEC 60332.1.2
- Good chemical resistance see Appendix T1

Approvals



Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- Plastic foil wrapping
- Tinned-copper braiding
- PVC outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
HD 21.13 S1; VDE 0281 Part 13
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
Core/core: 4000 V
Core/screen: 2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 115 CY				
1136752	2 X 0.5	5.8	36.0	45
1136003	3 G 0.5	6.1	43.0	59
1136753	3 X 0.5	6.1	43.0	59
1136004	4 G 0.5	6.5	49.0	71
1136754	4 X 0.5	6.5	49.0	71
1136005	5 G 0.5	7.0	57.0	86
1136755	5 X 0.5	7.0	57.0	86
1136007	7 G 0.5	7.5	69.0	105
1136757	7 X 0.5	7.5	69.0	105
1136012	12 G 0.5	9.9	104.0	200
1136762	12 X 0.5	9.9	104.0	200
1136018	18 G 0.5	11.5	141.0	275
1136768	18 X 0.5	11.5	141.0	275
1136025	25 G 0.5	13.4	211.0	350
1136775	25 X 0.5	13.4	211.0	350
1136802	2 X 0.75	6.2	43.0	56
1136103	3 G 0.75	6.5	52.0	70
1136803	3 X 0.75	6.5	52.0	70
1136104	4 G 0.75	7.0	61.0	95
1136804	4 X 0.75	7.0	61.0	95
1136105	5 G 0.75	7.7	72.0	108
1136805	5 X 0.75	7.7	72.0	108
1136107	7 G 0.75	8.3	89.0	127
1136807	7 X 0.75	8.3	89.0	127
1136112	12 G 0.75	10.9	138.0	232
1136118	18 G 0.75	12.7	211.0	315
1136125	25 G 0.75	14.8	280.0	435
1136825	25 X 0.75	14.8	280.0	435
1136852	2 X 1.0	6.5	51.0	71
1136203	3 G 1.0	6.8	62.0	86
1136853	3 X 1.0	6.8	62.0	86
1136204	4 G 1.0	7.3	74.0	98
1136854	4 X 1.0	7.3	74.0	98
1136205	5 G 1.0	8.1	88.0	121
1136855	5 X 1.0	8.1	88.0	121

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1136207	7 G 1.0	8.8	112.0	147
1136857	7 X 1.0	8.8	112.0	147
1136212	12 G 1.0	11.5	185.0	285
1136218	18 G 1.0	13.9	268.0	395
1136225	25 G 1.0	15.9	354.0	486
1136902	2 X 1.5	7.1	65.0	86
1136303	3 G 1.5	7.5	82.0	112
1136903	3 X 1.5	7.5	82.0	112
1136304	4 G 1.5	8.2	100.0	135
1136904	4 X 1.5	8.2	100.0	135
1136305	5 G 1.5	8.9	119.0	148
1136905	5 X 1.5	8.9	119.0	148
1136307	7 G 1.5	9.9	154.0	192
1136907	7 X 1.5	9.9	154.0	192
1136312	12 G 1.5	13.0	268.0	365
1136318	18 G 1.5	15.6	373.0	520
1136325	25 G 1.5	17.9	530.0	734
1136334	34 G 1.5	20.8	683.0	944
1136403	3 G 2.5	8.9	118.0	151
1136404	4 G 2.5	9.9	147.0	188
1136405	5 G 2.5	11.0	176.0	270
1136407	7 G 2.5	11.9	253.0	340
1136412	12 G 2.5	16.0	355.0	540
1136418	18 G 2.5	19.0	569.0	782
1136425	25 G 2.5	22.2	827.0	1358
1136504	4 G 4	11.6	248.0	305
1136507	7 G 4	14.4	355.0	500
1136604	4 G 6	14.2	343.0	440
1136607	7 G 6	17.0	505.0	672
1136614	4 G 10	17.2	535.0	680
1136615	5 G 10	19.5	592.0	824
1136624	4 G 16	20.2	800.0	1050
1136625	5 G 16	22.6	895.0	1285
1136634	4 G 25	25.1	1,075.0	1413
1136635	5 G 25	28.0	1,400.0	1976
1136638	4 G 35	28.0	1,576.0	2070

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBUST 215 C refer to page 64
- ÖLFLEX® CLASSIC 110 CY refer to page 33

Accessories

- 3M Scotch™ 1183 screening tape refer to page 944
- SKINTOP® MS-M BRUSH refer to page 669

ÖLFLEX® EB

According to DIN EN 60079-14; VDE 0165 part 1



Info

- For use in voltage range: < 50 V AC / < 75 V DC where acc. to Directive 2006/95/EC and 73/23/EEC the CE mark is not mandatory!

Benefits

- Space-saving installation due to small cable diameters

Application range

- Installation of intrinsically safe circuits, where a special cable marking for hazard area type "I"- intrinsic safety is specified

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



- Electrical characteristics and markings on the wires and cables are according to DIN EN 60079-14 Section 12.2.2 (VDE 0165 Part 1)

Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- PVC outer sheath, sky blue RAL 5015

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Mutual capacitance**
Core/core approx. 110 nF/km
- Based on**
HD 21.13 S1; VDE 0281 Part 13
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
< 50 V AC
< 75 V DC
see Info
- Test voltage**
Core/core: 3000 V
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® EB without protective conductor GN/YE				
0012420	2 X 0.75	5.4	14.7	50
0012421	3 X 0.75	5.7	22.1	60
0012430	4 X 0.75	6.2	29.4	81
0012422	5 X 0.75	6.7	36.8	88
0012423	7 X 0.75	7.3	51.5	115
0012425	12 X 0.75	9.9	88.2	185
0012427	18 X 0.75	11.7	132.3	282
0012429	25 X 0.75	13.8	183.8	393
0012440	2 X 1.0	5.7	19.7	57
0012441	3 X 1.0	6.0	29.6	73
0012443	5 X 1.0	7.1	49.4	105
0012444	7 X 1.0	8.0	69.1	138
0012446	12 X 1.0	10.5	118.4	231
0012448	18 X 1.0	12.7	177.7	331
0012401	2 X 1.5	6.3	29.0	80
0012402	3 X 1.5	6.7	43.0	105
0012403	4 X 1.5	7.2	58.0	125
0012404	5 X 1.5	8.1	72.0	139
ÖLFLEX® EB with protective conductor GN/YE				
0012501	3 G 1.5	6.7	43.0	105
0012502	4 G 1.5	7.2	58.0	125
0012503	5 G 1.5	8.1	72.0	139
0012504	7 G 1.5	8.9	101.0	180
0012505	12 G 1.5	12.0	173.0	339
0012506	18 G 1.5	14.4	259.0	513
0012507	25 G 1.5	16.9	360.0	698

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® EB CY (TP) refer to page 278
- UNITRONIC® EB JE-LiYCY...BD refer to page 279
- UNITRONIC® EB JE-Y(ST)Y 0,8 BD refer to page 280

Accessories

- FLEXIMARK® Stainless steel kit refer to page 872
- SKINTOP® K-M ATEX plus blue refer to page 661

ÖLFLEX® EB CY

According to DIN EN 60079-14; VDE 0165 part 1

LAPP KABEL STÜTTGART ÖLFLEX® EB CY



Info

- For use in voltage range: < 50 V AC / < 75 V DC where acc. to Directive 2006/95/EC and 73/23/EEC the CE mark is not mandatory!
- EMC-compliant

Benefits

- Space-saving installation due to small cable diameters
- Copper wire braid screening of the ÖLFLEX® EB CY protects signal transmission within intrinsically safe circuits against electromagnetic interference

Application range

- Installation of intrinsically safe circuits, where a special cable marking for hazard area type "i"- intrinsic safety is specified
- In EMC-sensitive environments (electromagnetic compatibility)

Product features

- Flame-retardant according to IEC 60332.1.2
- High degree of screening low transfer impedance (max. 250 Ω/km at 30 MHz)

Approvals



- Electrical characteristics and markings on the wires and cables are according to DIN EN 60079-14 Section 12.2.2 (VDE 0165 Part 1)

Design

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8 / 1
- Plastic foil wrapping
- Tinned-copper braiding
- PVC outer sheath, sky blue RAL 5015

Technical data



Core identification code
Black with white numbers acc. to VDE 0293



Mutual capacitance
Core/core approx. 135 nF/km
Core/screen approx. 185 nF/km



Based on
HD 21.13 S1; VDE 0281 Part 13



Specific insulation resistance
> 20 GΩm x cm



Inductivity
approx. 0.65 mH/km



Conductor stranding
Fine wire according to VDE 0295, class 5/IEC 60228 class 5



Minimum bending radius
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter



Nominal voltage
< 50 V AC
< 75 V DC
see Info



Test voltage
Core/core: 3000 V
Core/screen: 2000 V



Temperature range
Occasional flexing: -5 °C to +70 °C
Fixed installation: -40 °C to +80 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® EB CY screened; without inner sheath				
0012640	2 X 0.75	6.2	43.0	56
0012641	3 X 0.75	6.5	52.0	70
0012642	4 X 0.75	7.0	61.0	95
0012643	5 X 0.75	7.7	72.0	108
0012644	7 X 0.75	8.3	89.0	168
0012645	12 X 0.75	10.9	138.0	216
0012646	18 X 0.75	12.7	211.0	315
0012647	25 X 0.75	14.8	280.0	435
0012650	2 X 1.0	6.5	51.0	84
0012651	3 X 1.0	6.8	62.0	110
0012652	5 X 1.0	8.1	88.0	156
0012653	7 X 1.0	8.8	112.0	192
0012654	12 X 1.0	11.5	185.0	285
0012655	18 X 1.0	13.9	268.0	395
0012656	25 X 1.0	15.9	354.0	656
0012660	2 X 1.5	7.1	65.0	87
0012661	3 X 1.5	7.5	82.0	112
0012662	5 X 1.5	8.9	119.0	148
0012663	7 X 1.5	9.9	154.0	193
0012664	12 X 1.5	13.0	268.0	365
0012666	25 X 1.5	17.9	530.0	734

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® EB CY (TP) refer to page 278
- UNITRONIC® EB JE-LiYCY...BD refer to page 279
- UNITRONIC® EB JE-Y(ST)Y 0,8 BD refer to page 280

Accessories

- 3M Scotch™ 1183 screening tape refer to page 944
- SKINTOP® K-M ATEX plus blue refer to page 661

ÖLFLEX® 140
H05VV5-F (HD 21.13 S1)



Info

- Oil-resistant according to HD21.1: TM5



Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Machine tools
- Mainly used in dry, damp and wet interiors (including water-oil mixtures), but not for outdoor use
- For fixed installation under medium mechanical load conditions, and applications with occasional flexing at free, non-continuously recurring movement without tensile load or compulsory guidance

Product features

- Flame-retardant according to IEC 60332.1.2
- Oil-resistant according to HD21.1: TM5

Approvals



Design

- Fine-wire strand made of bare copper wires
- PVC core insulation
- PVC outer sheath, high oil-resistance, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Approvals**
HD 21.13 S1, VDE 0281-13
- Specific insulation resistance**
> 20 GÖhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 12.5 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 140 H05VV5-F				
0011000	3 G 0.5	5.5 - 7.0	14.4	62.4
0011104	4 G 0.5	6.2 - 7.9	19.2	68.2
0011001	5 G 0.5	6.8 - 8.6	24.0	87.1
0011002	7 G 0.5	8.3 - 10.4	33.6	118.7
0011003	12 G 0.5	10.4 - 12.9	58.0	198
0011004	18 G 0.5	12.3 - 15.3	86.4	266.9
0011005	25 G 0.5	14.8 - 18.3	120.0	380.4
0011006	34 G 0.5	17.2 - 21.2	163.2	509
0011009	3 G 0.75	6.0 - 7.6	21.6	75.6
0011204	4 G 0.75	6.6 - 8.3	28.8	83.9
0011010	5 G 0.75	7.4 - 9.3	36.0	113.3
0011011	7 G 0.75	9.0 - 11.3	50.0	145
0011012	12 G 0.75	11.0 - 13.7	86.0	244.9
0011013	18 G 0.75	13.2 - 16.4	130.0	327.7
0011014	25 G 0.75	15.8 - 19.5	180.0	466.4
0011015	34 G 0.75	18.4 - 22.6	245.0	626.5
0011241	41 G 0.75	20.1 - 24.7	296.0	748
0011018	3 G 1.0	6.3 - 8.0	28.8	89.3
0011304	4 G 1.0	6.9 - 8.7	38.4	98.6
0011019	5 G 1.0	7.8 - 9.8	48.0	132.1
0011020	7 G 1.0	9.5 - 11.8	67.0	169.3
0011021	12 G 1.0	11.8 - 14.6	115.0	285.9
0011022	18 G 1.0	14.0 - 17.2	173.0	405.2
0011023	25 G 1.0	16.8 - 20.7	240.0	569.5
0011024	34 G 1.0	19.6 - 24.0	326.0	741.7
0011341	41 G 1.0	21.4 - 26.2	394.0	886
0011027	3 G 1.5	7.4 - 9.4	43.0	109.8
0011404	4 G 1.5	8.2 - 10.2	58.0	140.7
0011028	5 G 1.5	9.1 - 11.4	72.0	175
0011029	7 G 1.5	11.3 - 14.1	101.0	224.2
0011030	12 G 1.5	13.8 - 17.0	173.0	361.7
0011031	18 G 1.5	16.5 - 20.3	259.0	518.3
0011032	25 G 1.5	19.8 - 24.3	360.0	729.9
0011033	34 G 1.5	23.1 - 28.2	490.0	946.6
0011036	3 G 2.5	9.0 - 11.2	72.0	162.4
0011504	4 G 2.5	10.1 - 12.5	96.0	203.3
0011037	5 G 2.5	11.0 - 13.7	120.0	251.1
0011038	7 G 2.5	13.6 - 16.8	168.0	326
0011039	12 G 2.5	16.8 - 20.6	288.0	553.3
0011045	14 G 2.5	18.3 - 22.7	336.0	611
0011040	18 G 2.5	20.2 - 24.8	432.0	795.2
0011041	25 G 2.5	24.2 - 29.6	600.0	1109.6

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® 150 QUATTRO refer to page 43

Accessories

- SKINTOP® CLICK refer to page 654

Various applications

PVC sheath, approved

ÖLFLEX® 140 CY
H05VVC4V5-K (HD 21.13 S1)



Info

- Oil-resistant according to HD21.1: TM5
- EMC-compliant

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Machine tools
- Mainly used in dry, damp and wet interiors (including water-oil mixtures), but not for outdoor use
- For fixed installation under medium mechanical load conditions, and applications with occasional flexing at free, non-continuously recurring movement without tensile load or compulsory guidance
- In EMC-sensitive environments (electromagnetic compatibility)

Product features

- Flame-retardant according to IEC 60332.1.2
- Oil-resistant according to HD21.1: TM5
- High degree of screening
low transfer impedance
(max. 250 Ω/km at 30 MHz)

Approvals



Design

- Fine-wire strand made of bare copper wires
- PVC core insulation
- PVC inner sheath, grey
- Tinned-copper braiding
- PVC outer sheath, high oil-resistance, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Approvals**
HD 21.13 S1, VDE 0281-13
- Specific insulation resistance**
> 20 GΩm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5 °C to +70 °C
Fixed installation: -40 °C to +70 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 140 CY H05VVC4V5-K				
0035700	3 G 0.5	8.0 - 10.0	47.0	111.3
0035701	4 G 0.5	8.5 - 10.7	58.0	132.7
0035702	5 G 0.5	9.3 - 11.6	69.0	162.7
0035703	7 G 0.5	10.8 - 13.5	86.0	207.7
0035704	12 G 0.5	13.1 - 16.2	142.0	295
0035710	3 G 0.75	8.3 - 10.4	55.0	129.4
0035711	4 G 0.75	9.1 - 11.3	67.0	163.6
0035712	5 G 0.75	9.7 - 12.1	77.4	188.6
0035713	7 G 0.75	11.5 - 14.3	109.0	246.9
0035714	12 G 0.75	13.8 - 17.1	166.0	354.3
0035715	18 G 0.75	16.1 - 19.8	257.3	517
0035716	25 G 0.75	18.7 - 23.0	318.6	677.8
0035717	34 G 0.75	21.4 - 26.2	409.4	860.6
0035720	3 G 1.0	8.8 - 11.0	62.0	144.8
0035721	4 G 1.0	9.4 - 11.7	78.3	180.8
0035722	5 G 1.0	10.3 - 12.8	91.0	209
0035723	7 G 1.0	12.2 - 15.1	118.0	273
0035724	12 G 1.0	14.5 - 17.9	198.0	427.6
0035725	18 G 1.0	16.9 - 20.8	303.6	598.6
0035726	25 G 1.0	19.8 - 24.2	411.9	791.8
0035727	34 G 1.0	22.6 - 27.7	516.3	1003.9
0035730	3 G 1.5	9.7 - 12.1	83.0	189.7
0035731	4 G 1.5	10.7 - 13.2	97.8	221.6
0035732	5 G 1.5	11.8 - 14.7	118.0	261.8
0035733	7 G 1.5	14.1 - 17.4	218.0	356.7
0035734	12 G 1.5	16.7 - 20.6	309.7	559.4
0035735	18 G 1.5	19.5 - 24.0	411.4	767.6
0035736	25 G 1.5	22.9 - 28.0	546.5	1049
0035740	3 G 2.5	11.3 - 14.0	115.0	241.5
0035741	4 G 2.5	12.6 - 15.5	163.0	298.3
0035742	5 G 2.5	13.9 - 17.2	191.0	363.7
0035743	7 G 2.5	16.5 - 20.3	288.9	487.2
0035744	12 G 2.5	19.8 - 24.3	516.6	743.6

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® 150 CY QUATTRO refer to page 44

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-M BRUSH refer to page 669
- KMK Marking labels refer to page 884

ÖLFLEX® 150 QUATTRO



Info

- Oil-resistant according to HD21.1: TM5 and UL 1581 Class 43



Benefits

- Wide application range due to multiple approvals

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Machine tools
- Mainly used in dry, damp and wet interiors (including water-oil mixtures), but not for outdoor use
- For fixed installation under medium mechanical load conditions, and applications with occasional flexing at free, non-continuously recurring movement without tensile load or compulsory guidance
- Note: for the use of AWM (Appliance Wiring Material) cables in industrial machinery (USA) according to NFPA 79 Ed. 2012: please see the catalogue appendix table T29

Product features

- Flame-retardant according to IEC 60332-1-2 and UL 1581 §1061 Cable Flame Test
- Oil-resistant according to HD21.1: TM5 and UL 1581 Class 43

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- PVC core insulation
- PVC outer sheath, high oil-resistance, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Approvals**
H05VV5-F (HD 21.13 S1)
UL AWM Style 21098 or 2587
CSA AWM I A/B II A/B
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 12.5 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
HAR U_c/U: 300/500 V
UL/CSA: 600 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing:
HAR: -5 °C to +70 °C
UL/CSA: -5 °C to +90 °C
Fixed installation:
HAR: -40 °C to +70 °C
UL/CSA: -40 °C to +90 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 150 QUATTRO				
0015002	2 X 0.5	5.9	9.6	47
0015003	3 G 0.5	6.2	14.4	62.4
0015004	4 G 0.5	6.8	19.2	68.2
0015005	5 G 0.5	7.4	24.0	87.1
0015007	7 G 0.5	9.0	33.6	118.7
0015012	12 G 0.5	11.1	58.0	198
0015018	18 G 0.5	14.2	86.4	328
0015025	25 G 0.5	16.0	120.0	380.4
0015034	34 G 0.5	18.1	164.0	509
0015041	41 G 0.5	19.7	197.0	595
0015102	2 X 0.75	6.3	14.4	61
0015103	3 G 0.75	6.7	21.6	75.6
0015104	4 G 0.75	7.2	28.8	83.9
0015105	5 G 0.75	8.1	36.0	113.3
0015107	7 G 0.75	9.9	50.0	145
0015112	12 G 0.75	12.0	86.0	244.9
0015118	18 G 0.75	14.4	130.0	327.7
0015125	25 G 0.75	17.1	180.0	466.4
0015134	34 G 0.75	19.7	245.0	626.5
0015141	41 G 0.75	21.6	296.0	748
0015202	2 X 1.0	6.6	19.2	80
0015203	3 G 1.0	7.0	28.8	79
0015204	4 G 1.0	7.8	38.4	98.6
0015205	5 G 1.0	8.6	48.0	132.1

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0015206	6 G 1.0	9.7	57.6	150
0015207	7 G 1.0	10.4	67.0	169.3
0015212	12 G 1.0	12.8	115.0	285.9
0015218	18 G 1.0	15.1	173.0	405.2
0015225	25 G 1.0	18.0	240.0	569.5
0015234	34 G 1.0	20.9	326.0	741.7
0015241	41 G 1.0	22.8	394.0	886
0015250	50 G 1.0	25.0	480.0	1072.2
0015302	2 X 1.5	7.5	28.8	95
0015303	3 G 1.5	8.1	43.0	109.8
0015304	4 G 1.5	8.9	58.0	145
0015305	5 G 1.5	10.0	72.0	168
0015307	7 G 1.5	12.3	101.0	224.2
0015312	12 G 1.5	15.1	173.0	361.7
0015318	18 G 1.5	17.8	259.0	518.3
0015325	25 G 1.5	21.5	360.0	729.9
0015334	34 G 1.5	24.7	490.0	946.6
0015341	41 G 1.5	26.8	591.0	1136
0015402	2 X 2.5	9.2	48.0	159
0015403	3 G 2.5	9.9	72.0	170
0015404	4 G 2.5	10.7	96.0	210
0015405	5 G 2.5	12.1	120.0	257
0015407	7 G 2.5	14.5	168.0	340
0015412	12 G 2.5	17.7	288.0	580
0015418	18 G 2.5	21.4	432.0	850
0015425	25 G 2.5	25.8	600.0	1166

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 600 m drum or 8 x 75 m coils).
 VDE certification covers the range of sizes from 0 to 60 cores.
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® 140 refer to page 41
- ÖLFLEX® 191 refer to page 45

Accessories

- SKINTOP® CLICK refer to page 654
- SKINTOP® ST-M refer to page 652

Various applications

PVC sheath, approved

ÖLFLEX® 150 CY QUATTRO



Info

- Oil-resistant according to HD21.1: TM5 and UL 1581 Class 43
- EMC-compliant

Benefits

- Wide application range due to multiple approvals

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- In EMC-sensitive environments (electromagnetic compatibility)
- Mainly used in dry, damp and wet interiors (including water-oil mixtures), but not for outdoor use
- For fixed installation under medium mechanical load conditions, and applications with occasional flexing at free, non-continuously recurring movement without tensile load or compulsory guidance
- Note: for the use of AWM (Appliance Wiring Material) cables in industrial machinery (USA) according to NFPA 79 Ed. 2012: please see the catalogue appendix table T29

Product features

- Flame-retardant according to IEC 60332-1-2 and UL 1581 §1061 Cable Flame Test
- Oil-resistant according to HD21.1: TM5 and UL 1581 Class 43
- High degree of screening
low transfer impedance
(max. 250 Ω/km at 30 MHz)

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- PVC core insulation
- PVC inner sheath, grey
- Tinned-copper braiding
- PVC outer sheath, high oil-resistance, grey (RAL 7001)

Technical data

Core identification code
Black with white numbers acc. to VDE 0293

Approvals
H05VVC4V5-K (HD 21.13 S1)
UL AWM Style 21098 or 2587
CSA AWM I A/B II A/B

Specific insulation resistance
> 20 GΩm x cm

Conductor stranding
Fine wire according to VDE 0295, class 5/IEC 60228 class 5

Minimum bending radius
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter

Nominal voltage
HAR U₀/U: 300/500 V
UL/CSA: 600 V

Test voltage
3000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Occasional flexing:
HAR: -5 °C to +70 °C
UL/CSA: -5 °C to +90 °C
Fixed installation:
HAR: -40 °C to +70 °C
UL/CSA: -40 °C to +90 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 150 CY QUATTRO				
0015602	2 X 0.75	8.5	40.0	109
0015603	3 G 0.75	8.9	51.0	125
0015604	4 G 0.75	9.6	70.0	157
0015605	5 G 0.75	10.3	77.0	180
0015607	7 G 0.75	12.3	93.0	226
0015612	12 G 0.75	14.8	155.0	325
0015702	2 X 1.0	8.9	46.4	121
0015703	3 G 1.0	9.5	76.0	145
0015704	4 G 1.0	10.1	80.0	180
0015705	5 G 1.0	11.1	95.0	203
0015707	7 G 1.0	13.1	118.0	273
0015712	12 G 1.0	15.8	195.0	425
0015802	2 X 1.5	9.9	59.2	151
0015803	3 G 1.5	10.5	84.0	159
0015804	4 G 1.5	11.3	94.0	211
0015805	5 G 1.5	12.6	122.0	241
0015807	7 G 1.5	14.9	143.0	306
0015812	12 G 1.5	17.6	254.0	480
0015903	3 G 2.5	11.8	120.0	245
0015904	4 G 2.5	13.1	170.0	295
0015905	5 G 2.5	14.6	205.0	365
0015907	7 G 2.5	17.3	241.0	480

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 600 m drum or 8 x 75 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® 140 CY refer to page 42
- ÖLFLEX® 191 CY refer to page 46

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-M BRUSH refer to page 669

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX



Info

- Conductor cross-section up to 120 mm²
- Oil-resistant according to HD21.1: TM5 and UL 1581 Class 43

Benefits

- High electrical performance due to 4 kV test voltage
- For various applications

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Machine tools
- Mainly used in dry, damp and wet interiors (including water-oil mixtures), but not for outdoor use
- For fixed installation under medium mechanical load conditions, and applications with occasional flexing at free, non-continuously recurring movement without tensile load or compulsory guidance
- Note: for the use of AWM (Appliance Wiring Material) cables in industrial machinery (USA) according to NFPA 79 Ed. 2012: please see the catalogue appendix table T29

Product features

- Flame-retardant according to IEC 60332-1-2 and UL 1581 §1061 Cable Flame Test
- Oil-resistant according to HD21.1: TM5 and UL 1581 Class 43

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- PVC core insulation
- PVC outer sheath, high oil-resistance, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Approvals**
UL AWM Style 21098 or 2587
CSA AWM I A/B II A/B
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
HAR U₀/U: 300/500 V
UL/CSA: 600 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing:
HAR: -5 °C to +70 °C
UL/CSA: -5 °C to +90 °C
Fixed installation:
HAR: -40 °C to +70 °C
UL/CSA: -40 °C to +90 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 191				
0011106	18 G 0.5	12.1	86.4	267
0011218	2 X 0.75	5.9	14.4	51
0011219	3 G 0.75	6.3	21.6	61
0011220	4 G 0.75	6.8	28.8	74
0011221	5 G 0.75	7.5	36.0	88
0011222	7 G 0.75	8.3	50.4	116
0011223	9 G 0.75	10.5	64.8	152
0011224	12 G 0.75	11.2	86.4	194
0011225	18 G 0.75	13.3	129.6	275
0011226	25 G 0.75	16.1	180.0	383
0011113	3 G 1.0	6.7	28.8	66
0011114	4 G 1.0	7.2	38.4	81
0011115	5 G 1.0	8.1	48.0	95
0011116	7 G 1.0	8.9	67.2	125
0011117	12 G 1.0	12.0	115.2	211
0011118	18 G 1.0	14.4	172.8	309
0011119	25 G 1.0	17.3	240.0	413
0011136	2 X 1.5	6.9	28.8	74
0011137	3 G 1.5	7.3	44.0	91
0011138	4 G 1.5	8.2	58.0	112
0011139	5 G 1.5	9.0	72.0	136
0011140	7 G 1.5	10.0	101.0	179
0011125	9 G 1.5	12.7	129.6	230
0011142	12 G 1.5	13.4	173.0	313

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0011143	18 G 1.5	16.1	260.0	444
0011144	25 G 1.5	19.5	360.0	620
0011150	3 G 2.5	8.4	72.0	138
0011151	4 G 2.5	9.1	96.0	182
0011152	5 G 2.5	10.2	120.0	216
0011153	7 G 2.5	11.4	168.0	286
0011160	3 G 4	10.0	115.2	202
0011161	4 G 4	10.9	154.0	245
0011162	5 G 4	12.2	192.0	310
0011167	7 G 4	13.5	268.8	470
0011165	4 G 6	13.0	231.0	398
0011166	5 G 6	14.5	288.0	479
0011169	4 G 10	16.7	384.0	559
0011170	5 G 10	18.4	480.0	782
0011172	4 G 16	22.1	615.0	904.2
0011173	5 G 16	24.3	768.0	1171
0011175	4 G 25	25.6	960.0	1299
0011176	5 G 25	28.0	1,200.0	1640
0011178	4 G 35	28.1	1,344.0	2119
0011179	5 G 35	31.5	1,680.0	2606
0011205	4 G 50	35.7	1,920.0	2898
0011206	4 G 70	43.0	2,688.0	4052
0011207	4 G 95	47.2	3,648.0	5430
0011208	4 G 120	54.2	4,608.0	6290

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 600 m drum or 8 x 75 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® 150 QUATTRO refer to page 43
- ÖLFLEX® CONTROL TM refer to page 47
- ÖLFLEX® TRAY II refer to page 49
- ÖLFLEX® CONTROL M refer to page 71

Accessories

- SKINTOP® CLICK refer to page 654
- SKINTOP® ST-M refer to page 652
- Cable shears KT 4 and KT 5 refer to page 904

Various applications

PVC sheath, approved

ÖLFLEX® 191 CY



Info

- Conductor cross-section up to 120 mm²
- Oil-resistant according to HD21.1: TM5 and UL 1581 Class 43
- EMC-compliant

Benefits

- High electrical performance due to 4 kV test voltage
- For various applications

Application range

- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- In EMC-sensitive environments (electromagnetic compatibility)
- Mainly used in dry, damp and wet interiors (including water-oil mixtures), but not for outdoor use
- For fixed installation under medium mechanical load conditions, and applications with occasional flexing at free, non-continuously recurring movement without tensile load or compulsory guidance
- Note: for the use of AWM (Appliance Wiring Material) cables in industrial machinery (USA) according to NFPA 79 Ed. 2012: please see the catalogue appendix table T29

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- PVC core insulation
- PVC inner sheath, grey
- Tinned-copper braiding
- PVC outer sheath, high oil-resistance, grey (RAL 7001)

Product features

- Flame-retardant according to IEC 60332-1-2 and UL 1581 §1061 Cable Flame Test
- Oil-resistant according to HD21.1: TM5 and UL 1581 Class 43
- High degree of screening
low transfer impedance (max. 250 Ω/km at 30 MHz)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Approvals**
UL AWM Style 21098 or 2587
CSA AWM I A/B II A/B
- Specific insulation resistance**
> 20 GΩhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
HAR U₀/U: 300/500 V
UL/CSA: 600 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing:
HAR: -5 °C to +70 °C
UL/CSA: -5 °C to +90 °C
Fixed installation:
HAR: -40 °C to +70 °C
UL/CSA: -40 °C to +90 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 191 CY				
3023436	3 G 0.5	8.0	46.9	122
3025753	4 G 0.5	8.5	47.4	130
0011230	2 X 0.75	8.1	38.4	102
0011231	3 G 0.75	8.5	47.2	115
0011232	4 G 0.75	9.0	55.8	131
0011233	5 G 0.75	9.9	66.4	155
0011234	7 G 0.75	10.5	85.9	187
0011235	12 G 0.75	14.0	145.0	312
0011236	18 G 0.75	16.1	198.3	413
0011237	25 G 0.75	18.9	261.5	548
0011202	2 X 1.0	8.0	48.0	126
0011180	3 G 1.0	8.8	55.8	122
0011181	4 G 1.0	9.6	80.8	157
0011182	5 G 1.0	10.1	89.4	183
0011183	7 G 1.0	10.7	99.9	207
0011184	12 G 1.0	14.6	175.7	342
0011185	18 G 1.0	16.5	241.7	472
0011186	25 G 1.0	19.2	341.7	648
0011302	2 X 1.5	8.9	64.7	156
0011187	3 G 1.5	9.3	89.1	166
0011188	4 G 1.5	10.1	96.6	191
0011189	5 G 1.5	11.0	111.2	222
0011190	7 G 1.5	12.1	145.2	270

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0011191	12 G 1.5	16.0	257.0	464
0011192	18 G 1.5	18.8	382.8	679
0011193	25 G 1.5	22.9	546.2	952
0011194	3 G 2.5	10.9	111.1	221
0011195	4 G 2.5	11.4	140.6	269
0011196	5 G 2.5	12.9	167.3	325
0011197	7 G 2.5	14.1	240.0	421
30010542	12 G 2.5	17.9	414.9	769
30010543	18 G 2.5	22.0	626.1	1102
30010544	4 G 4	13.6	236.7	462
30010545	5 G 4	14.9	277.8	535
30010546	7 G 4	16.2	393.4	735
30010548	4 G 6	15.8	317.1	574
3023130	5 G 6	17.3	413.7	737
30010547	7 G 6	18.8	563.8	950
3023131	4 G 10	19.5	550.4	946
30010639	4 G 16	24.7	819.1	1189
3023132	4 G 25	28.5	1,165.0	1691.67
30010928	4 G 35	31.7	1,683.0	2700
3026535	4 G 50	39.7	2,342.0	3362
3025946	4 G 70	44.8	3,229.0	4490
3025947	4 G 95	50.0	4,010.0	5540
3026536	4 G 120	61.3	5,012.0	6960

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 600 m drum or 8 x 75 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® 150 CY QUATTRO refer to page 44
- ÖLFLEX® CONTROL TM CY refer to page 48
- ÖLFLEX® TRAY II CY refer to page 50

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-M BRUSH refer to page 669
- Cable shears KT 4 and KT 5 refer to page 904

ÖLFLEX® CONTROL TM



Info

- Complies with NFPA 70 and 79 "Electrical Standard of Industrial Machinery" USA
- Improved oil-resistance: UL OIL RES I & II
- Torsion-tested for wind turbines



Benefits

- Wide application range due to multiple approvals
- Cost-saving, easy installation due to omission of closed raceways (suitable for open wiring)

Application range

- Industrial machinery; plant engineering
- Machine tools compliant with UL MTW (Machine Tool Wiring)
- TC-ER (Tray Cable Exposed Run) approval for open wiring between cable tray and industrial machines/plants acc. to NEC 336.10(7)
- Wind turbines: USA Wind Turbine Tray Cable (WTTC)
- Class 1, Div. 2 in accordance with NEC "National Electrical Code" Art. 336, 392, 501

Product features

- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Oil-resistant according to UL OIL RES I & II
- Water-resistant, UL Wet Approval 75 °C
- Torsion-tested for wind turbines

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- Insulation: PVC with nylon sheath (PA skin)
- Outer sheath made of special PVC compound, grey

Technical data

- Core identification code**
Black with white numbers
- Approvals**
UL MTW, TC-ER, WTTC 1000 V, BUS DROP c(UL) Type TC and CIC FT4
CSA AWM I/II A/B FT4
UL AWM Style 20886
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine-wire, bare copper strand
- Minimum bending radius**
6 x outer diameter
- Nominal voltage**
UL/CSA: 600 V (TC, MTW, CIC), WTTC 1000V
UL/CSA: 1000 V (AWM)
HAR U_o/U_i: 300/500 V
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CONTROL TM				
281803	3 G 1.0	7.4	28.8	82
281804	4 G 1.0	8.0	38.4	95
281805	5 G 1.0	8.6	48.0	112
281807	7 G 1.0	9.3	67.0	144
281812	12 G 1.0	12.0	115.0	247
281818	18 G 1.0	14.7	173.0	365
281825	25 G 1.0	16.7	240.0	464
281602	2 X 1.5	7.3	28.8	74
281603	3 G 1.5	8.1	43.0	100
281604	4 G 1.5	8.8	58.0	119
281605	5 G 1.5	9.5	72.0	141
281607	7 G 1.5	10.3	101.0	183
281609	9 G 1.5	11.9	129.6	247
281612	12 G 1.5	14.1	173.0	328
281618	18 G 1.5	16.4	259.0	403
281625	25 G 1.5	18.6	360.0	464
281403	3 G 2.5	8.9	72.0	125
281404	4 G 2.5	9.8	96.0	155
281405	5 G 2.5	10.7	120.0	185
281407	7 G 2.5	11.6	168.0	244
281203	3 G 4	10.6	115.0	165
281204	4 G 4	11.5	154.0	220
281205	5 G 4	12.6	192.0	269
281207	7 G 4	14.6	269.0	482
281004	4 G 6	14.5	231.0	382
281005	5 G 6	15.8	288.0	457
280804	4 G 10	17.7	384.0	615
280805	5 G 10	19.4	480.0	771
280604	4 G 16	22.5	615.0	864

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 610 m drum or 8 x 76 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® TRAY II refer to page 49
- ÖLFLEX® CONTROL M refer to page 71

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® ST-M refer to page 652

Various applications

PVC sheath, approved

ÖLFLEX® CONTROL TM CY



Info

- Complies with NFPA 70 and 79 "Electrical Standard of Industrial Machinery" USA
- Improved oil-resistance: UL OIL RES I & II
- Torsion-tested for wind turbines

Benefits

- Wide application range due to multiple approvals
- Cost-saving, easy installation due to omission of closed raceways (suitable for open wiring)

Application range

- Industrial machinery; plant engineering
- Machine tools compliant with UL MTW (Machine Tool Wiring)
- TC-ER (Tray Cable Exposed Run) approval for open wiring between cable tray and industrial machines/plants acc. to NEC 336.10(7)
- Wind turbines: USA Wind Turbine Tray Cable (WTTTC)
- Class 1, Div. 2 in accordance with NEC "National Electrical Code" Art. 336, 392, 501

Product features

- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Oil-resistant according to UL OIL RES I & II
- Water-resistant, UL Wet Approval 75 °C
- High degree of screening low transfer impedance (max. 250 Ω/km at 30 MHz)
- Torsion-tested for wind turbines

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- Insulation: PVC with nylon sheath (PA skin)
- Aluminum-coated foil
- Tinned-copper braiding
- Outer sheath made of special PVC compound, grey

Technical data

- Core identification code**
Black with white numbers
- Approvals**
UL MTW, TC-ER, WTTTC 1000 V, BUS DROP c(UL) Type TC and CIC FT4
CSA AWM I/II A/B FT4
UL AWM Style 20886
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine-wire, bare copper strand
- Minimum bending radius**
Fixed installation: 6 x outer diameter
- Nominal voltage**
UL/CSA: 600 V (TC, MTW, CIC), WTTTC 1000V
UL/CSA: 1000 V (AWM)
HAR U₀/U: 300/500 V
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CONTROL TM CY				
281803CY	3 G 1.0	8.1	49.5	119
281804CY	4 G 1.0	8.6	60.2	137
281805CY	5 G 1.0	9.3	81.4	149
281807CY	7 G 1.0	10.0	101.1	193
281812CY	12 G 1.0	12.8	161.4	330
281818CY	18 G 1.0	15.5	228.2	438
281825CY	25 G 1.0	17.5	326.4	574
281602CY	2 X 1.5	8.3	49.7	115
281603CY	3 G 1.5	8.8	65.0	144
281604CY	4 G 1.5	9.4	81.9	173
281605CY	5 G 1.5	10.2	99.1	189
281607CY	7 G 1.5	11.1	140.4	246
281612CY	12 G 1.5	15.0	225.2	426
281618CY	18 G 1.5	17.2	321.7	552
281625CY	25 G 1.5	19.4	453.6	750
281403CY	3 G 2.5	9.7	105.7	180
281404CY	4 G 2.5	10.4	135.6	223
281405CY	5 G 2.5	11.5	160.3	268
281407CY	7 G 2.5	12.4	213.0	327
281204CY	4 G 4	12.3	198.5	315
281205CY	5 G 4	14.2	242.7	388
281207CY	7 G 4	15.3	323.4	499
281004CY	4 G 6	15.3	284.6	552
281005CY	5 G 6	16.7	348.8	613
280804CY	4 G 10	18.5	458.4	857
280604CY	4 G 16	22.9	723.6	1208

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 610 m drum or 8 x 76 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® TRAY II CY refer to page 50

Accessories

- SKINTOP® MS-SC-M refer to page 668

ÖLFLEX® TRAY II



Info

- Complies with NFPA 70 and 79 "Electrical Standard of Industrial Machinery" USA
- Improved oil-resistance: UL OIL RES I & II
- Torsion-tested for wind turbines

Benefits

- Wide application range due to multiple approvals
- Cost-saving, easy installation due to omission of closed raceways (suitable for open wiring)

Application range

- Industrial machinery; plant engineering
- TC-ER (Tray Cable Exposed Run) approval for open wiring between cable tray and industrial machines/plants acc. to NEC 336.10(7)
- Wind turbines: USA Wind Turbine Tray Cable (WTTTC)
- Class 1, Div. 2 in accordance with NEC "National Electrical Code" Art. 336, 392, 501
- Suitable for outdoor use and direct burial

Product features

- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Oil-resistant according to UL OIL RES I & II
- Water-resistant, UL Wet Approval 75 °C
- UV-resistant UL SUN RES
- Torsion-tested for wind turbines

LAPP KABEL STUÏGART ÖLFLEX® TRAY II-(B) (UL) TC-ER 16 AWG/5C 90 °C DRY 75 °C WET 600 V SUN RES DIR BUR or MTW E 171371--c(UL) CIC FT4--CSA AWM II A/B 90C 600V FT4 LL74246 CÉ



Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T 16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- Insulation: PVC with nylon sheath (PA skin)
- Outer sheath made of special PVC compound, black

Technical data

- Core identification code**
Black with white numbers
- Approvals**
UL MTW, TC-ER, WTTTC 1000 V, BUS DROP c(UL) Type TC and CIC FT4
CSA AWM I/II A/B FT4
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine copper wire strands
- Minimum bending radius**
5 x outer diameter
- Nominal voltage**
UL/CSA: 600 V (TC, MTW, CIC), WTTTC 1000V
UL/CSA: 1000 V (AWM)
HAR U₀/U: 300/500 V
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm ² per conductor	AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® Tray II					
221803	3 G 1.0		7.5	28.8	85
221804	4 G 1.0		8.1	38.4	98
221805	5 G 1.0		8.8	48.0	115
221807	7 G 1.0		9.5	67.0	149
221809	9 G 1.0		10.9	87.0	167
221812	12 G 1.0		12.1	115.0	255
221818	18 G 1.0		14.9	173.0	365
221825	25 G 1.0		16.9	240.0	479
221603	3 G 1.5		8.3	43.0	103
221604	4 G 1.5		8.9	58.0	124
221605	5 G 1.5		9.7	72.0	146
221607	7 G 1.5		10.5	101.0	189
221608	8 G 1.5		11.3	116.0	203
221609	9 G 1.5		12.1	130.0	255
221612	12 G 1.5		14.4	173.0	328
221618	18 G 1.5		16.6	259.0	431
221625	25 G 1.5		18.8	360.0	592
221641	41 G 1.5		25.0	591.0	931
221650	50 G 1.5		26.6	720.0	1132
221403	3 G 2.5		9.2	72.0	130
221404	4 G 2.5		10.0	96.0	159
221405	5 G 2.5		10.8	120.0	191
221407	7 G 2.5		11.8	168.0	252
221409	9 G 2.5		14.5	216.0	335
221412	12 G 2.5		16.2	288.0	459
221418	18 G 2.5		18.7	432.0	654
221425	25 G 2.5		22.5	600.0	874
221204	4 G 4		11.7	153.0	226
221205	5 G 4		12.8	192.0	279
221207	7 G 4		14.8	269.0	384
221004	4 G 6		14.7	231.0	394
221005	5 G 6		16.0	288.0	472
221007	7 G 6		17.4	405.0	661
220804	4 G 10		17.9	384.0	615
220805	5 G 10		19.6	480.0	771
220604	4 G 16		22.8	615.0	864
220605	5 G 16		24.9	768.0	1080
220404	4 G	4	27.8	960.0	1418
220204	4 G	2	32.3	1,344.0	2077

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 610 m drum or 8 x 76 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CONTROL TM refer to page 47
- ÖLFLEX® CONTROL M refer to page 71

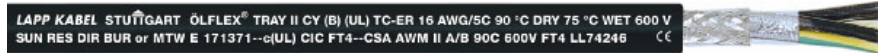
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® ST-M refer to page 652

Various applications

PVC sheath, approved

ÖLFLEX® TRAY II CY



Info

- Complies with NFPA 70 and 79 "Electrical Standard of Industrial Machinery" USA
- Improved oil-resistance: UL OIL RES I & II
- Torsion-tested for wind turbines

Benefits

- Wide application range due to multiple approvals
- Cost-saving, easy installation due to omission of closed raceways (suitable for open wiring)

Application range

- Industrial machinery; plant engineering
- TC-ER (Tray Cable Exposed Run) approval for open wiring between cable tray and industrial machines/plants acc. to NEC 336.10(7)
- Wind turbines: USA Wind Turbine Tray Cable (WTTC)
- Class 1, Div. 2 in accordance with NEC "National Electrical Code" Art. 336, 392, 501
- Suitable for outdoor use and direct burial

Product features

- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Oil-resistant according to UL OIL RES I & II
- Water-resistant, UL Wet Approval 75 °C
- UV-resistant UL SUN RES
- Torsion-tested for wind turbines

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- Insulation: PVC with nylon sheath (PA skin)
- Aluminum-coated foil
- Tinned-copper braiding
- Outer sheath made of special PVC compound, black

Technical data

- Core identification code**
Black with white numbers
- Approvals**
UL MTW, TC-ER, WTTC 1000 V, BUS DROP c(UL) Type TC and CIC FT4
CSA AWM I/II A/B FT4
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine copper wire strands
- Minimum bending radius**
5 x outer diameter
- Nominal voltage**
UL/CSA: 600 V (TC, MTW, CIC), WTTC 1000V
UL/CSA: 1000 V (AWM)
HAR U₀/U: 300/500 V
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm ² per conductor	AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® Tray II CY					
2218030	3 G 1.0		8.2	35.1	119
2218040	4 G 1.0		8.8	55.2	137
2218050	5 G 1.0		9.4	65.8	149
2218070	7 G 1.0		10.1	86.9	193
2218120	12 G 1.0		12.9	149.3	330
2218180	18 G 1.0		15.7	214.2	438
2218250	25 G 1.0		17.7	354.2	574
2216030	3 G 1.5		8.9	59.8	144
2216040	4 G 1.5		9.6	74.5	173
2216050	5 G 1.5		10.3	93.5	189
2216070	7 G 1.5		11.3	130.5	246
2216120	12 G 1.5		15.1	213.8	426
2216180	18 G 1.5		17.3	312.4	515
2216250	25 G 1.5		19.6	415.6	708
2214030	3 G 2.5		9.8	91.2	180
2214040	4 G 2.5		10.7	125.7	223
2214050	5 G 2.5		11.6	150.1	268
2214070	7 G 2.5		12.5	201.2	327
2214120	12 G 2.5		16.9	333.6	595
2214180	18 G 2.5		19.5	487.6	784
2214250	25 G 2.5		23.3	685.1	1048
2212040	4 G 4		12.5	186.4	315
2212050	5 G 4		14.4	232.6	388
2212070	7 G 4		15.5	310.2	499
2210040	4 G 6		15.5	271.7	552
2210070	7 G 6		18.2	457.4	856
2208040	4 G 10		18.7	438.6	857
2206040	4 G 16		23.3	699.0	1208
2204040	4 G	4	28.6	1,296.8	1982
2202040	4 G	2	33.2	1,899.5	2903

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 610 m drum or 8 x 76 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CONTROL TM CY refer to page 48

Accessories

- SKINTOP® MS-SC-M refer to page 668

ÖLFLEX® SF



Info

- Super-flexible cable for handheld equipment
- Ozone-resistant according to EN 50396



Application range

- Very suitable for domestic appliances, electrical power tools, and various handyman tools
- H05VV-F cable types may not be used in commercial premises, with the exception of offices.
- Not for permanent outdoor use.

Product features

- Flame-retardant according to IEC 60332.1.2
- Highly flexible at cold temperatures
- Design and geometry in compliance with harmonisation document
- Ozone-resistant according to EN 50396

Approvals



Design

- Super-fine strands of bare copper wire with an individual wire diameter of 0.07 mm
- PVC core insulation, cold-resistant
- PVC outer sheath, cold-resistant, orange (RAL 2003)

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Super-fine wire
(diameter of each wire is 0.07 mm)
- Minimum bending radius**
Occasional flexing: 10 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -15 °C to +60 °C
- VDE-tested**
Type H05VV-F acc. to VDE 0281-5,
from 6 cores: based on VDE 0281-5

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SF				
0027590	2 X 0.75	6.4	14.9	50
0027591	3 G 0.75	6.9	22.3	60
00275923	4 G 0.75	7.7	29.7	73
00275933	5 G 0.75	8.7	37.1	88
0027594	7 G 0.75	10.4	51.5	109
0027600	2 X 1.0	6.8	20.1	74
0027601	3 G 1.0	7.4	30.2	87
00276033	5 G 1.0	9.2	50.8	130
0027701	3 G 1.5	8.7	44.8	116
00277023	4 G 1.5	9.9	61.0	166
00277033	5 G 1.5	11.1	72.0	184

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® 500 P refer to page 74
- ÖLFLEX® 550 P refer to page 77

Accessories

- SKINTOP® ST-M refer to page 652
- STAR STRIP stripping tool refer to page 906

ÖLFLEX® CLASSIC 100 H



Info

- Please note: discontinued product! <Reduced range of sizes>
- For sizes with conductor cross section smaller than 35 mm² see ÖLFLEX® CLASSIC 130 H BK 0.6/1 kV

Application range

- Public buildings
- Airport, railway station
- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Particularly where human and animal life as well as valuable property are exposed to high risk of fire hazards

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)
- Oil-resistant according to SEV TB 20 B

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Sheath made of special halogen-free compound, grey

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9
- Based on**
HD 21.13 S 1; VDE 0281 Part 13
HD 21.5; VDE 0281 Part 5
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 450/750 VAC
In protected and fixed installations:
U₀/U: 600/1000 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -30 °C to +70 °C
Fixed installation: -40 °C to +80 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
00141173	4 G 35	32.8	1,344.0	2060
00141183	5 G 35	37.6	1,680.0	2577
00141193	4 G 50	38.0	1,920.0	2811
00141203	4 G 70	42.8	2,688.0	3968
00141213	4 G 95	47.1	3,648.0	4957
00141223	4 G 120	52.4	4,608.0	6391

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Single lengths for sizes: ≥ 4G50 max. 500 m; ≥ 4G120 max. 400 m
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 130 H BK 0,6/1kV refer to page 59

Accessories

- SKINTOP® ST-HF-M refer to page 656

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

ÖLFLEX® CLASSIC 110 H

VDE-tested characteristics



Info

- High flexibility and oil-resistance
- VDE-certified
- UV and weather-resistant according to ISO 4892-2

LAPP KABEL STUTTGART ÖLFLEX® CLASSIC 110 H IEC 332.3 CE HALOGENFREE · OIL RESISTANT



Application range

- Public buildings
- Airport, railway station
- Plant engineering
Industrial machinery
Heating and air-conditioning systems
Stage applications
- Particularly where human and animal life as well as valuable property are exposed to high risk of fire hazards

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)

- Low smoke density according to IEC 61034
- Oil-resistant according to EN 60811-2-1 and UL OIL RES I and UL OIL RES II
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Outer sheath made of special halogen-free compound, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
HD 21.13 S1; VDE 0281 Part 13
HD 21.5; VDE 0281 Part 5
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 10 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -30 °C to +70 °C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 H U₀/U: 300/500 V				
10019900	2 X 0.5	5.1	9.6	41
10019901	3 G 0.5	5.4	14.4	49
10019902	3 X 0.5	5.4	14.4	49
10019903	4 G 0.5	5.8	19.2	58
10019904	4 X 0.5	5.8	19.2	58
10019905	5 G 0.5	6.3	24.0	69
10019906	7 G 0.5	6.9	33.6	87
10019907	12 G 0.5	9.1	57.6	141
10019910	2 X 0.75	5.5	14.4	51
10019911	3 G 0.75	5.8	21.6	61
10019912	3 X 0.75	5.8	21.6	61
10019913	4 G 0.75	6.3	28.8	73
10019914	4 X 0.75	6.3	28.8	73
10019915	5 G 0.75	6.9	36.0	87
10019916	5 X 0.75	6.9	36.0	87
10019917	7 G 0.75	7.5	50.4	111
10019918	7 X 0.75	7.5	50.4	111
10019919	9 G 0.75	9.6	64.8	150
10019920	12 G 0.75	10.1	86.4	186
10019921	18 G 0.75	12.0	129.6	265
10019922	25 G 0.75	14.1	180.0	365
10019960	2 X 1.0	5.8	19.2	59
10019961	3 G 1.0	6.1	28.8	72
10019962	3 X 1.0	6.1	28.8	72
10019963	4 G 1.0	6.6	38.4	87
10019964	4 X 1.0	6.6	38.4	87
10019965	5 G 1.0	7.3	48.0	104
10019967	7 G 1.0	8.1	67.2	138
10019968	8 G 1.0	9.7	76.8	164
10019969	12 G 1.0	10.7	115.2	225
10019970	14 G 1.0	11.4	134.4	261
10019971	18 G 1.0	12.9	172.8	328
10019972	25 G 1.0	15.0	240.0	445

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
10019973	41 G 1.0	19.2	393.6	719
10019930	2 X 1.5	6.4	28.8	76
10019931	3 G 1.5	6.8	43.2	94
10019980	3 X 1.5	6.8	43.2	94
10019932	4 G 1.5	7.4	57.6	115
10019933	5 G 1.5	8.3	72.0	142
10019934	7 G 1.5	9.0	100.8	184
10019981	8 G 1.5	10.8	115.2	218
10019982	9 G 1.5	11.6	129.6	245
10019935	12 G 1.5	12.2	172.8	308
10019936	14 G 1.5	13.0	201.6	357
10019937	18 G 1.5	14.6	259.2	449
10019938	25 G 1.5	17.2	360.0	617
10019927	34 G 1.5	19.8	489.6	821
10019944	2 X 2.5	7.6	48.0	113
10019945	3 G 2.5	8.3	72.0	146
10019946	4 G 2.5	9.0	96.0	180
10019947	5 G 2.5	10.1	120.0	221
10019948	7 G 2.5	11.2	168.0	295
10019949	12 G 2.5	15.1	288.0	491
10019950	4 G 4	10.8	153.6	268
10019951	5 G 4	12.1	192.0	328
10019952	7 G 4	13.4	268.8	438
10019953	4 G 6	13.0	230.4	391
10019954	5 G 6	14.5	288.0	478
10019975	7 G 6	16.0	403.2	638
10019851	4 G 10	16.2	384.0	635
10019852	5 G 10	18.1	480.0	775
10019849	4 G 16	18.8	614.4	930
10019853	5 G 16	21.2	768.0	1147
10019854	4 G 25	23.5	960.0	1442
10019855	5 G 25	26.4	1,200.0	1773
10019856	4 G 35	26.6	1,344.0	1917

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 130 H refer to page 57
- ÖLFLEX® CLASSIC 130 H BK 0,6/1kV refer to page 59

Accessories

- SKINTOP® ST-HF-M refer to page 656
- MULTICRIMP 6 crimping pliers refer to page 915

ÖLFLEX® CLASSIC 110 CH

VDE-tested characteristics

LAPP KABEL STUFGART ÖLFLEX CLASSIC 110 CH CE
HALOGENFREE - OIL RESISTANT IEC 332.3



Info

- High flexibility and oil-resistance
- VDE-certified
- UV and weather-resistant according to ISO 4892-2

Application range

- Public buildings
- Airport, railway station
- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Particularly where human and animal life as well as valuable property are exposed to high risk of fire hazards
- In EMC-sensitive environments (electromagnetic compatibility)

- Low smoke density according to IEC 61034
- Oil-resistant according to EN 60811-2-1 and UL OIL RES I and UL OIL RES II
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396

Approvals



Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)

Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Halogen-free inner sheath, grey
- Tinned-copper braiding
- Outer sheath made of special halogen-free compound, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
HD 21.13 S1; VDE 0281 Part 13
HD 21.5; VDE 0281 Part 5
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -30 °C to +70 °C
Fixed installation: -40 °C to +80 °C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 CH U₀/U: 300/500 V				
10035030	2 X 0.5	7.1	29.1	85
10035031	3 G 0.5	7.4	35.1	95
10035032	3 X 0.5	7.4	35.1	95
10035033	4 G 0.5	8.0	41.4	111
10035034	4 X 0.5	8.0	41.4	111
10035035	5 G 0.5	8.6	48.0	126
10035036	7 G 0.5	9.1	59.9	148
10035037	12 G 0.5	11.5	91.4	226
10035040	2 X 0.75	7.7	35.4	101
10035041	3 G 0.75	8.0	43.8	114
10035042	3 X 0.75	8.0	43.8	114
10035043	4 G 0.75	8.5	52.8	130
10035044	4 X 0.75	8.5	52.8	130
10035045	5 G 0.75	9.3	62.3	153
10035046	5 X 0.75	9.3	62.3	153
10035047	7 G 0.75	9.9	79.5	183
10035048	7 X 0.75	9.9	79.5	183
10035050	12 G 0.75	12.5	123.2	280
10035051	18 G 0.75	14.8	188.6	399
10035052	25 G 0.75	16.9	247.5	522
10035055	2 X 1.0	8.0	41.4	112
10035056	3 G 1.0	8.4	52.1	127
10035057	3 X 1.0	8.4	52.1	127
10035058	4 G 1.0	8.9	73.5	157
10035059	4 X 1.0	8.9	73.5	157
10035060	5 G 1.0	9.7	83.2	171
10035061	7 G 1.0	10.3	97.2	210
10035062	12 G 1.0	13.6	168.7	347
10035063	18 G 1.0	15.7	235.4	474
10035064	25 G 1.0	17.8	312.0	611

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
10035065	41 G 1.0	22.4	508.0	969
10035067	2 X 1.5	8.6	53.2	134
10035068	3 G 1.5	9.0	69.1	155
10035069	3 X 1.5	9.0	69.1	155
10035070	4 G 1.5	9.8	85.8	186
10035071	5 G 1.5	10.5	102.8	215
10035072	7 G 1.5	11.4	134.2	269
10035073	12 G 1.5	15.0	232.8	445
10035074	18 G 1.5	17.4	327.8	610
10035075	25 G 1.5	20.4	463.2	843
10035089	3 G 2.5	10.5	102.8	220
10035090	4 G 2.5	11.4	129.4	265
10035091	5 G 2.5	12.7	157.5	322
10035092	7 G 2.5	14.0	223.0	422
10035093	12 G 2.5	17.9	360.5	659
10035094	4 G 4	13.6	207.6	390
10035095	5 G 4	14.9	251.5	463
10035096	7 G 4	16.2	333.9	588
10035097	4 G 6	15.8	294.8	516
10035098	5 G 6	17.3	356.1	616
10035099	7 G 6	18.8	479.3	792
10035380	4 G 10	19.1	461.1	789
10035381	5 G 10	21.4	586.6	998
10035382	4 G 16	22.3	727.6	1154
10035383	5 G 16	24.5	888.7	1389
10035384	4 G 25	27.0	1,123.9	1807
10035386	4 G 35	30.4	1,529.2	2321
0035388	4 G 50	36.5	2,162.0	3741
0035390	4 G 70	41.6	2,973.0	5054
0035392	4 G 95	47.9	3,966.0	6427

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Single lengths for sizes: ≥ 4G50 max. 500 m
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 135 CH refer to page 58
- ÖLFLEX® CLASSIC 135 CH BK 0,6/1kV refer to page 60

Accessories

- SKINTOP® MS-M BRUSH refer to page 669
- SKINTOP® ST-HF-M refer to page 656

ÖLFLEX® 120 H



Info

- Flexible at temperatures down to -25 °C
- Other sizes on request



Application range

- Public buildings
- Airport, railway station
- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Particularly where human and animal life as well as valuable property are exposed to high risk of fire hazards

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)
- Flexible down to -25°C

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Outer sheath made of special halogen-free compound, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
HD 21.13 S1; VDE 0281 Part 13
- Specific insulation resistance**
> 10 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -25°C to +70°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 120 H U₀/U: 300/500 V				
1021902	2 X 1.5	6.3	29.0	63
1021303	3 G 1.5	6.7	43.0	79
1021304	4 G 1.5	7.2	58.0	98
1021305	5 G 1.5	8.1	72.0	120
1021307	7 G 1.5	8.9	101.0	158
1021312	12 G 1.5	12.0	173.0	265
1021318	18 G 1.5	14.4	259.0	388
1021325	25 G 1.5	16.9	360.0	535
1021403	3 G 2.5	8.1	72.0	124
1021404	4 G 2.5	8.9	96.0	154
1021405	5 G 2.5	10.0	120.0	189
1021407	7 G 2.5	11.1	168.0	254
1021412	12 G 2.5	14.8	288.0	425
1021504	4 G 4	10.8	154.0	236
1021604	4 G 6	13.0	230.0	350

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 110 H refer to page 53
- ÖLFLEX® CLASSIC 130 H refer to page 57
- ÖLFLEX® CLASSIC 130 H BK 0,6/1kV refer to page 59

Accessories

- SKINTOP® ST-HF-M refer to page 656

ÖLFLEX® 120 CH



Info

- Flexible at temperatures down to -25 °C
- EMC-compliant
- Other sizes on request

Application range

- Public buildings
- Airport, railway station
- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Particularly where human and animal life as well as valuable property are exposed to high risk of fire hazards
- In EMC-sensitive environments (electromagnetic compatibility)

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)
- Flexible down to -25 °C
- High degree of screening
low transfer impedance
(max. 250 Ω/km at 30 MHz)

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Halogen-free inner sheath, grey
- Tinned-copper braiding
- Outer sheath made of special halogen-free compound, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
HD 21.13 S1; VDE 0281 Part 13
- Specific insulation resistance**
> 10 GΩm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -25°C to +70°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 120 CH U₀/U: 300/500 V				
1022902	2 X 1.5	8.5	65.0	113
1022303	3 G 1.5	8.9	83.0	131
1022304	4 G 1.5	9.6	100.0	158
1022305	5 G 1.5	10.3	125.0	182
1022307	7 G 1.5	11.3	196.0	230
1022312	12 G 1.5	14.8	280.0	383
1022318	18 G 1.5	17.2	389.0	525
1022325	25 G 1.5	20.1	535.0	727
1022403	3 G 2.5	10.3	146.0	186
1022404	4 G 2.5	11.3	167.0	226
1022405	5 G 2.5	12.6	200.0	275
1022407	7 G 2.5	13.9	288.0	361
1022504	4 G 4	13.4	237.0	337
1022604	4 G 6	15.8	318.0	474

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 110 CH refer to page 54
- ÖLFLEX® CLASSIC 135 CH refer to page 58
- ÖLFLEX® CLASSIC 135 CH BK 0,6/1kV refer to page 60

Accessories

- SKINTOP® CLICK refer to page 654
- SKINTOP® MS-SC-M refer to page 668

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® CLASSIC 130 H
VDE-tested characteristics

Info

- VDE-certified



Application range

- Public buildings
- Airport, railway station
- Plant engineering
Industrial machinery
Heating and air-conditioning systems
Stage applications
- Particularly where human and animal life as well as valuable property are exposed to high risk of fire hazards

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)
- Low smoke density according to IEC 61034

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Outer sheath made of special halogen-free compound, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
VDE 0281 Part 14
- Specific insulation resistance**
> 10 MOhm x km
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -15°C to +70°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 130 H				
1123000	2 X 0.5	5.1	9.6	36
1123001	3 G 0.5	5.4	14.4	42
1123002	3 X 0.5	5.4	14.4	42
1123003	4 G 0.5	5.8	19.2	55
1123004	4 X 0.5	5.8	19.2	55
1123005	5 G 0.5	6.3	24.0	65
1123006	5 X 0.5	6.3	24.0	65
1123008	7 G 0.5	6.9	33.6	80
1123009	7 X 0.5	6.9	33.6	80
1123010	8 G 0.5	8.2	38.4	103
1123012	10 G 0.5	8.8	48.0	112
1123013	12 G 0.5	9.1	57.6	128
1123017	18 G 0.5	10.8	86.4	189
1123020	25 G 0.5	12.7	120.0	260
1123021	30 G 0.5	13.6	144.0	294
1123032	2 X 0.75	5.5	14.4	47
1123033	3 G 0.75	5.8	21.6	56
1123034	3 X 0.75	5.8	21.6	56
1123035	4 G 0.75	6.3	28.8	69
1123036	4 X 0.75	6.3	28.8	69
1123037	5 G 0.75	6.9	36.0	83
1123038	5 X 0.75	6.9	36.0	83
1123041	7 G 0.75	7.5	50.4	104
1123042	7 X 0.75	7.5	50.4	104
1123046	10 G 0.75	9.8	72.0	149
1123047	12 G 0.75	10.1	86.4	172
1123048	12 X 0.75	10.1	86.4	172
1123051	18 G 0.75	12.0	129.6	252
1123054	25 G 0.75	14.1	180.0	352
1123056	34 G 0.75	16.3	244.8	466
1123066	2 X 1.0	5.8	19.2	55
1123067	3 G 1.0	6.1	28.8	67
1123068	3 X 1.0	6.1	28.8	67
1123069	4 G 1.0	6.6	38.4	83
1123070	4 X 1.0	6.6	38.4	83
1123071	5 G 1.0	7.3	48.0	100
1123072	5 X 1.0	7.3	48.0	100
1123074	7 G 1.0	8.1	67.2	130
1123075	7 X 1.0	8.1	67.2	130
1123076	8 G 1.0	9.7	76.8	164
1123078	10 G 1.0	10.4	96.0	183
1123080	12 G 1.0	10.7	115.2	212

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1123081	12 X 1.0	10.7	115.2	212
1123083	16 G 1.0	12.1	153.6	275
1123084	18 G 1.0	12.9	172.8	314
1123090	25 G 1.0	15.0	240.0	429
1123094	34 G 1.0	17.5	326.4	570
1123106	2 X 1.5	6.4	28.8	72
1123107	3 G 1.5	6.8	43.2	88
1123108	3 X 1.5	6.8	43.2	88
1123109	4 G 1.5	7.4	57.6	110
1123110	4 X 1.5	7.4	57.6	110
1123111	5 G 1.5	8.3	72.0	135
1123112	5 X 1.5	8.3	72.0	135
1123114	7 G 1.5	9.0	100.8	174
1123115	7 X 1.5	9.0	100.8	174
1123116	8 G 1.5	10.8	115.2	223
1123118	10 G 1.5	11.8	144.0	250
1123120	12 G 1.5	12.2	172.8	289
1123124	18 G 1.5	14.6	259.2	433
1123128	25 G 1.5	17.2	360.0	596
1123130	34 G 1.5	19.8	489.6	786
1123139	2 X 2.5	7.6	48.0	110
1123140	3 G 2.5	8.3	72.0	137
1123142	4 G 2.5	9.0	96.0	174
1123144	5 G 2.5	10.1	120.0	217
1123146	7 G 2.5	11.2	168.0	283
1123149	12 G 2.5	15.1	288.0	467
1123151	18 G 2.5	18.0	432.0	696
1123153	25 G 2.5	21.1	600.0	969
1123159	3 G 4	9.8	115.2	213
1123160	4 G 4	10.8	153.6	267
1123161	5 G 4	12.1	192.0	331
1123162	7 G 4	13.4	268.8	432
1123166	3 G 6	11.7	172.8	303
1123167	4 G 6	13.0	230.4	388
1123168	5 G 6	14.5	288.0	480
1123169	7 G 6	16.0	403.2	626
1123172	4 G 10	16.2	384.0	601
1123173	5 G 10	18.1	480.0	735
1123177	4 G 16	18.8	614.4	917
1123178	5 G 16	21.2	768.0	1148
1123181	4 G 25	23.5	960.0	1418
1123182	5 G 25	26.4	1,200.0	1769
1123185	4 G 35	26.6	1,344.0	1905

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 130 H BK 0,6/1kV refer to page 59
- ÖLFLEX® CLASSIC 110 H refer to page 53

Accessories

- SKINTOP® ST-HF-M refer to page 656

ÖLFLEX® CLASSIC 135 CH

VDE-tested characteristics

LAPP KABEL STUTTGART ÖLFLEX® CLASSIC 135 CH
IEC 60332.3 HALOGENFREE RoHS CE



Info

- VDE-certified
- EMC-compliant

Application range

- Public buildings
- Airport, railway station
- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Particularly where human and animal life as well as valuable property are exposed to high risk of fire hazards
- In EMC-sensitive environments (electromagnetic compatibility)

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)
- Low smoke density according to IEC 61034

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Halogen-free plastic foil wrapping
- Tinned-copper braiding
- Outer sheath made of special halogen-free compound, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
VDE 0281 Part 14
- Specific insulation resistance**
> 10 MOhm x km
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
Core/core: 4000 V
Core/screen: 2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -15°C to +70°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 135 CH				
1123200	2 X 0.5	5.9	36.0	51
1123201	3 G 0.5	6.2	43.0	61
1123202	3 X 0.5	6.2	43.0	61
1123203	4 G 0.5	6.6	49.0	72
1123204	4 X 0.5	6.6	49.0	72
1123205	5 G 0.5	7.1	57.0	85
1123206	5 X 0.5	7.1	57.0	85
1123208	7 G 0.5	7.7	69.0	103
1123209	7 X 0.5	7.7	69.0	103
1123213	12 G 0.5	10.1	104.0	165
1123217	18 G 0.5	11.8	141.0	236
1123220	25 G 0.5	13.7	224.0	324
1123232	2 X 0.75	6.3	43.0	60
1123233	3 G 0.75	6.6	52.0	77
1123234	3 X 0.75	6.6	52.0	77
1123235	4 G 0.75	7.1	61.0	87
1123236	4 X 0.75	7.1	61.0	87
1123237	5 G 0.75	7.9	72.0	106
1123238	5 X 0.75	7.9	72.0	106
1123241	7 G 0.75	8.5	89.0	129
1123242	7 X 0.75	8.5	89.0	129
1123247	12 G 0.75	11.1	138.0	211
1123248	12 X 0.75	11.1	138.0	211
1123251	18 G 0.75	13.0	211.0	307
1123254	25 G 0.75	15.1	280.0	413
1123266	2 X 1.0	6.6	51.0	79
1123267	3 G 1.0	6.9	62.0	88
1123268	3 X 1.0	6.9	62.0	88
1123269	4 G 1.0	7.4	74.0	106
1123270	4 X 1.0	7.4	74.0	106
1123271	5 G 1.0	8.3	88.0	124
1123272	5 X 1.0	8.3	88.0	124
1123274	7 G 1.0	8.9	112.0	155
1123275	7 X 1.0	8.9	112.0	155
1123280	12 G 1.0	11.7	185.0	250
1123281	12 X 1.0	11.7	185.0	250

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1123284	18 G 1.0	14.1	268.0	368
1123290	25 G 1.0	16.2	354.0	493
1123291	25 X 1.0	16.2	354.0	493
1123306	2 X 1.5	7.2	65.0	91
1123307	3 G 1.5	7.6	82.0	112
1123308	3 X 1.5	7.6	82.0	112
1123309	4 G 1.5	8.4	100.0	141
1123310	4 X 1.5	8.4	100.0	141
1123311	5 G 1.5	9.1	119.0	161
1123312	5 X 1.5	9.1	119.0	161
1123314	7 G 1.5	10.0	154.0	206
1123315	7 X 1.5	10.0	154.0	206
1123320	12 G 1.5	13.4	268.0	355
1123324	18 G 1.5	15.8	373.0	517
1123328	25 G 1.5	18.2	530.0	705
1123339	2 X 2.5	8.6	96.0	128
1123340	3 G 2.5	9.1	118.0	157
1123342	4 G 2.5	10.0	147.0	201
1123344	5 G 2.5	11.1	176.0	248
1123346	7 G 2.5	12.0	253.0	313
1123349	12 G 2.5	16.3	385.0	524
1123359	3 G 4	10.6	178.0	231
1123360	4 G 4	11.8	248.0	291
1123361	5 G 4	13.3	269.0	361
1123362	7 G 4	14.6	371.0	468
1123366	3 G 6	12.7	240.0	318
1123367	4 G 6	14.2	343.0	437
1123368	5 G 6	15.5	441.0	510
1123369	7 G 6	17.0	510.0	662
1123372	4 G 10	17.2	535.0	685
1123373	5 G 10	19.5	592.0	824
1123374	7 G 10	21.4	820.0	1067
1123377	4 G 16	20.2	736.0	1036
1123378	5 G 16	22.6	895.0	1285
1123381	4 G 25	25.1	1,129.0	1663
1123382	5 G 25	28.0	1,400.0	1976
1123385	4 G 35	28.2	1,546.0	2052

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 110 CH refer to page 54
- ÖLFLEX® CLASSIC 135 CH BK 0,6/1kV refer to page 60

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® ST-HF-M refer to page 656

ÖLFLEX® CLASSIC 130 H BK 0,6/1kV

VDE-tested characteristics



Info

- Colour-coded up to 5 cores
Numbered from 6 cores up
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396



Application range

- Public buildings
- Airport, railway station
- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Particularly where human and animal life as well as valuable property are exposed to high risk of fire hazards
- For outdoor applications

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)
- Low smoke density according to IEC 61034
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Outer sheath made of special halogen-free compound, black (RAL 9005)

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Based on**
HD 21.14 S1
VDE 0281 Part 14
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 600/1000 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -15°C to +70°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 130 H 0.6/1 kV - coloured cores				
1123410	2 X 1.0	8.6	19.2	107
1123411	3 G 1.0	9.0	28.8	123
1123412	4 G 1.0	9.6	38.4	144
1123413	5 G 1.0	10.4	48.0	167
ÖLFLEX® CLASSIC 130 H 0.6/1 kV - numbered cores				
1123414	7 G 1.0	11.1	67.2	206
1123415	12 G 1.0	14.0	115.2	314
1123416	18 G 1.0	16.1	172.8	428
1123417	25 G 1.0	18.6	240.0	569
ÖLFLEX® CLASSIC 130 H 0.6/1 kV - coloured cores				
1123418	2 X 1.5	9.6	28.8	137
1123419	3 G 1.5	10.1	43.2	161
1123420	4 G 1.5	10.8	57.6	190
1123421	5 G 1.5	11.7	72.0	221
ÖLFLEX® CLASSIC 130 H 0.6/1 kV - numbered cores				
1123422	7 G 1.5	12.6	100.8	276
1123423	12 G 1.5	16.1	172.8	427
1123424	18 G 1.5	18.8	259.2	596
1123425	25 G 1.5	21.7	360.0	799
ÖLFLEX® CLASSIC 130 H 0.6/1 kV - coloured cores				
1123426	2 X 2.5	10.8	48.0	184

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1123427	3 G 2.5	11.3	72.0	219
1123428	4 G 2.5	12.2	96.0	262
1123429	5 G 2.5	13.3	120.0	307
ÖLFLEX® CLASSIC 130 H 0.6/1 kV - numbered cores				
1123430	7 G 2.5	14.4	168.0	390
1123431	12 G 2.5	18.7	288.0	624
1123432	18 G 2.5	22.0	432.0	879
1123433	25 G 2.5	25.8	600.0	1212
ÖLFLEX® CLASSIC 130 H 0.6/1 kV - coloured cores				
1123434	3 G 4	12.6	115.2	290
1123435	4 G 4	13.7	153.6	351
1123436	5 G 4	14.9	192.0	416
1123437	3 G 6	13.9	172.8	377
1123438	4 G 6	15.1	230.4	463
1123439	5 G 6	16.8	288.0	559
1123440	4 G 10	18.7	384.0	757
1123441	5 G 10	20.7	480.0	915
1123442	4 G 16	21.3	614.4	1070
1123443	5 G 16	23.6	768.0	1296
1123444	4 G 25	26.2	960.0	1631

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 110 H refer to page 53
- ÖLFLEX® CLASSIC 130 H refer to page 57

Accessories

- SKINTOP® ST-HF-M refer to page 656

ÖLFLEX® CLASSIC 135 CH BK 0,6/1kV

VDE-tested characteristics



Info

- Colour-coded up to 5 cores
Numbered from 6 cores up
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396

Application range

- Public buildings
- Airport, railway station
- Plant engineering
Industrial machinery
Heating and air-conditioning systems
- Particularly where human and animal life as well as valuable property are exposed to high risk of fire hazards
- For outdoor applications

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)
- Low smoke density according to IEC 61034
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Halogen-free plastic foil wrapping
- Tinned-copper braiding
- Outer sheath made of special halogen-free compound, black (RAL 9005)

Technical data

Core identification code
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers

Based on
HD 21.14 S1
VDE 0281 Part 14

Specific insulation resistance
> 20 GΩm x cm

Conductor stranding
Fine wire according to VDE 0295, class 5/IEC 60228 class 5

Minimum bending radius
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter

Nominal voltage
U₀/U: 600/1000 V

Test voltage
Core/core: 4000 V
Core/screen: 2000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Occasional flexing: -15°C to +70°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 135 CH 0.6/1 kV - coloured cores				
1123460	2 X 1.0	9.4	39.5	120
1123461	3 G 1.0	9.8	51.0	140
1123462	4 G 1.0	10.4	62.8	165
1123463	5 G 1.0	11.2	76.0	191
ÖLFLEX® CLASSIC 135 CH 0.6/1 kV - numbered cores				
1123464	7 G 1.0	11.9	97.2	231
1123465	12 G 1.0	15.0	169.1	360
1123466	18 G 1.0	17.3	238.2	494
1123467	25 G 1.0	19.8	315.5	643
ÖLFLEX® CLASSIC 135 CH 0.6/1 kV - coloured cores				
1123468	2 X 1.5	10.4	53.2	149
1123469	3 G 1.5	10.9	69.5	177
1123470	4 G 1.5	11.6	86.5	209
1123471	5 G 1.5	12.5	104.3	243
ÖLFLEX® CLASSIC 135 CH 0.6/1 kV - numbered cores				
1123472	7 G 1.5	13.4	136.5	300
1123473	12 G 1.5	17.3	238.3	486
1123474	18 G 1.5	20.2	355.4	691
1123475	25 G 1.5	23.1	475.1	914
ÖLFLEX® CLASSIC 135 CH 0.6/1 kV - coloured cores				
1123476	2 X 2.5	11.6	79.4	197

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1123477	3 G 2.5	12.1	106.1	243
1123478	4 G 2.5	13.0	134.3	293
1123479	5 G 2.5	14.1	158.3	342
ÖLFLEX® CLASSIC 135 CH 0.6/1 kV - numbered cores				
1123480	7 G 2.5	15.4	225.0	462
1123481	12 G 2.5	20.1	383.6	718
1123482	18 G 2.5	23.4	548.9	1011
1123483	25 G 2.5	27.4	761.7	1370
ÖLFLEX® CLASSIC 135 CH 0.6/1 kV - coloured cores				
1123484	3 G 4	13.4	167.7	327
1123485	4 G 4	14.7	211.9	399
1123486	5 G 4	15.9	250.3	471
1123487	3 G 6	14.9	232.1	414
1123488	4 G 6	16.1	298.5	519
1123489	5 G 6	17.8	356.1	607
1123490	4 G 10	20.1	490.6	837
1123491	5 G 10	21.9	586.6	995
1123492	4 G 16	22.5	735.1	1157
1123493	5 G 16	25.0	888.7	1407
1123494	4 G 25	27.8	1,126.6	1683

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 110 CH refer to page 54
- ÖLFLEX® CLASSIC 135 CH refer to page 58

Accessories

- SKINTOP® MS-M BRUSH refer to page 669

ÖLFLEX® PETRO C HFFR

Chemically and mechanically robust cables for harsh environmental conditions - 0.6/1 kV



Info

- Oil and mud-resistant according to IEC 61892-4, Annex D
- Improved characteristics in the event of a fire:
 - Halogen-free - reduced toxic gases
 - Flame-retardant - no flame propagation
- UL/cUL approved for North America



Benefits

- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property
- The copper braiding serves as an electromagnetic screen and can also be used as armouring (Braid Armour)
- Can be used in many applications from different industries, as it has remarkable mechanical, thermal and chemical properties

Application range

- Onshore and offshore applications such as drilling rigs and drillships
- For electrical connection of drilling units, pumping stations, compressors, generators, emergency power supplies and emergency lighting in harsh environmental conditions

Product features

- Cable outer sheath material complies with the requirements for drilling fluids as per IEC 61892-4, Annex D
- Halogen-free and highly flame-retardant
- Excellent UV and abrasion-resistance
- Depending on the quantity, customised designs are also possible upon request

Approvals



- Oil-resistant according to NEK TS 606:2009
- Oil and mud-resistant according to IEC 61892-4, Annex D
- Fire behaviour:
 - Halogen-free (VDE 0472-815)
 - Flame-retardant (IEC 60332-1-2)
 - No fire propagation (IEC 60332-3-22 Cat. A)
- UV-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396
- Salt water-resistant according to UL 1309

Design

- Fine-wire, tinned-copper conductor
- Core insulation: polyolefin compound, LSZH
- Cores twisted in layers
- Inner sheath: halogen-free compound
- Tinned copper screen braiding
- Outer sheath made of robust special polymer
- Colour: black

Technical data

Core identification code
Colours according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers

Approvals
Single-core versions:
USA: UL AWM Style 10587
Canada: cUL AWM II A/B
Multi-core versions:
USA: UL AWM Style 20234
Canada: cUL AWM II A/B

Fire test
Flame-retardant according to IEC 60332-1-2, UL VW-1, Cable Flame Test, CSA FT 1
No flame-propagation according to IEC 60332-3-22 category A

Conductor stranding
Fine wire according to VDE 0295, class 5/ IEC 60228 class 5 from 0.5 mm²

Minimum bending radius
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter

Nominal voltage
IEC: U₀/U 600/1000 V / UL/cUL: 1000 V

Test voltage
4000 V

Temperature range
Occasional flexing: -40 °C to +90 °C
According to UL/AWM: -40 °C to +80 °C
Fixed installation: -50 °C to +90 °C
according to UL/AWM: -50 °C to +80 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® PETRO C HFFR black - single core				
0023249	1 X 70	19.3	737.0	948
0023250	1 X 95	21.6	1,002.0	1155
0023251	1 X 120	24.5	1,254.0	1463
0023248	1 X 150	26.1	1,553.0	1767
0023233	1 X 185	28.4	1,912.0	2349
0023234	1 X 240	32.6	2,475.0	2869
0023279	1 X 300	34.7	3,075.0	3817
ÖLFLEX® PETRO C HFFR black - multi-core				
0023275	3 G 0.5	10.1	36.0	140
0023274	2 X 1.0	10.5	41.0	149
0023252	2 X 1.5	11.5	57.0	183
0023253	3 G 1.5	12.0	72.0	212
0023254	4 G 1.5	12.8	90.0	249
0023255	5 G 1.5	14.0	115.0	307
0023256	7 G 1.5	15.9	151.0	401
0023239	12 G 1.5	18.8	238.0	573
0023257	18 G 1.5	22.3	350.0	846
0023240	25 G 1.5	26.6	490.0	1183
0023278	3 G 2.5	13.5	105.0	276
0023242	4 G 2.5	14.6	147.0	347
0023244	5 G 2.5	15.7	171.0	401
0023245	7 G 2.5	18.3	233.0	547
0023258	12 G 2.5	22.3	378.0	840

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0023260	4 G 4	16.2	212.0	457
0023266	5 G 4	17.6	250.0	540
0023261	4 G 6	17.7	288.0	558
0023268	5 G 6	19.9	367.0	710
0023280	4 G 10	22.3	474.0	882
0023272	5 G 10	24.3	582.0	1069
0023281	4 G 16	24.9	716.0	1208
0023269	5 G 16	27.6	881.0	1483
0023267	4 G 25	30.2	1,096.0	1785
0023270	5 G 25	33.4	1,371.0	2206
0023262	4 G 35	33.6	1,515.0	2314
0023282	5 G 35	37.1	1,875.0	2847
0023246	4 G 50	39.3	2,140.0	3264
0023271	5 G 50	43.4	2,620.0	4002
ÖLFLEX® PETRO C HFFR blue - multi-core				
0023276	3 G 0.5	10.1	36.0	140
0023273	2 X 1.0	10.5	41.0	147
0023263	2 X 1.5	11.5	57.0	183
0023283	3 G 1.5	12.0	72.0	212
0023237	4 G 1.5	12.8	90.0	249
0023284	5 G 1.5	14.0	115.0	307
0023238	7 G 1.5	15.9	151.0	401
0023264	12 G 1.5	18.8	238.0	573
0023265	25 G 1.5	26.6	490.0	1183

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Harsh conditions

High mechanical and chemical resistance

ÖLFLEX® ROBUST 200

Proven all-weather connection cables - resistant against a variety of chemical media

LAPP KABEL STUTTGART ÖLFLEX® ROBUST 200 CE



Info

- Excellent weather resistance
- High chemical resistance
- Voltage class 450/750 V

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for both indoor and outdoor applications
- Resistant to contact with plant, animal or synthetic-based organic oils, greases, waxes and the related emulsions
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning agents
- Well-suited to frequent steam cleaning

Application range

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- For indoor and outdoor use

Product features

- Halogen-free materials
- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Flexible down to -40°C
- Colour-coded up to 5 cores

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation made of modified PP
- Cores twisted in layers
- Outer sheath made of special TPE
- Sheath colour: black (RAL 9005)

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Based on**
HD 22.10 (VDE 0282 Part 10)
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 10 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 450/750 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -40 °C to +80 °C
Fixed installation: -50 °C to +80 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBUST 200				
0021800	2 X 1.0	8.0	19.2	65
0021801	3 G 1.0	8.4	29.0	79
0021802	4 G 1.0	9.2	38.4	96
0021803	5 G 1.0	10.0	48.0	113
0021805	2 X 1.5	8.6	29.0	78
0021806	3 G 1.5	9.1	43.0	97
0021807	4 G 1.5	9.9	58.0	122
0021808	5 G 1.5	10.8	72.0	146
0021809	7 G 1.5	13.5	101.0	208
0021810	2 X 2.5	9.8	48.0	114
0021811	3 G 2.5	10.4	72.0	144
0021812	4 G 2.5	11.5	96.0	181
0021813	5 G 2.5	13.1	120.0	222
0021814	7 G 2.5	15.9	168.0	312
0021816	3 G 4	12.4	115.2	215
0021817	4 G 4	14.0	154.0	273
0021818	5 G 4	15.8	192.0	333
0021822	4 G 6	15.7	230.0	378
0021823	5 G 6	17.2	288.0	463
0021825	4 G 10	19.4	384.0	570
0021826	5 G 10	21.4	480.0	770
0021828	4 G 16	22.4	614.0	885
0021829	5 G 16	24.6	768.0	1100
0021831	4 G 25	27.0	960.0	1365
0021833	4 G 35	29.7	1,344.0	1773
0021836	4 G 50	36.2	1,920.0	3454

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Single lengths for sizes: ≥ 4G16 max. 600 m; ≥ 4G25 max. 300 m; ≥ 4G50 max. 250 m
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBUST 210 refer to page 63
- ÖLFLEX® ROBUST 215 C refer to page 64

Accessories

- FLEXIMARK® Stainless steel kit refer to page 872
- SKINTOP® MS-M refer to page 662
- SKINTOP® ST-HF-M refer to page 656

ÖLFLEX® ROBUST 210

Proven all-weather control cables – resistant to a wide range of chemical media

LAPP KABEL STUTTGART ÖLFLEX® ROBUST 210 CE



Info

- Excellent weather resistance
- High chemical resistance
- Reduced outer diameter

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for both indoor and outdoor applications
- Resistant to contact with plant, animal or synthetic-based organic oils, greases, waxes and the related emulsions
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning agents
- Well-suited to frequent steam cleaning

Application range

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- For indoor and outdoor use

Product features

- Halogen-free materials
- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Flexible down to -40°C
- Number-coded cores

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation made of modified PP
- Cores twisted in layers
- Outer sheath made of special TPE
- Sheath colour: black (RAL 9005)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
VDE 0250/0281
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -40 °C to +80 °C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBUST 210				
0021880	2 X 0.5	4.9	10.0	27
0021881	3 G 0.5	5.2	15.0	33
0021882	3 X 0.5	5.2	15.0	33
0021883	4 G 0.5	5.8	19.2	41
0021884	4 X 0.5	5.8	19.2	41
0021885	5 G 0.5	6.3	24.0	49
0021886	5 X 0.5	6.3	24.0	49
0021888	7 G 0.5	6.9	33.6	64
0021889	7 X 0.5	6.9	33.6	64
0021890	10 G 0.5	8.8	48.0	92
0021891	12 G 0.5	9.1	58.0	106
0021892	18 G 0.5	10.8	86.4	151
0021893	25 G 0.5	12.7	120.0	210
0021897	2 X 0.75	5.5	14.4	35
0021898	3 G 0.75	5.8	21.6	43
0021899	3 X 0.75	5.8	21.6	43
0021900	4 G 0.75	6.3	28.8	49
0021901	4 X 0.75	6.3	28.8	49
0021902	5 G 0.75	6.9	36.0	66
0021903	5 X 0.75	6.9	36.0	66
0021904	7 G 0.75	7.5	50.0	85
0021905	7 X 0.75	7.5	50.0	85
0021907	12 G 0.75	10.1	86.0	144
0021908	18 G 0.75	12.0	130.0	208
0021909	25 G 0.75	14.1	180.0	288
0021910	34 G 0.75	16.3	245.0	386
0021911	41 G 0.75	17.8	296.0	464
0021912	50 G 0.75	19.6	360.0	560
0021913	2 X 1.0	5.8	19.2	42
0021914	3 G 1.0	6.1	28.8	49
0021915	3 X 1.0	6.1	28.8	49
0021916	4 G 1.0	6.6	38.4	63
0021917	4 X 1.0	6.6	38.4	63
0021918	5 G 1.0	7.3	48.0	78
0021919	5 X 1.0	7.3	48.0	78
0021920	7 G 1.0	8.1	67.0	107
0021921	10 G 1.0	10.4	96.0	154

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0021922	12 G 1.0	10.7	115.0	178
0021923	18 G 1.0	12.9	173.0	262
0021924	25 G 1.0	15.0	240.0	357
0021925	34 G 1.0	17.5	326.0	484
0021926	41 G 1.0	19.2	394.0	582
0021927	50 G 1.0	21.0	480.0	703
0021928	2 X 1.5	6.4	29.0	56
0021929	3 G 1.5	6.8	43.0	72
0021930	3 X 1.5	6.8	43.0	72
0021931	4 G 1.5	7.4	58.0	91
0021932	4 X 1.5	7.4	58.0	91
0021933	5 G 1.5	8.3	72.0	108
0021934	5 X 1.5	8.3	72.0	108
0021936	7 G 1.5	9.0	101.0	149
0021937	7 X 1.5	9.0	101.0	149
0021938	10 G 1.5	11.8	143.0	215
0021940	12 G 1.5	12.2	173.0	234
0021941	18 G 1.5	14.6	259.0	369
0021942	25 G 1.5	17.2	360.0	510
0021943	34 G 1.5	19.8	490.0	683
0021945	50 G 1.5	24.0	720.0	999
0021946	2 X 2.5	7.6	48.0	86
0021947	3 G 2.5	8.3	72.0	115
0021949	4 G 2.5	9.0	96.0	131
0021951	5 G 2.5	10.1	120.0	178
0021953	7 G 2.5	11.2	168.0	241
0021954	12 G 2.5	15.1	288.0	405
0021963	3 G 4	10.1	115.0	180
0021964	4 G 4	11.1	157.0	228
0021965	5 G 4	12.4	192.0	280
0021966	7 G 4	13.6	269.0	377
0021967	4 G 6	13.3	230.0	332
0021968	5 G 6	14.8	288.0	407
0021969	4 G 10	16.5	384.0	541
0021970	5 G 10	18.4	480.0	620
0021971	4 G 16	18.8	614.4	806
0021972	4 G 25	23.5	960.0	1218
0021973	4 G 35	26.4	1,344.0	1658

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Single lengths for sizes: ≥ 4G16 max. 600 m; ≥ 4G25 max. 300 m; ≥ 4G50 max. 250 m
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBUST 200 refer to page 62
- ÖLFLEX® ROBUST 215 C refer to page 64

Accessories

- FLEXIMARK® Stainless steel kit refer to page 872
- SKINTOP® MS-M refer to page 662
- SKINTOP® ST-HF-M refer to page 656

Harsh conditions

High mechanical and chemical resistance

ÖLFLEX® ROBUST 215 C

Proven all-weather control cables – resistant to a wide range of chemical media

LAPP KABEL STUTTGART ÖLFLEX® ROBUST 215 C CE



Info

- Excellent weather resistance
- High chemical resistance
- EMC compliant copper screening

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for both indoor and outdoor applications
- Resistant to contact with plant, animal or synthetic-based organic oils, greases, waxes and the related emulsions
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning agents
- Well-suited to frequent steam cleaning

Application range

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- For indoor and outdoor use
- In EMC-sensitive environments (electromagnetic compatibility)

Product features

- Halogen-free materials
- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Flexible down to -40°C
- Number-coded cores

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation made of modified PP
- Cores twisted in layers
- Halogen-free plastic foil wrapping
- Tinned copper screen braiding
- Outer sheath made of special TPE
- Sheath colour: black (RAL 9005)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
VDE 0250/0281
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
Core/core: 4000 V
Core/screen: 2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -40 °C to +80 °C
Fixed installation: -50 °C to +80 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBUST 215 C				
0022700	2 X 0.5	5.9	36.0	42
0022701	3 G 0.5	6.2	43.0	52
0022702	3 X 0.5	6.2	43.0	52
0022703	4 G 0.5	6.6	49.0	59
0022704	4 X 0.5	6.6	49.0	59
0022705	5 G 0.5	7.1	57.0	68
0022706	5 X 0.5	7.1	57.0	68
0022708	7 G 0.5	7.7	69.0	85
0022709	7 X 0.5	7.7	69.0	85
0022711	12 G 0.5	10.1	104.0	136
0022712	18 G 0.5	11.8	141.0	189
0022713	25 G 0.5	13.7	211.0	265
0022717	2 X 0.75	6.3	43.0	50
0022718	3 G 0.75	6.6	52.0	60
0022719	3 X 0.75	6.6	52.0	60
0022720	4 G 0.75	7.1	61.0	72
0022721	4 X 0.75	7.1	61.0	72
0022722	5 G 0.75	7.9	72.0	88
0022723	5 X 0.75	7.9	72.0	88
0022724	7 G 0.75	8.5	89.0	110
0022725	7 X 0.75	8.5	89.0	110
0022727	12 G 0.75	11.1	138.0	177
0022728	18 G 0.75	13.0	211.0	247
0022729	25 G 0.75	15.1	280.0	347
0022730	34 G 0.75	17.5	380.0	460
0022733	2 X 1.0	6.6	51.0	60
0022734	3 G 1.0	6.9	62.0	70
0022735	3 X 1.0	6.9	62.0	70
0022736	4 G 1.0	7.4	74.0	85

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0022737	4 X 1.0	7.4	74.0	85
0022738	5 G 1.0	8.3	88.0	103
0022739	5 X 1.0	8.3	88.0	103
0022740	7 G 1.0	8.9	112.0	131
0022742	12 G 1.0	11.7	185.0	213
0022743	18 G 1.0	14.1	268.0	321
0022744	25 G 1.0	16.2	354.0	425
0022748	2 X 1.5	7.2	65.0	71
0022749	3 G 1.5	7.6	82.0	90
0022750	3 X 1.5	7.6	82.0	90
0022751	4 G 1.5	8.4	100.0	114
0022752	4 X 1.5	8.4	100.0	114
0022753	5 G 1.5	9.1	119.0	136
0022754	5 X 1.5	9.1	119.0	136
0022756	7 G 1.5	10.0	154.0	177
0022757	7 X 1.5	10.0	154.0	177
0022760	12 G 1.5	13.4	268.0	290
0022761	18 G 1.5	15.8	373.0	435
0022762	25 G 1.5	18.2	530.0	579
0022763	34 G 1.5	21.2	683.0	797
0022767	3 G 2.5	9.1	118.0	134
0022768	4 G 2.5	10.0	147.0	169
0022769	5 G 2.5	11.1	176.0	207
0022770	7 G 2.5	12.0	253.0	270
0022774	4 G 4	11.9	190.0	258
0022776	4 G 6	14.5	290.0	392
0022777	4 G 10	17.5	458.0	602
0022778	4 G 16	20.2	736.6	928
0022771	4 G 25	25.1	1,126.7	1411
0022780	4 G 35	28.0	1,540.0	1883

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Single lengths for sizes: ≥ 4G 16 max. 600 m; ≥ 4G25 max. 300 m; ≥ 4G50 max. 250 m
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 135 CH BK 0,6/1kV refer to page 60

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-M BRUSH refer to page 669

ÖLFLEX® CLASSIC 400 P

Abrasion-resistant control cables with PUR sheath for increased application requirements



Info

- High mechanical strength
- Good oil resistance

Benefits

- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Also available as DESINA® compliant power cable with black outer sheath colour

Application range

- Machine tools
- Industrial machinery
- Measurement, control and electrical applications
- Outdoor use is possible within the indicated operating temperature range
- Very suitable for oily wet areas within machinery and production lines that are subject to normal mechanical stress

Product features

- High oil-resistance
- Abrasion and notch-resistant
- Low-adhesive surface
- Resistant to hydrolysis and microbes

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: special PVC
- Cores twisted in layers
- Special polyurethane outer sheath (PUR)
- Sheath colour: silver grey (RAL 7001)
- DESINA®-compliant: black (RAL 9005)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
Based on VDE 0281 und 0282
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Flexible use: 12.5 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 400 P - sheath colour: grey				
1312802	2 X 0.5	4.8	10.0	32
1312003	3 G 0.5	5.1	15.0	43
1312803	3 X 0.5	5.1	15.0	43
1312004	4 G 0.5	5.7	19.2	50
1312804	4 X 0.5	5.7	19.2	50
1312005	5 G 0.5	6.2	24.0	59
1312805	5 X 0.5	6.2	24.0	59
1312007	7 G 0.5	6.7	34.0	73
1312807	7 X 0.5	6.7	34.0	73
1312010	10 G 0.5	8.6	48.0	109
1312012	12 G 0.5	8.9	57.6	125
1312018	18 G 0.5	10.5	87.0	180
1312025	25 G 0.5	12.4	120.0	250
1312034	34 G 0.5	14.3	164.0	333
1312041	41 G 0.5	15.7	197.0	400
1312852	2 X 0.75	5.4	14.4	41
1312103	3 G 0.75	5.7	21.6	51
1312853	3 X 0.75	5.7	21.6	51
1312104	4 G 0.75	6.2	28.8	62
1312854	4 X 0.75	6.2	28.8	62
1312105	5 G 0.75	6.7	36.0	74
1312855	5 X 0.75	6.7	36.0	74
1312107	7 G 0.75	7.3	50.0	97
1312857	7 X 0.75	7.3	50.0	97
1312110	10 G 0.75	9.6	72.0	142
1312112	12 G 0.75	9.9	86.4	163
1312118	18 G 0.75	11.7	129.6	234
1312125	25 G 0.75	13.8	180.0	324
1312134	34 G 0.75	15.9	244.8	431
1312141	41 G 0.75	17.4	295.2	529
1312902	2 X 1.0	5.7	19.2	48
1312203	3 G 1.0	6.0	28.8	61
1312903	3 X 1.0	6.0	28.8	61
1312204	4 G 1.0	6.5	38.4	74
1312904	4 X 1.0	6.5	38.4	74
1312205	5 G 1.0	7.1	48.0	89
1312905	5 X 1.0	7.1	48.0	89
1312207	7 G 1.0	8.0	67.0	116
1312210	10 G 1.0	10.2	96.0	171
1312212	12 G 1.0	10.5	115.0	197
1312218	18 G 1.0	12.7	173.0	289

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1312225	25 G 1.0	14.7	240.0	412
1312234	34 G 1.0	17.1	326.4	532
1312241	41 G 1.0	18.8	393.6	638
1312952	2 X 1.5	6.3	29.0	63
1312303	3 G 1.5	6.7	43.0	79
1312953	3 X 1.5	6.7	43.0	79
1312304	4 G 1.5	7.2	58.0	98
1312954	4 X 1.5	7.2	58.0	98
1312305	5 G 1.5	8.1	72.0	121
1312955	5 X 1.5	8.1	72.0	121
1312307	7 G 1.5	8.9	101.0	159
1312957	7 X 1.5	8.9	101.0	159
1312312	12 G 1.5	12.0	173.0	268
1312318	18 G 1.5	13.4	259.5	392
1312325	25 G 1.5	16.9	360.0	531
1312334	34 G 1.5	19.4	489.6	722
1312341	41 G 1.5	21.3	590.4	867
1312403	3 G 2.5	8.1	72.0	132
1312404	4 G 2.5	8.9	96.0	163
1312405	5 G 2.5	10.0	120.0	186
1312407	7 G 2.5	11.1	168.0	267
1312412	12 G 2.5	14.8	288.0	445
1312504	4 G 4	10.8	154.0	237
1312505	5 G 4	12.1	192.0	291
1312507	7 G 4	13.4	269.0	391
1312604	4 G 6	13.0	230.4	327
1312605	5 G 6	14.5	288.0	424
1312607	7 G 6	16.0	403.0	580
1312614	4 G 10	16.2	384.0	567
1312615	5 G 10	18.1	480.0	695
1312617	7 G 10	20.0	672.0	937
1312624	4 G 16	18.8	614.4	1064
ÖLFLEX® CLASSIC 400 P DESINA - sheath colour: black				
1312970	4 G 1.5	7.2	58.0	98
1312981	7 G 1.5	8.8	101.0	159
1312983	11 G 1.5	11.6	158.0	228
1312973	4 G 2.5	8.9	96.0	163
1312974	4 G 4	10.8	154.0	237
1312975	4 G 6	13.0	230.4	350
1312976	4 G 10	16.2	384.0	567
1312978	4 G 25	23.5	960.0	1582

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 DESINA® is a registered trademark of the German Machine Tool Builders' Association
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® 440 P refer to page 68
- ÖLFLEX® 491 P refer to page 70

Accessories

- SKINTOP® cable glands plastic metric refer to page 652

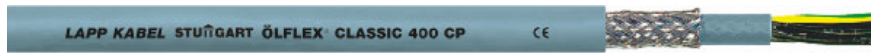
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Harsh conditions

High mechanical and chemical resistance

ÖLFLEX® CLASSIC 400 CP

Screened and abrasion-resistant control cables with PUR sheath for increased application requirements



Info

- High mechanical strength
- Good oil resistance
- EMC compliant copper screening

Benefits

- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Copper braiding screens the cable against electromagnetic interference

Application range

- Machine tools
- Industrial machinery
- Measurement, control and electrical applications
- Very suitable for oily wet areas within machinery and production lines that are subject to normal mechanical stress
- Outdoor use is possible within the indicated operating temperature range

Product features

- High oil-resistance
- Abrasion and notch-resistant
- EMC-compliant
- Low-adhesive surface
- Resistant to hydrolysis and microbes

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: special PVC
- Cores twisted in layers
- PVC inner sheath, grey
- Tinned-copper braiding
- Special polyurethane outer sheath (PUR)
- Sheath colour: silver grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
Based on VDE 0281 und 0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 400 CP				
1313852	2 X 0.75	7.4	45.0	85
1313103	3 G 0.75	7.9	52.0	99
1313853	3 X 0.75	7.9	52.0	99
1313104	4 G 0.75	8.4	77.0	114
1313854	4 X 0.75	8.4	77.0	114
1313105	5 G 0.75	8.9	84.0	130
1313855	5 X 0.75	8.9	84.0	130
1313107	7 G 0.75	9.7	92.0	161
1313857	7 X 0.75	9.7	92.0	161
1313112	12 G 0.75	12.3	138.0	245
1313118	18 G 0.75	14.5	219.0	354
1313125	25 G 0.75	16.6	277.0	463
1313134	34 G 0.75	18.9	420.0	598
1313141	41 G 0.75	20.6	500.0	725
1313902	2 X 1.0	7.9	50.0	97
1313203	3 G 1.0	8.2	77.0	111
1313903	3 X 1.0	8.2	77.0	111
1313204	4 G 1.0	8.7	87.0	129
1313904	4 X 1.0	8.7	87.0	129
1313205	5 G 1.0	9.5	90.0	152
1313207	7 G 1.0	10.2	110.0	184
1313212	12 G 1.0	13.3	194.0	306
1313218	18 G 1.0	15.5	267.0	417
1313225	25 G 1.0	17.5	379.0	541
1313234	34 G 1.0	20.3	516.0	735

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1313241	41 G 1.0	22.0	610.0	860
1313952	2 X 1.5	8.5	77.0	116
1313303	3 G 1.5	8.9	85.0	135
1313953	3 X 1.5	8.9	85.0	135
1313304	4 G 1.5	9.6	100.0	162
1313954	4 X 1.5	9.6	100.0	162
1313305	5 G 1.5	10.3	120.0	187
1313955	5 X 1.5	10.3	120.0	187
1313307	7 G 1.5	11.3	152.0	236
1313957	7 X 1.5	11.3	152.0	236
1313312	12 G 1.5	14.8	267.0	392
1313318	18 G 1.5	17.2	400.0	536
1313325	25 G 1.5	20.1	572.0	742
1313334	34 G 1.5	21.9	754.0	960
1313341	41 G 1.5	24.7	874.0	1118
1313403	3 G 2.5	10.3	121.0	191
1313404	4 G 2.5	11.3	163.0	232
1313405	5 G 2.5	12.6	199.0	282
1313407	7 G 2.5	13.9	261.0	370
1313412	12 G 2.5	17.2	470.0	580
1313504	4 G 4	13.4	238.0	345
1313505	5 G 4	14.7	279.0	412
1313604	4 G 6	15.8	318.0	483
1313605	5 G 6	17.3	370.0	576
1313614	4 G 10	19.0	558.0	733
1313624	4 G 16	22.2	804.0	1340

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 DESINA® is a registered trademark of the German Machine Tool Builders' Association
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 415 CP refer to page 67
- ÖLFLEX® 440 CP refer to page 69

Accessories

- Conductor end sleeves refer to page 909
- SKINTOP® MS-SC-M refer to page 668

ÖLFLEX® CLASSIC 415 CP

Abrasion-resistant, screened PUR control cables with reduced outer diameters



Info

- Thin and light, without inner sheath
- EMC compliant copper screening



Benefits

- Space- and weight-saving application due to thin cable diameters
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Copper braiding screens the cable against electromagnetic interference

Application range

- Machine tools
- Industrial machinery
- Measurement, control and electrical applications
- Very suitable for oily wet areas within machinery and production lines that are subject to normal mechanical stress
- Outdoor use is possible within the indicated operating temperature range

Product features

- High oil-resistance
- Abrasion and notch-resistant
- EMC-compliant
- Low-adhesive surface
- Resistant to hydrolysis and microbes

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: special PVC
- Cores twisted in layers
- Plastic foil wrapping
- Tinned-copper braiding
- Special polyurethane outer sheath (PUR)
- Sheath colour: silver grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
Core in accordance with VDE 0812/0281
Outer sheath in accordance with VDE 0250/0282
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
Core/core: 4000 V
Core/screen: 2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 415 CP				
1314000	2 X 0.5	5.8	36.0	45
1314001	3 G 0.5	6.1	43.0	59
1314002	3 X 0.5	6.1	43.0	59
1314003	4 G 0.5	6.5	49.0	83
1314004	4 X 0.5	6.5	49.0	83
1314005	5 G 0.5	7.0	57.0	96
1314006	5 X 0.5	7.0	57.0	96
1314007	7 G 0.5	7.5	69.0	136
1314008	7 X 0.5	7.5	69.0	136
1314010	12 G 0.5	9.9	104.0	200
1314011	12 X 0.5	9.9	104.0	200
1314012	18 G 0.5	11.5	141.0	275
1314013	18 X 0.5	11.5	141.0	275
1314014	25 G 0.5	13.4	211.0	350
1314015	25 X 0.5	13.4	211.0	350
1314017	2 X 0.75	6.2	43.0	56
1314018	3 G 0.75	6.5	52.0	70
1314019	3 X 0.75	6.5	52.0	70
1314020	4 G 0.75	7.0	61.0	95
1314021	4 X 0.75	7.0	61.0	95
1314022	5 G 0.75	7.7	72.0	130
1314023	5 X 0.75	7.7	72.0	130
1314024	7 G 0.75	8.3	89.0	168
1314025	7 X 0.75	8.3	89.0	168
1314026	12 G 0.75	10.9	138.0	232
1314027	18 G 0.75	12.7	211.0	315
1314028	25 G 0.75	14.8	280.0	435
1314029	25 X 0.75	14.8	280.0	435
1314032	2 X 1.0	6.5	51.0	84
1314033	3 G 1.0	6.8	62.0	110
1314034	3 X 1.0	6.8	62.0	110
1314035	4 G 1.0	7.3	74.0	130
1314036	4 X 1.0	7.3	74.0	130
1314037	5 G 1.0	8.1	88.0	156

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1314038	5 X 1.0	8.1	88.0	156
1314039	7 G 1.0	8.8	112.0	192
1314040	7 X 1.0	8.8	112.0	192
1314041	12 G 1.0	11.5	185.0	285
1314042	18 G 1.0	13.9	268.0	395
1314043	25 G 1.0	15.9	354.0	656
1314046	2 X 1.5	7.1	65.0	97
1314047	3 G 1.5	7.5	82.0	125
1314048	3 X 1.5	7.5	82.0	125
1314049	4 G 1.5	8.2	100.0	165
1314050	4 X 1.5	8.2	100.0	165
1314051	5 G 1.5	8.9	119.0	193
1314052	5 X 1.5	8.9	119.0	193
1314053	7 G 1.5	9.9	154.0	245
1314054	7 X 1.5	9.9	154.0	245
1314055	12 G 1.5	13.0	268.0	365
1314056	18 G 1.5	15.6	373.0	553
1314057	25 G 1.5	17.9	530.0	734
1314058	34 G 1.5	20.8	683.0	944
1314061	3 G 2.5	8.9	118.0	188
1314062	4 G 2.5	9.9	147.0	236
1314063	5 G 2.5	11.0	176.0	270
1314064	7 G 2.5	11.9	253.0	340
1314065	12 G 2.5	16.0	355.0	589
1314066	18 G 2.5	19.0	569.0	978
1314067	25 G 2.5	22.2	827.0	1358
1314068	4 G 4	11.6	248.0	305
1314070	7 G 4	14.4	355.0	500
1314071	4 G 6	14.2	343.0	440
1314073	7 G 6	17.0	505.0	672
1314074	4 G 10	17.2	535.0	710
1314075	4 G 16	20.2	800.0	1050
1314076	4 G 25	25.1	1,075.0	1570
1314077	4 G 35	28.0	1,576.0	2070

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBUST 215 C refer to page 64
- ÖLFLEX® CLASSIC 400 CP refer to page 66

Accessories

- Conductor end sleeves refer to page 909
- SKINTOP® MS-SC-M refer to page 668

Harsh conditions

High mechanical and chemical resistance

ÖLFLEX® 440 P

Abrasion-resistant PUR control cables, flexible at cold temperatures – halogen-free and flame-retardant



Info

- Suitable for all weather conditions
- Flexible at low temperatures
- VDE-tested and registered

Benefits

- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- Halogen-free insulating material means low corrosive smoke emissions are produced in the event of a fire
- VDE-tested characteristics

Application range

- Construction machinery
- Machine tools
- Very suitable for oily wet areas within machinery and production lines that are subject to normal mechanical stress
- Industrial machinery
- For indoor and outdoor use

Product features

- Resistant to oil and drilling fluids according to IEC 61892-4, Appendix D
- Abrasion and notch-resistant
- Halogen-free and flame-retardant (IEC 60332.1.2)
- Resistant to hydrolysis and microbes
- Flexible down to -40°C

Approvals



Design

- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- Cores twisted in layers
- Special polyurethane outer sheath (PUR)
- Sheath colour: silver grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 12.5 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -40 °C to +90 °C
Fixed installation: -50°C to +90°C
- VDE-tested**
VDE reg. no. 6582
4 - 6 mm²: based on VDE 0281/0282

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 440 P				
0012800	2 X 0.5	5.9	10.0	39
0012801	3 G 0.5	6.2	14.0	46
0012802	4 G 0.5	6.9	19.0	53
0012803	5 G 0.5	7.4	24.0	65
0012804	7 G 0.5	9.1	34.0	92
0012805	12 G 0.5	11.3	58.0	149
0012806	18 G 0.5	13.2	86.0	207
0012807	25 G 0.5	15.0	120.0	274
0012813	2 X 0.75	6.4	14.0	48
0012814	3 G 0.75	6.8	22.0	53
0012815	4 G 0.75	7.4	29.0	67
0012816	5 G 0.75	8.6	36.0	81
0012817	7 G 0.75	10.0	50.0	119
0012818	12 G 0.75	12.4	86.0	193
0012819	18 G 0.75	14.4	130.0	269
0012820	25 G 0.75	17.2	180.0	378
0012825	2 X 1.0	6.8	19.0	57
0012826	3 G 1.0	7.2	29.0	61
0012827	4 G 1.0	8.2	38.0	82

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0012828	5 G 1.0	9.0	48.0	107
0012829	7 G 1.0	11.1	67.0	138
0012830	12 G 1.0	13.2	115.0	215
0012831	18 G 1.0	15.4	173.0	328
0012832	25 G 1.0	19.0	240.0	479
0012833	34 G 1.0	21.8	326.0	616
0012834	41 G 1.0	23.4	394.0	727
0012837	2 X 1.5	7.4	29.0	73
0012838	3 G 1.5	8.3	43.0	96
0012839	4 G 1.5	9.0	58.0	105
0012840	5 G 1.5	9.8	72.0	133
0012841	7 G 1.5	12.2	101.0	175
0012842	12 G 1.5	14.5	173.0	309
0012843	18 G 1.5	17.6	259.0	458
0012844	25 G 1.5	20.7	360.0	635
0012846	41 G 1.5	26.3	590.0	1003
0012850	3 G 2.5	9.7	72.0	142
0012851	4 G 2.5	11.0	96.0	184
0012852	5 G 2.5	12.1	120.0	220
0012853	7 G 2.5	14.2	168.0	294
0012854	12 G 2.5	17.8	288.0	489

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBUST 210 refer to page 63
- ÖLFLEX® CLASSIC 400 P refer to page 65
- ÖLFLEX® 491 P refer to page 70

Accessories

- Conductor end sleeves refer to page 909
- SKINTOP® ST-M refer to page 652

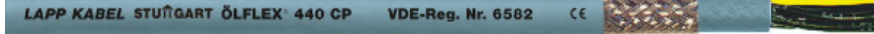
ÖLFLEX® 440 CP

Abrasion-resistant PUR control cables, flexible at cold temperatures – screened, halogen-free and flame-retardant



Info

- Suitable for all weather conditions
- VDE-tested and registered
- EMC compliant copper screening



Benefits

- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- Halogen-free insulating material means low corrosive smoke emissions are produced in the event of a fire
- Copper braiding screens the cable against electromagnetic interference

Application range

- Construction machinery
- Machine tools
- Very suitable for oily wet areas within machinery and production lines that are subject to normal mechanical stress
- Industrial machinery
- For indoor and outdoor use

Product features

- Resistant to oil and drilling fluids according to IEC 61892-4, Appendix D
- Abrasion and notch-resistant
- Halogen-free and flame-retardant (IEC 60332.1.2)
- Resistant to hydrolysis and microbes
- Flexible at low temperatures

Approvals



Design

- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- Cores twisted in layers
- Inner sheath made of TPE
- Tinned-copper braiding
- Special polyurethane outer sheath (PUR)
- Sheath colour: silver grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation:
6 x cable diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -40 °C to +90 °C
Fixed installation: -50°C to +90°C
- VDE-tested**
VDE reg. no. 6582
4 - 6 mm²: based on VDE 0281/0282

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 440 CP				
0012901	3 G 0.5	8.3	44.0	100
0012902	4 G 0.5	8.8	52.0	120
0012903	5 G 0.5	9.7	61.0	139
0012904	7 G 0.5	11.2	75.0	175
0012906	12 G 0.5	13.7	131.0	276
0012907	18 G 0.5	15.7	168.0	376
0012908	25 G 0.5	18.5	212.0	485
0012911	2 X 0.75	8.4	45.0	104
0012912	3 G 0.75	8.7	52.0	119
0012913	4 G 0.75	9.5	67.0	126
0012914	5 G 0.75	10.2	75.0	165
0012915	7 G 0.75	11.9	96.0	210
0012917	12 G 0.75	14.5	160.0	331
0012919	25 G 0.75	20.3	283.0	596
0012925	2 X 1.0	8.7	49.0	117
0012926	3 G 1.0	9.3	60.0	132
0012927	4 G 1.0	9.9	78.0	163
0012928	5 G 1.0	10.8	88.0	187

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0012929	7 G 1.0	12.8	115.0	255
0012931	12 G 1.0	15.4	201.0	419
0012932	18 G 1.0	17.7	267.0	546
0012933	25 G 1.0	21.5	351.0	738
0012934	34 G 1.0	23.8	498.0	972
0012940	2 X 1.5	9.5	68.0	122
0012941	3 G 1.5	9.9	83.0	140
0012942	4 G 1.5	10.8	102.0	170
0012943	5 G 1.5	11.6	119.0	200
0012944	7 G 1.5	14.2	186.0	290
0012945	12 G 1.5	16.8	264.0	423
0012946	18 G 1.5	20.0	379.0	616
0012947	25 G 1.5	23.5	534.0	804
0012949	41 G 1.5	28.9	803.0	1360
0012950	3 G 2.5	11.4	121.0	194
0012951	4 G 2.5	12.6	145.0	307
0012952	5 G 2.5	14.0	205.0	413
0012953	7 G 2.5	16.4	259.0	533
0012954	12 G 2.5	21.0	407.0	795

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 400 CP refer to page 66

Accessories

- Conductor end sleeves refer to page 909
- SKINTOP® MS-SC-M refer to page 668

Harsh conditions

High mechanical and chemical resistance

ÖLFLEX® 491 P

Abrasion-resistant PUR control cables – approved for North America



Info

- For the North American market
- High mechanical strength
- Good oil resistance

Benefits

- Certified for the USA and Canada for export-oriented appliance and apparatus manufacturers
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Metric flexible conductor design
- Also available as DESINA® compliant power cable with black outer sheath colour

Application range

- Appliance and apparatus construction
- Plant engineering
- Very suitable for oily wet areas within machinery and production lines that are subject to normal mechanical stress
- Outdoor use is possible within the indicated operating temperature range

Product features

- High oil-resistance
- Abrasion and notch-resistant
- Low-adhesive surface
- Flame-retardant according to IEC 60332.1.2 & CSA FT1
- Resistant to hydrolysis and microbes

Approvals



- USA: acc. to NFPA79 Ed 07 in industrial machinery as part of a listed assembly only
- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- Core insulation: special PVC
- Cores twisted in layers
- Special polyurethane outer sheath (PUR)
- Sheath colour: silver grey (RAL 7001)
- DESINA®-compliant: black (RAL 9005)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Approvals**
In accordance with UL-AWM Style 20234 cUL AWM II A/B FT1
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
HAR U₀/U: 300/500 V
UL/CSA: 600 V
- Test voltage**
Test voltage: 4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexible use: -5°C to 80°C
Fixed installation: -40°C to 80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 491 P - sheath colour: black				
0013009	3 G 1.0	7.7	27.0	73
0013017	3 G 1.5	8.3	44.0	100
0013018	4 G 1.5	9.0	58.0	123
0013019	5 G 1.5	9.8	72.0	150
0013020	7 G 1.5	10.7	101.0	197
0013021	12 G 1.5	13.8	173.4	344
0013023	25 G 1.5	20.0	360.0	682
0013024	3 G 2.5	9.2	72.0	152
0013025	4 G 2.5	9.9	96.0	200
ÖLFLEX® 491 P - sheath colour: grey				
0013208	2 X 1.0	7.3	19.2	62
0013210	4 G 1.0	8.2	35.0	89
0013212	7 G 1.0	9.7	61.0	138
0013213	12 G 1.0	12.5	105.0	232
0013214	18 G 1.0	14.8	157.0	340
0013215	25 G 1.0	17.8	218.0	454
0013223	3 G 1.5	8.3	44.0	100
0013220	4 G 1.5	9.0	57.6	123
0013222	7 G 1.5	10.7	101.0	197
0013225	12 G 1.5	13.8	173.0	344
0013226	18 G 1.5	16.6	260.0	488
0013227	25 G 1.5	20.0	360.0	682

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
DESINA® is a registered trademark of the German Machine Tool Builders' Association
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC 400 P refer to page 65

Accessories

- Cable Marking Systems refer to page 854
- SKINTOP® ST-M refer to page 652

ÖLFLEX® CONTROL M

Control cables with increased oil resistance - multiple UL and CSA listed

ÖLFLEX® CONTROL M (UL)TYPE TC-ER OR MTW 90°C 600V- CSA AWM - c(UL) CIC/TC FT4 RoHS



Info

- Complies with NFPA 79 Edition 2012
- Please note: discontinued product! <Reduced range of sizes>
- For a future alternative product see ÖLFLEX® CONTROL TM

Benefits

- Wide application range due to multiple approvals
- Cost-saving, easy installation due to omission of closed raceways (suitable for open wiring)
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media

Application range

- Industrial machinery; plant engineering
- Machine tools compliant with UL MTW (Machine Tool Wiring)
- Suitable for wet areas within machineries and production lines due to higher resistance to oil and moisture
- TC-ER (Tray Cable Exposed Run) approval for open wiring between cable tray and industrial machines/plants acc. to NEC 336.10(7)
- Wind turbines: USA Wind Turbine Tray Cable (WTTC)

Product features

- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- High oil-resistance, according to UL OIL RES I and UL OIL RES II
- Water-resistant, UL Wet Approval 75 °C

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T 16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- Insulation: PVC with nylon sheath (PA skin)
- Cores twisted in layers
- Outer sheath made of special PVC compound, grey (RAL 7001)

Technical data

- Core identification code**
Black cores with white numbers
- Approvals**
UL MTW, TC-ER, WTTC 1000 V, BUS DROP c(UL) Type TC and CIC FT4
CSA AWM I/II A/B FT4
NOM (Normas Oficiales Mexicanas)
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
5 x outer diameter
- Nominal voltage**
UL/CSA: 600 V (TC, MTW, CIC), WTTC 1000V
UL/CSA: 1000 V (AWM)
HAR U₀/U: 300/500 V
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -10°C to +90°C (according to AWM +105°C)
Fixed installation: -40°C to +90°C (according to AWM +105°C)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CONTROL M				
431803	3 G 1.0	7.6	28.8	85
431804	4 G 1.0	8.1	38.4	98
431805	5 G 1.0	8.8	48.0	115
431807	7 G 1.0	9.5	67.0	149
431812	12 G 1.0	12.1	115.0	255
431818	18 G 1.0	14.9	173.0	365
431825	25 G 1.0	16.9	240.0	479
431603	3 G 1.5	8.3	43.0	103
431604	4 G 1.5	8.9	58.0	124
431605	5 G 1.5	9.7	72.0	146
431607	7 G 1.5	10.5	101.0	189
431612	12 G 1.5	14.3	173.0	328

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
431618	18 G 1.5	16.6	259.0	431
431625	25 G 1.5	18.8	360.0	592
431403	3 G 2.5	8.8	72.0	130
431404	4 G 2.5	9.6	96.0	159
431405	5 G 2.5	10.8	120.0	191
431407	7 G 2.5	11.8	168.0	252
431204	4 G 4	11.7	153.0	226
431205	5 G 4	12.8	192.0	279
431207	7 G 4	14.8	269.0	384
431004	4 G 6	15.0	231.0	394
431005	5 G 6	16.3	288.0	472
430804	4 G 10	18.4	384.0	615
430604	4 G 16	22.8	615.0	864

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CONTROL TM refer to page 47
- ÖLFLEX® CONTROL TM CY refer to page 48
- ÖLFLEX® TRAY II refer to page 49
- ÖLFLEX® TRAY II CY refer to page 50

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® ST-M refer to page 652

Harsh conditions

High mechanical and chemical resistance

ÖLFLEX® FORTIS

Robust, cold temperature and highly oil resistant control cables - multiple UL and CSA listed

LAPP KABEL STUTTGART ÖLFLEX® Fortis (UL) Type TC ER Oil Res I/II
E171371 MTW WTTC 1000V 90°C Dry c(UL) Control CIC/TC CE



Info

- Complies with NFPA 79 Edition 2012
- Increased oil resistance and flexibility at cold temperatures

Benefits

- Wide application range due to multiple approvals
- Cost-saving, easy installation due to omission of closed raceways (suitable for open wiring)
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- The high flexibility and good dismantling and stripping properties enable easy space-saving cable installation and fast processing

Application range

- Industrial machinery; plant engineering
- Machine tools compliant with UL MTW (Machine Tool Wiring)
- Suitable for wet areas within machineries and production lines due to higher resistance to oil and moisture
- TC-ER (Tray Cable Exposed Run) approval for open wiring between cable tray and industrial machines/plants acc. to NEC 336.10(7)
- Meets WTTC (UL2277) requirements

Product features

- Torsion-resistant up to ±150°/m
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- High oil-resistance, according to UL OIL RES I and UL OIL RES II
- Water-resistant, UL Wet Approval 75 °C
- Flexible down to -40°C

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- Insulation: PVC with nylon sheath (PA skin)
- Cores twisted in layers
- Outer sheath made of robust special polymer
Colour: black

Technical data



Core identification code
Black cores with white numbers



Approvals
UL-listed according to:
Type TC-ER (Exposed Run)
Type MTW or UL AWM, NPFA 79 2007
CSA-listed according to:
c(UL) Type TC and CIC FT-4 -40°C
CSA AWM I/II A/B FT-4 -40°C



Conductor stranding
Fine wire according to VDE 0295, class 5/IEC 60228 class 5



Minimum bending radius
5 x outer diameter



Nominal voltage
UL/CSA: 600 V (TC, MTW, CIC), WTTC 1000V
HAR U₀/U: 300/500 V



Test voltage
2000 V



Protective conductor
G = with GN-YE protective conductor
X = without protective conductor



Temperature range
Occasional flexing: -40°C to +90°C
(according to AWM +105°C)
Fixed installation: -55°C to +90°C
(according to AWM +105°C)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® FORTIS				
331803	3 G 1.0	7.5	28.8	85
331804	4 G 1.0	8.1	38.4	98
331805	5 G 1.0	8.8	48.0	115
331807	7 G 1.0	9.5	67.0	149
331812	12 G 1.0	12.1	115.0	255
331818	18 G 1.0	14.9	173.0	365
331603	3 G 1.5	8.3	43.0	103
331604	4 G 1.5	8.9	58.0	124
331605	5 G 1.5	9.7	72.0	146
331607	7 G 1.5	10.5	101.0	189
331612	12 G 1.5	14.4	173.0	328
331618	18 G 1.5	16.6	259.0	431
331625	25 G 1.5	18.8	360.0	592

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
331403	3 G 2.5	9.2	72.0	130
331404	4 G 2.5	10.0	96.0	159
331405	5 G 2.5	10.8	120.0	191
331407	7 G 2.5	11.8	168.0	252
331412	12 G 2.5	16.2	288.0	459
331204	4 G 4	11.7	153.0	226
331205	5 G 4	12.8	192.0	279
331004	4 G 6	14.7	231.0	394
331005	5 G 6	16.0	288.0	472
330804	4 G 10	17.9	384.0	615
330805	5 G 10	19.6	480.0	771
330604	4 G 16	22.8	615.0	864
330605	5 G 16	24.9	768.0	1080

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 610 m drum or 8 x 76 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CONTROL TM refer to page 47
- ÖLFLEX® CONTROL TM CY refer to page 48

Accessories

- SKINTOP® ST-M refer to page 652
- SKINTOP® MS-M refer to page 662
- SKINTOP® COLD refer to page 664

ÖLFLEX® 450 P

Abrasion-resistant cable for handheld equipment with PVC/PUR sheath and integrated wear indicator



Info

- Cost-effective PVC/PUR dual sheath
- Integrated wear indicator



Benefits

- Good cost-benefit ratio
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- The signal colour of the outer sheath increases safety and visual perception
- Serious mechanical damages of the yellow outer jacket become visible due to the red inner sheath

Application range

- Power or extension cord
- Electrical devices
- Portable handheld electrical devices such as drills, sanders, jig saws or grinders
- Portable devices for the home and garden
- Outdoor use is possible within the indicated operating temperature range

Product features

- Good oil resistance
- Abrasion and notch-resistant
- Flame-retardant according to IEC 60332.1.2
- Low-adhesive surface
- Resistant to hydrolysis and microbes

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Based on PVC
- Cores twisted together
- Inner sheath: PVC - colour: signal red
- Outer sheath: PUR - colour: signal yellow

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9
- Based on**
VDE 0250/0281
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 450 P				
0012101	2 X 1.0	8.0	19.2	82
0012102	3 G 1.0	8.4	29.0	89
0012202	3 G 1.5	9.3	43.0	120
00122033	4 G 1.5	10.1	58.0	160
00122043	5 G 1.5	10.9	72.0	179
0012302	3 G 2.5	10.8	72.0	186
00123043	5 G 2.5	13.6	120.0	283

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® 540 P refer to page 75
- ÖLFLEX® 550 P refer to page 77

Accessories

- SKINTOP® BS-M refer to page 657
- SKINTOP® ST-M refer to page 652

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Harsh conditions

High mechanical and chemical resistance

ÖLFLEX® 500 P

Extra-flexible, abrasion and cold-resistant workshop cable with PUR core insulation and outer sheath



Info

- High mechanical strength
- Good oil resistance
- Extra flexible conductor design

Benefits

- Increased durability under harsh conditions thanks to robust PUR core and outer sheath material
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- High flexibility simplifies installation when space is at a premium and use with electrical handheld devices
- The signal colour of the outer sheath increases safety and visual perception

Application range

- Connection and extension cables
- Portable handheld electrical devices such as drills, sanders, jig saws or grinders
- Portable devices for the home and garden

Product features

- Resistant to oil and drilling fluids according to IEC 61892-4, Appendix D
- Abrasion and notch-resistant
- Flexible down to -40°C
- Halogen-free and flame-retardant (IEC 60332.1.2)
- Resistant to hydrolysis and microbes

Approvals



Design

- Extra-fine wire strand made of bare copper
- Core insulation: PUR
- Cores twisted together
- PUR outer sheath
- Sheath colour: orange (RAL 2003)

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9
- Based on**
VDE 0281/0282
- Specific insulation resistance**
> 150 MOhm x cm
- Conductor stranding**
Extra-fine wire acc. to VDE 0295, class 6 / IEC 60228 class 6
- Minimum bending radius**
Occasional flexing: 10 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -40 °C to +80 °C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 500 P				
0012345	2 X 1.0	7.2	19.5	64
0012346	3 G 1.0	7.6	29.0	77
00123473	4 G 1.0	8.5	38.4	96
00123483	5 G 1.0	9.2	48.0	120
0012351	2 X 1.5	8.0	29.0	81
0012352	3 G 1.5	8.7	43.0	105.3
00123543	4 G 1.5	9.6	58.0	135
00123533	5 G 1.5	10.8	72.0	158.9
0012365	3 G 2.5	10.9	72.0	173.2
00123553	4 G 2.5	11.9	96.0	204
00123663	5 G 2.5	13.2	120.0	254

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® 540 P refer to page 75
- ÖLFLEX® 550 P refer to page 77

Accessories

- Cable Marking Systems refer to page 854
- Conductor end sleeves refer to page 909
- SKINTOP® CLICK refer to page 654
- SKINTOP® ST-M refer to page 652

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

ÖLFLEX® 540 P

VDE-registered, cold-flexible TPE/PUR connection cables for particularly harsh conditions



Info

- The proven building site cable
- Voltage class from 1.5 mm² 450/750 V
- VDE-tested and registered



Benefits

- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- The signal colour of the outer sheath increases safety and visual perception
- VDE-tested characteristics

Application range

- Construction machinery
- Building sites, camp sites, stage applications
- Agricultural equipment
- Industrial machinery
- For indoor and outdoor use

Product features

- Resistant to oil and drilling fluids according to IEC 61892-4, Appendix D
- Abrasion and notch-resistant
- Halogen-free and flame-retardant (IEC 60332.1.2)
- Flexible down to -40°C
- Resistant to hydrolysis and microbes

Approvals



Design

- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- Cores twisted together
- Outer sheath: PUR – colour: signal yellow
- Other sheath colours are available upon request

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9 (7-cored version number-coded)
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 10 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
Up to 1.0mm² 300/500 V
From 1.5 mm² 450/750 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -40 °C to +90 °C
Fixed installation: -50°C to +90°C
- VDE-tested**
Up to 1.0 mm²: VDE reg. no. 6583
From 1.5 mm²: VDE reg. no. 6584

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 540 P U₀/U: 300/500 V				
0012452	2 X 0.75	6.6	14.4	52
0012453	3 G 0.75	7.0	21.6	63
00124543	4 G 0.75	7.6	28.8	80
00124553	5 G 0.75	8.5	36.0	98
0012456	7 G 0.75	10.2	51.0	126
0012457	2 X 1.0	7.0	19.2	53
0012458	3 G 1.0	7.4	29.0	72
00124593	4 G 1.0	8.2	38.4	96
00124603	5 G 1.0	9.0	48.0	117
0012461	7 G 1.0	10.9	68.0	147
ÖLFLEX® 540 P U₀/U: 450/750 V				
0012462	2 X 1.5	8.4	29.0	82
0012463	3 G 1.5	8.9	43.0	108
00124643	4 G 1.5	9.9	58.0	147
00124653	5 G 1.5	10.9	72.0	164
0012466	7 G 1.5	13.5	101.0	267
0012467	2 X 2.5	10.0	48.0	142
0012468	3 G 2.5	10.6	72.0	161
00124693	4 G 2.5	11.8	96.0	220
00124703	5 G 2.5	13.4	120.0	245
0012471	7 G 2.5	15.8	168.0	321
0012474	3 G 4	13.0	115.2	262
00124753	4 G 4	14.2	154.0	284
00124763	5 G 4	16.0	192.0	355
00124783	4 G 6	16.1	230.0	440
00124793	5 G 6	17.6	288.0	530
00124813	4 G 10	19.9	384.0	615
00124823	5 G 10	22.2	480.0	735

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBUST 200 refer to page 62
- ÖLFLEX® 550 P refer to page 77

Accessories

- SKINTOP® ST-M refer to page 652
- SKINTOP® BS-M refer to page 657
- SKINTOP® MS-M refer to page 662

Harsh conditions

High mechanical and chemical resistance

ÖLFLEX® 540 CP

VDE-registered, screened and cold-flexible TPE/PUR connection cables for particularly harsh conditions



Info

- The proven building site cable
- Voltage class from 1.5 mm² 450/750 V
- VDE-tested and registered

Benefits

- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- The signal colour of the outer sheath increases safety and visual perception
- Copper braiding screens the cable against electromagnetic interference

Application range

- Construction machinery
- Building sites, camp sites, stage applications
- Agricultural equipment
- Industrial machinery
- For indoor and outdoor use

Product features

- Resistant to oil and drilling fluids according to IEC 61892-4, Appendix D
- Abrasion and notch-resistant
- Halogen-free and flame-retardant (IEC 60332.1.2)
- Flexible down to -40°C
- Resistant to hydrolysis and microbes

Approvals



Design

- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- Cores twisted together
- Inner sheath made of TPE
- Tinned copper screen braiding
- Outer sheath: PUR – colour: signal yellow

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9 (7-cored version number-coded)
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 12.5 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
Up to 1.0mm² 300/500 V
From 1.5 mm² 450/750 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -40 °C to +90 °C
Fixed installation: -50°C to +90°C
- VDE-tested**
Up to 1.0 mm²: VDE reg. no. 6583
From 1.5 mm²: VDE reg. no. 6584

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 540 CP U₀/U: 300/500 V				
0012752	2 X 0.75	8.6	43.9	103
0012753	3 G 0.75	9.6	67.6	140
00127553	5 G 0.75	10.7	75.0	164
0012757	2 X 1.0	9.6	65.2	138
0012758	3 G 1.0	10.0	74.9	153
00127603	5 G 1.0	11.2	87.2	184
0012761	7 G 1.0	13.9	138.5	281
ÖLFLEX® 540 CP U₀/U: 450/750 V				
0012762	2 X 1.5	10.6	67.7	159
0012763	3 G 1.5	11.1	82.3	181
00127643	4 G 1.5	12.1	101.8	218
00127653	5 G 1.5	13.7	143.3	287
0012766	7 G 1.5	16.7	195.7	394
0012767	2 X 2.5	12.2	92.4	213
0012768	3 G 2.5	13.4	119.0	263
00127693	4 G 2.5	14.6	168.2	334
00127703	5 G 2.5	16.6	204.7	416
00127753	4 G 4	17.4	240.1	476
00127783	4 G 6	19.2	355.5	634
00127793	5 G 6	20.9	452.9	770
00127813	4 G 10	23.6	577.8	993
00127823	5 G 10	25.5	681.2	1151

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® 440 CP refer to page 69

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINDICHT® SM-PE-M refer to page 694

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® 550 P

PUR power cords with European harmonisation (HAR)



Info

- High mechanical strength
- Good oil resistance
- H05BQ-F/H07BQ-F design standard



Benefits

- Europe-wide use due to harmonisation
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- The signal colour of the outer sheath increases safety and visual perception

Application range

- Construction machinery
- Building sites, camp sites, stage applications
- Agricultural equipment
- Portable handheld electrical devices such as drills, sanders, jig saws or grinders
- For indoor and outdoor use

Product features

- Oil-resistant
- Abrasion and notch-resistant
- Flexible down to -40°C
- Resistant to hydrolysis and microbes

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: rubber compound
- Cores twisted together
- PUR outer sheath
- Sheath colour: orange (RAL 2003)

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9
- Approvals**
H05BQ-F;H07BQ-F / HD22.10
VDE 0282 Part 10/HD 22.10
- Specific insulation resistance**
> 10 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
For flexible use:
12.5 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
Up to 1.0mm² 300/500 V
From 1.5 mm² 450/750 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -40 °C to +90 °C
Fixed installation: -50°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 550 P U₀/U: 300/500 V				
0013600	2 X 0.75	6.4	14.4	50
0013601	3 G 0.75	7.0	21.6	64
00136023	4 G 0.75	7.6	28.8	78
00136033	5 G 0.75	8.5	36.0	98
0013610	2 X 1.0	7.0	19.2	60
0013611	3 G 1.0	7.4	29.0	74
00136123	4 G 1.0	8.1	38.4	92
00136133	5 G 1.0	9.0	48.0	114
ÖLFLEX® 550 P U0/U: 450/750 V				
0013620	2 X 1.5	8.4	29.0	87
0013621	3 G 1.5	8.9	43.0	108
00136223	4 G 1.5	9.9	58.0	137
00136233	5 G 1.5	10.8	72.0	165
0013630	2 X 2.5	10.0	48.0	90
0013631	3 G 2.5	10.6	72.0	161
00136323	4 G 2.5	11.8	96.0	206
00136333	5 G 2.5	13.1	120.0	254

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBUST 200 refer to page 62
- H05RN-F refer to page 79
- H07RN-F refer to page 80
- ÖLFLEX® 500 P refer to page 74
- ÖLFLEX® 540 P refer to page 75

Accessories

- Cutting tools for various applications refer to page 902
- Stripping tools refer to page 905
- SKINTOP® MS-M refer to page 662
- SKINTOP® ST-M refer to page 652

Harsh conditions

Rubber cables

H05RR-F

Rubber cable for light mechanical stress and handheld devices used in households, kitchens, offices



Info

- Harmonised (HAR)
- International use
- Ozone-resistant

Benefits

- Type-compliant versions <HAR>-certified with “<HAR>” testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area

Application range

- Handheld and power supply devices according to HD 516/VDE 0298-300
- For lightweight workshop tools that are subject to light loads
- According to HD 516/VDE 0298-300: dry and damp rooms; only temporary use outdoors; not for industrial/commercial or agricultural facilities, except tailors/cutting workshops; not suitable for supplying industrial power tools
- Light & sound technology

Product features

- Ozone-resistant
- No flame retardancy according to IEC 60332-1-2

Approvals



Design

- Bare copper wire according to HAR
- Core insulation: rubber compound type EI 4
- Outer sheath: rubber compound, type EM3

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Approvals**
DIN VDE VDE 0282 Part 4/HD 22.4
- Specific insulation resistance**
1 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
Flexible use: 6 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Current rating**
Amp. According to VDE 0298 part 4 Tab. 11 and 13 HD 516/VDE 0298-300
- Temperature range**
Flexible use: -25°C to +60°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1600203	2 X 0.75	5.7 - 7.4	14.4	61
1600207	3 G 0.75	6.2 - 8.1	21.6	75
1600204	2 X 1.0	6.1 - 8.0	19.0	73
1600208	3 G 1.0	6.5 - 8.5	29.0	86
16002113	4 G 1.0	7.1 - 9.3	38.0	105
1600205	2 X 1.5	7.6 - 9.8	29.0	115
1600200	3 G 1.5	8.0 - 10.4	43.0	135
16002013	4 G 1.5	9.0 - 11.6	58.0	165
16002023	5 G 1.5	9.8 - 12.7	72.0	190
1600206	2 X 2.5	9.0 - 11.6	48.0	160
1600209	3 G 2.5	9.6 - 12.4	72.0	190
16002123	4 G 2.5	10.7 - 13.8	96.0	235
16002133	5 G 2.5	11.9 - 15.3	120.0	285

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

H05RN-F

Rubber cable for handheld devices and chains of decorative lights



Info

- Harmonised (HAR)
- International use

Benefits

- Type-compliant versions <HAR>-certified with “<HAR>” testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area

Application range

- According to HD 516/VDE 0298-300: for supplying devices in households, kitchens or offices under light mechanical stress; handheld inspection lamps
- According to HD 516/VDE 0298-300: provided the maximum conductor temperature of +60 °C, the maximum outer sheath surface temperature of +50 °C and the lack of ozone resistance are taken into account, suitable for permanent use outdoors with conventional mechanical stress

Product features

- Flame-retardant according to IEC 60332.1.2
- Oil-resistant according to EN 60811-2-1

Approvals



Design

- Bare copper wire according to HAR
- Core insulation: rubber compound type EI 4
- Outer sheath: rubber compound, type EM2

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Approvals**
VDE 0282 Part 4/HD 22.4
- Specific insulation resistance**
1 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
Flexible use: 6 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Current rating**
According to VDE 0298 part 4 Tab. 11 and 13 HD 516/VDE 0298-300
- Temperature range**
Flexible use: -25 °C to +60 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1600250	2 X 0.75	5.7 - 7.4	14.4	80
1600252	3 G 0.75	6.2 - 8.1	21.6	95
16002583	4 G 0.75	6.8 - 8.8	30.0	105
1600251	2 X 1.0	6.1 - 8.0	19.0	95
1600253	3 G 1.0	6.5 - 8.5	29.0	115

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- H07ZZ-F refer to page 81

Harsh conditions

Rubber cables

H07RN-F

Heavy standard construction



Info

- Harmonised (HAR)
- International use

Benefits

- Heavy-duty, rubber-sheathed cable
- High stresses
- Permitted up to 1000 V (0.6/1 kV) alternating voltage for protected and fixed installation
- Arrangements made of single-core, rubber-sheathed cables H07RN-F can be used for short circuit-proof and short-to-ground-proof installations in accordance with VDE 0100 Part 520
- Type-compliant versions <HAR>-certified with "<HAR>" testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area

Application range

- Handheld and power supply devices according to HD 516/VDE 0298-300
- According to HD 516/VDE 0298-300:... tools, machinery and agricultural devices for medium mechanical stress; for mobile engines and machinery; on plaster; not for submersion except for exceptional, brief flooding (see H07RN8-F cable for submersible pumps); areas with an explosion hazard, in addition to individual, national provisions/guidelines/legislation/standards/norms that may apply in specific cases;
- Dry or damp rooms as well as outdoors (taking into account all normative power characteristics) according to HD 516/VDE 0298-300
- Light & sound technology

Product features

- Flame-retardant according to IEC 60332.1.2
- Oil-resistant according to EN 60811-2-1
- Normatively not ozone-resistant according to HD 22.4/VDE 0282-4 and HD 22.1/VDE 0282-1

Approvals



Design

- Bare copper wire according to HAR
- Core insulation: rubber compound type EI 4
- Outer sheath: rubber compound, type EM2

Technical data

Core identification code
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers

Approvals
VDE 0282 Part 4/HD 22.4

Specific insulation resistance
1 GOhm x cm

Conductor stranding
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5

Minimum bending radius
According to HD 516/VDE 0298-300, table 6(c): 3 x up to 8 x cable outer diameter, depending on the outer diameter and application involved

Nominal voltage
U₀/U: 450/750 V

Test voltage
2500 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Current rating
According to VDE 0298 part 4 Tab. 11 and 13 HD 516/VDE 0298-300

Temperature range
According to HD 516/VDE 0298-300:... Flexible use and fixed installation: -25 °C to +60 °C at the conductor; maximum cable surface temperature: +50 °C
According to HD 516/VDE 0298-300: minimum laying and handling temperature: -25 °C; maximum ambient temperature for storage: +40 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1600096	1 X 1.5	5.7 - 7.1	14.4	59
1600099	1 X 2.5	6.3 - 7.9	24.0	72
1600097	1 X 4	7.2 - 9.0	38.0	99
1600098	1 X 6	7.9 - 9.8	58.0	130
1600194	1 X 10	9.5 - 11.9	96.0	230
1600195	1 X 16	10.8 - 13.4	154.0	320
1600196	1 X 25	12.7 - 15.8	240.0	450
1600193	1 X 35	14.3 - 17.9	336.0	605
1600197	1 X 50	16.5 - 20.6	480.0	825
1600189	1 X 70	18.6 - 23.3	672.0	1090
1600190	1 X 95	20.8 - 26.0	912.0	1405
1600198	1 X 120	22.8 - 28.6	1,152.0	1745
1600191	1 X 150	25.2 - 31.4	1,440.0	1887
1600175	1 X 185	27.6 - 34.4	1,776.0	2274
1600177	1 X 240	30.6 - 38.3	2,304.0	2955
30015435	1 X 300	33.5 - 41.9	2,880.0	3479
1600117	3 G 1.0	8.3 - 10.7	29.0	130
1600199	2 X 1.5	8.5 - 11.0	29.0	135
1600103	3 G 1.5	9.2 - 11.9	43.0	165
16001233	4 G 1.5	10.2 - 13.1	58.0	200
16001043	5 G 1.5	11.2 - 14.4	72.0	240
1600151	7 G 1.5	14.0 - 17.5	101.0	385
1600148	12 G 1.5	17.6 - 22.4	173.0	516
1600259	19 G 1.5	20.7 - 26.3	274.0	800
1600166	24 G 1.5	24.3 - 30.7	346.0	882
1600263	25 G 1.5	25.1 - 25.9	360.0	920
1600187	2 X 2.5	10.2 - 13.1	48.0	195
1600118	3 G 2.5	10.9 - 14.0	72.0	235
16001053	4 G 2.5	12.1 - 15.5	96.0	290
16001293	5 G 2.5	13.3 - 17.0	120.0	294
1600152	7 G 2.5	16.5 - 20.0	168.0	520

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1600154	12 G 2.5	20.6 - 26.2	14.4	810
1600156	19 G 2.5	25.5 - 31.0	456.0	1200
1600157	24 G 2.5	28.8 - 36.4	576.0	1650
1600186	2 X 4	11.8 - 15.1	77.0	270
1600119	3 G 4	12.7 - 16.2	115.0	320
16001063	4 G 4	14.0 - 17.9	154.0	395
16001303	5 G 4	15.6 - 19.9	192.0	485
1600161	7 G 4	21.0 - 21.8	268.8	681
1600120	3 G 6	14.1 - 18.0	173.0	360
16001073	4 G 6	15.7 - 20.0	230.0	475
16001313	5 G 6	17.5 - 22.2	288.0	760
1600121	3 G 10	19.1 - 24.2	288.0	880
16001083	4 G 10	20.9 - 26.5	384.0	1060
16001093	5 G 10	22.9 - 29.1	480.0	1300
1600122	3 G 16	21.8 - 27.6	461.0	1090
16001103	4 G 16	23.8 - 30.1	614.0	1345
16001113	5 G 16	26.4 - 33.3	768.0	1680
16001123	4 G 25	28.9 - 36.6	960.0	1995
16001133	5 G 25	32.0 - 40.4	1,200.0	2470
1600124	3 G 35	29.3 - 37.1	1,008.0	1910
16001143	4 G 35	32.5 - 41.1	1,344.0	2645
16001363	5 G 35	37.0 - 45.0	1,680.0	2810
16001153	4 G 50	37.7 - 47.5	1,920.0	3635
1600126	5 G 50	40.0 - 50.8	2,400.0	4050
16001163	4 G 70	42.7 - 54.0	2,688.0	4830
16001283	4 G 95	48.4 - 61.0	3,648.0	6320
16001323	4 G 120	53.0 - 66.0	4,608.0	6830
16000883	4 G 150	58.0 - 73.0	5,760.0	8320
1600141	4 G 185	64.0 - 80.0	7,104.0	9800
1600183	4 G 240	72.0 - 91.0	9,216.0	12800

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.
Cross-sections 5G35 and 5G50 without <HAR>

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Machines, devices; halogen-free: events, locations with a high density of people and valuable assets



Info

- Halogen-free and flame-retardant according to IEC 60332-3-24 (bundled fire test, category C)
- Harmonised (HAR)
- Ozone-resistant

Benefits

- Broad usages due to halogen-free materials
- According to VDE 0100-711, cables with low smoke emission are required in buildings for exhibitions, shows and stands without a fire alarm system
- Type-compliant versions <HAR>-certified with “<HAR>” testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area

Application range

- Stage technology
- For mobile equipment and machines
- Dry or damp rooms, as well as outdoors acc. to HD 516/VDE 0298-300
- For buildings or industrial plants with a high density of people or valuable assets

Product features

- Low amount of corrosive gases in the event of fire
- Flame-retardant according to IEC 60332-1-2 and bundle flame test according to IEC 60332-3-24/EN 50266-2-4
- Low smokes/low smoke density in the event of fire according to IEC 61034
- Ozone-resistant acc. to HD 22, EN 50363-6, EN 60811-2-1, EN 50396-8.1.3

Approvals



Design

- Strands of bare copper wires
- Core insulation: Halogen-free rubber compound
- Outer sheath: rubber compound, halogen-free

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Approvals**
VDE 0282 Part 13/HD 22.13 S 1
- Conductor stranding**
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
- Minimum bending radius**
Flexible use: 6 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U0/U: 450/750 VAC
In protected and fixed installations:
U0/U: 600/1000 V
- Test voltage**
2500 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Current rating**
VDE 0298 Part 4
HD 516/VDE 0298-300
- Temperature range**
Flexible use: -5°C to +70°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1600810	3 G 1.5	9.2 - 11.9	43.2	125
1600811	4 G 1.5	10.2 - 13.1	57.6	155
1600812	5 G 1.5	11.2 - 14.4	72.0	190
1600815	14 G 1.5	18.8 - 21.3	201.6	570
1600816	18 G 1.5	20.7 - 26.3	259.2	750
1600820	3 G 2.5	10.9 - 14.0	72.0	185
1600821	4 G 2.5	12.1 - 15.5	96.0	235
1600822	5 G 2.5	13.3 - 17.0	120.0	290
1600823	7 G 2.5	18.2 - 20.7	168.0	520
1600825	14 G 2.5	22.2 - 25.0	336.0	860
1600836	4 G 4	14.0 - 17.9	153.6	325
1600837	5 G 4	15.6 - 19.9	192.0	410
1600841	4 G 6	15.7 - 20.0	230.4	440
1600842	5 G 6	17.5 - 22.2	288.0	550
1600844	4 G 10	20.9 - 26.5	384.0	770
1600845	5 G 10	22.9 - 29.1	480.0	950
1600847	4 G 16	23.8 - 30.1	614.4	1070
1600849	4 G 25	28.9 - 36.6	960.0	1570
1600851	4 G 35	32.5 - 41.1	1,344.0	2040
1600852	4 G 50	37.7 - 47.5	1,920.0	2810

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- H07RN-F refer to page 80

Accessories

- SKINTOP® CLICK / CLICK-R refer to page 654
- EASY STRIP 2 stripping and cutting tool refer to page 905
- PEW 8.87 crimping pliers refer to page 916
- KS 20 cable shears refer to page 904

Harsh conditions

Rubber cables

H01N2-D

Normative arc-welding cable



Info

- Arc welding cable according to HD 22.6
- Harmonised (HAR)

Benefits

- Type-compliant versions <HAR>-certified with "<HAR>" testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area

Application range

- Application standard for H01N2-D: HD 516/VDE 0298-300
- For transmitting high currents from the electric welding device to the welding tool
- Use the welding cable only under consideration of HD 516/VDE 0298-300
- Can be used in dry or damp rooms

Product features

- Flame-retardant according to IEC 60332.1.2
- Maximum recommended ambient temperature during storage according to HD 516/VDE 0298-300: +40 °C

Approvals



- Has replaced the previous VDE type NSLFFÖU

Design

- Bare copper wire according to HAR
- Stranding approximately corresponds to class 6 up to 95 mm², and from 120 mm² approximately to class 5 acc. to VDE 0295
- Separator made of synthetic film or paper
- Outer sheath: rubber compound, type EM5

Technical data



Approvals
VDE 0282 Part 6 or HD 22.6



Conductor stranding
Class D according to VDE 0282 Part 6



Conductor resistance
according to VDE 0295



Minimum bending radius
Flexible use: 12 x outer diameter



Nominal voltage
U₀/U: 100/100 V



Test voltage
1000 V



Current rating
According to VDE 0298 Part 4, table 16 HD 516/VDE 0298-300



Temperature range
Flexible use: -25°C to +85°C HD 516/VDE 0298-300

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2310026	10	7.7 - 9.7	96.0	171
2210700	16	8.8 - 11.0	154.0	198
2210701	25	10.1 - 12.7	240.0	305
2210702	35	11.4 - 14.2	336.0	415
2210703	50	13.2 - 16.5	480.0	555
2210704	70	15.3 - 19.2	672.0	765
2210705	95	17.1 - 21.4	912.0	1010
2210706	120	19.2 - 24.0	1,152.0	1262
2210707	150	21.2 - 26.4	1,440.0	1610
2210708	240	25.0 - 29.5	2,304.0	2520

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- KS 20 cable shears refer to page 904

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

NSSHÖU

Mechanically robust rubber cable for mining and surface mining



Info

- High mechanical strength

Benefits

- For use at very high mechanical stress
- Single-core design suitable for robust connection cables for welding equipment

Application range

- For mining as well as surface mining
- Connection for moving equipment and machinery
- Under extreme environmental conditions
- Suitable for outdoor use, as well as in dry and damp interiors

Product features

- Flame-retardant according to IEC 60332.1.2
- Oil-resistant according to EN 60811-2-1
- High notch resistance
- Abrasion-resistant
- From a normative perspective, NSSHÖU is not generally antistatic per se, i.e. in concrete terms it has no antistatic outer sheath: similarly to capacitors, cables can be unintentionally electrically charged at the surface of their outer sheaths, which may cause sudden discharges and dust explosions. This may, in turn, cause other explosive substances located in the vicinity to also explode. This issue may apply to some mines

Approvals



Design

- Fine-wire strand made of tinned-copper wires
- Core insulation: rubber compound type 3GI3
- Inner sheath: rubber-compound, type GM1b or 5GM5
- Outer sheath: rubber compound, type 5GM5

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Approvals**
VDE 0250 Part 812
- Specific insulation resistance**
> 1 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
- Minimum bending radius**
Flexible use: 10 x outer diameter
Fixed installation: 5 x outer diameter
- Nominal voltage**
U₀/U: 600 / 1000 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Current rating**
According to VDE 0298 Part 4, Table 15
- Temperature range**
Flexible use: -25°C to +90°C
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
NSSHÖU-O				
1600500	1 X 16	10.9	154.0	260
1600501	1 X 25	13.3	240.0	390
1600502	1 X 35	14.4	336.0	500
1600503	1 X 50	16.7	480.0	680
1600504	1 X 70	18.9	672.0	900
1600505	1 X 95	21.0	912.0	1150
1600506	1 X 120	23.3	1,152.0	1440
1600507	1 X 150	25.2	1,440.0	1750
1600508	1 X 185	28.4	1,776.0	2180
1600509	1 X 240	31.4	2,304.0	2790
NSSHÖU-J				
1600516	3 G 1.5	11.8	43.0	200
16005243	4 G 1.5	12.7	58.0	230
16005333	5 G 1.5	13.6	72.0	280
1600517	3 G 2.5	13.2	72.0	260
16005253	4 G 2.5	15.4	96.0	360
16005343	5 G 2.5	16.5	120.0	420
1600541	7 G 2.5	20.0	168.0	600
1600544	12 G 2.5	26.0	288.0	860
16005263	4 G 4	16.9	154.0	470
16005353	5 G 4	18.2	192.0	550
16005273	4 G 6	18.3	230.0	580
16005363	5 G 6	20.6	288.0	740
16005283	4 G 10	22.3	384.0	950
16005373	5 G 10	24.1	480.0	1100
16005293	4 G 16	26.1	614.0	1400
16005383	5 G 16	28.3	768.0	1720
16005303	4 G 25	31.2	960.0	2000
16005313	4 G 35	34.1	1,344.0	2700
16005323	4 G 50	41.0	1,920.0	3700

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CRANE VS (N)SHTÖU refer to page 162
- ÖLFLEX® CRANE PUR refer to page 163

Accessories

- STAR STRIP stripping tool refer to page 906
- Cable shears KT 4 and KT 5 refer to page 904

Harsh conditions

Rubber cables

NSGAFöu 1.8/3 kV

Flexible single-conductor rubber cable with 1.8/3 kV rated voltage



Info

- Medium voltage
- Normative rated voltage classes U0/U 0.6/1 kVAc and 3.6/6 kVAc available on request

Benefits

- Arrangements made of single-conductor cables NSGAFÖU in accordance with VDE 0250 Part 602 with nominal voltage of at least U0/U: 1.8/3 kV can be used for short circuit-proof and short-to-ground-proof installation up to 1000 V in acc. with VDE 0100 Part 520 and VDE 0298 Part 3

Application range

- Wiring of machines, tools, devices, appliances and control cabinets
- Railway vehicles, buses, switching stations (short-circuit-proof up to 1000 V), power distributors (short-circuit-proof up to 1000 V)
- No direct burial, except of lead-through through fire separations such as sand cups
- In ducts, tubes, pipes, conduits and closed installation channels
- Bundled or for connection of movable parts

Product features

- Flame-retardant according to IEC 60332.1.2
- Oil-resistant according to EN 60811-2-1

Approvals



- The "CE" mark is forbidden as the normative nominal voltage U0/U = 1.8/3 kVAc falls outside low voltage as defined by the EC Low Voltage Directive 2006/95/EC, which is the standard to which the "CE" mark on most of the cables that we sell refers

Design

- Fine-wire strand made of tinned-copper wires
- Core insulation: rubber compound type 3GI3
- Outer coating: rubber compound, type 5GM3, black, different colours on request
- No outer sheath

Technical data



Approvals
VDE 0250 Part 602



Conductor stranding
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5



Minimum bending radius
Flexible use: 10 x outer diameter
Fixed installation: 6 x outer diameter



Nominal voltage
U₀/U: 1.8/3 kV



Test voltage
6000 V



Current rating
According to VDE 0298 Part 4, Table 15



Temperature range
Flexible use: -25°C to +90°C
Fixed installation: -40°C to +90°C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1600300	1.5	7.0	14.4	60
1600301	2.5	7.5	24.0	70
1600302	4	9.0	38.0	90
1600303	6	9.5	58.0	120
1600304	10	11.0	96.0	180
1600305	16	13.0	154.0	250
1600306	25	15.0	240.0	390
1600307	35	16.5	336.0	470
1600308	50	18.0	480.0	625
1600309	70	20.5	672.0	880
1600310	95	24.0	912.0	1190
1600311	120	26.0	1,152.0	1430
1600312	150	28.0	1,440.0	1750
1600313	185	31.0	1,776.0	2160
1600314	240	34.5	2,304.0	2640
3026826	300	38.0	2,880.0	3545

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- V 1311 pressing pliers, hydraulic refer to page 930
- KS 20 cable shears refer to page 904

NSHXAFö 1.8/3 kV

Halogen-free, flexible single-core rubber cable for public transport and wiring



Info

- Medium voltage
- Halogen-free
- Normative rated voltage classes U0/U 0.6/1 kVAc and 3.6/6 kVAc available on request

Benefits

- Arrangements made of single-conductor cables NSHXAFö in accordance with VDE 0250 Part 606 with nominal voltage of at least U0/U: 1.8/3 kV can be used for short circuit-proof and short-to-ground-proof installation up to 1000 V in acc. with VDE 0100 Part 520 and VDE 0298 Part 3

Application range

- Wiring of machines, tools, devices, appliances and control cabinets
- Railway vehicles, buses, switching stations (short-circuit-proof up to 1000 V), power distributors (short-circuit-proof up to 1000 V)
- No direct burial, except of lead-through through fire separations such as sand cups
- In ducts, tubes, pipes, conduits and closed installation channels
- Bundled or for connection of movable parts

Product features

- Halogen-free: to protect human life and valuable assets in the event of a fire, through low smoke density and low amount of corrosive gases
- Flame-retardant according to IEC 60332.1.2

Approvals



- The "CE" mark is forbidden as the normative nominal voltage U0/U = 1.8/3 kVAc falls outside low voltage as defined by the EC Low Voltage Directive 2006/95/EC, which is the standard to which the "CE" mark on most of the cables that we sell refers

Design

- Fine copper wire strands
- Core insulation: halogen-free rubber compound type 3GI3, according to DIN VDE 0207-20
- Outer sheath: halogen-free HM3 polymer compound according to DIN VDE 0250-606, in black, other colours available on request
- No outer sheath

Technical data

- Approvals**
DIN VDE VDE 0250 Part 606
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
Flexible use: 10 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 1.8/3 kV
- Test voltage**
6000 V
- Temperature range**
Flexing: -5°C to +90°C
Fixed installation: -25°C to +90°C

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
3022673	1.5	7.0	14.4	60
3022674	2.5	7.5	24.0	70
3022675	4	9.0	38.0	90
3022676	6	9.5	58.0	120
3022677	10	11.0	96.0	180
3022678	16	13.0	154.0	250
3022679	25	15.0	240.0	390
3022680	35	16.5	336.0	470
3022681	50	18.0	480.0	625
3022682	70	20.5	672.0	880
3022683	95	24.0	912.0	1190
3022684	120	26.0	1,152.0	1430
3022685	150	28.0	1,440.0	1750
3022686	185	31.0	1,776.0	2160
3022687	240	34.5	2,304.0	2718
3022688	300	38.0	2,890.0	3470

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- V 1311 pressing pliers, hydraulic refer to page 930
- KS 20 cable shears refer to page 904

Harsh conditions

Rubber cables

H07RN8-F

Cable for submersible pumps



Info

- Formerly: ÖLFLEX AQUA RN8
- Harmonised (HAR)

Benefits

- Temporary use in water: a maximum of 2 weeks at a time (transversely waterproof), subsequent drying-out required
- Immersion depth of 10 m
- According to HD 516/VDE 0298-300, underwater use prohibited in areas with shipping traffic, moving water or where there is a risk of dangerous, mechanical damage
- High stresses
- Type-compliant versions <HAR>-certified with "<HAR>" testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area

Application range

- For connecting electrical equipment in industrial water, e.g. floater switches
- Flexible applications in indoor and outdoor swimming pools
- For use with submersible pumps
- Dry or damp rooms, as well as outdoors and in industrial water

Product features

- Flame-retardant according to IEC 60332.1.2
- Oil-resistant according to EN 60811-2-1

Approvals



Design

- Strands of bare copper wires
- Core insulation: rubber compound type EI 4
- Outer sheath: rubber compound, type EM2

Technical data



Core identification code

Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers



Approvals

HD 22.16/VDE 0282 Part 16



Conductor stranding

Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5



Minimum bending radius

According to HD 516/VDE 0298-300, table 6(c): 3 x up to 8 x cable outer diameter, depending on the outer diameter and application involved



Nominal voltage

U0/U: 450/750 VAC
In protected and fixed installations:
U0/U: 600/1000 V



Test voltage

2500 V



Protective conductor

G = with GN-YE protective conductor
X = without protective conductor



Current rating

VDE 0298 Part 4
HD 516/VDE 0298-300



Temperature range

Flexible (conductor temp.): -25 °C to +60 °C
Fixed (conductor temp.): -40 °C to +60 °C
Max. water temp.: +40 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1600600	1 X 4	7.2 - 9.0	38.0	100
1600601	1 X 6	7.9 - 9.8	58.0	120
1600602	1 X 10	9.5 - 11.9	96.0	200
1600604	1 X 25	12.7 - 15.8	240.0	400
1600606	3 G 1.5	9.2 - 11.9	43.0	170
1600609	4 G 1.5	10.2 - 13.1	58.0	205
1600620	7 G 1.5	14.0 - 17.5	101.0	385
1600607	3 G 2.5	10.9 - 14.0	72.0	210
1600610	4 G 2.5	12.1 - 15.5	96.0	260
1600621	7 G 2.5	16.5 - 20.0	168.0	520
1600611	4 G 4	14.0 - 17.9	154.0	356
1600612	4 G 6	15.7 - 20.0	230.0	475
1600613	4 G 10	20.9 - 26.5	384.0	837
1600614	4 G 16	23.8 - 30.1	614.0	1220
1600615	4 G 25	28.9 - 36.6	960.0	1770
1600616	4 G 35	32.5 - 41.1	1,344.0	2304

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- H07RN-F refer to page 80

Accessories

- SKINTOP® CLICK / CLICK-R refer to page 654
- EASY STRIP 2 stripping and cutting tool refer to page 905
- PEW 8.87 crimping pliers refer to page 916
- KS 20 cable shears refer to page 904

ÖLFLEX® SERVO 700

Combined power and control cable for motors with variable frequency drives, PVC outer sheath



Info

- Combi motor cable for circuits such as:
- Power, brake, temperature

LAPP KABEL STUÏGART ÖLFLEX® SERVO 700 CE



Benefits

- One common cable for multiple circuits

Application range

- Connecting cable between Frequency converter and motor
- Connecting cable between servo controller and motor
- Plant engineering

Product features

- Fixed installation
- Occasional flexing
- In dry, damp or wet interiors with normal mechanical stress conditions
- Only for outdoor use within the indicated operating temperature range, with UV-protection
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: PVC
- Control pairs 0.34 mm², colour-coded, from 0.5 mm² black with consecutive imprinted numbering
- Control pair with laminated aluminium film and tinned-copper wire screening
- The model with one control pair does not have laminated aluminium foil (FDF).
- PVC outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Supply cores: black with white numbers 1-3 according to VDE 0293 and GN/YE protective conductor;
0036 001: coloured according to VDE 0293
Control cores: black with white numbers 5-8 (numbering increases in line with cross-section);
0.34 mm² pairs: WH/BR/GN/YE
- Based on**
Core: VDE 0812/0250/0281
Outer sheath in accordance with VDE 0281/0250
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
Flexible use: 20 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
Supply cores: 600/1000 V
Control core pairs: 250 V/AC
- Test voltage**
Supply cores: C/C; C/S: 4000 V
Control cores: C/C: 1500 V, C/S: 750 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -5°C to +80°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0036140	4 G 0,75 + 2 x (2 x 0,34)	9.5	91.9	120
0036145	4 G 1,5 + 2 x (2 x 0,75)	12.1	100.6	185
0036150	4 G 2,5 + (2 x 2 x 0,75)	13.9	142.1	327
0036151	4 G 4 + (2 x 0,75 + 2 x 1,0)	15.8	217.8	423
0036152	4 G 6 + (2 x 0,75 + 2 x 1,0)	16.7	294.6	544
0036154	4 G 16 + (2 x 2 x 1,0)	23.5	668.8	1168
0036025	4 G 1,5 + (2 x 0,75)	11.7	98.0	149
0036001	5 G 1,5 + (2 x 0,75)	12.7	110.0	160
0036015	7 G 1,5 + (2 x 0,75)	12.4	144.8	210
0036026	4 G 2,5 + (2 x 0,75)	13.1	138.6	227
0036020	7 G 2,5 + (2 x 0,75)	15.2	215.7	334

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 750 P refer to page 95
- ÖLFLEX® SERVO FD 755 P refer to page 96
- ÖLFLEX® SERVO FD 795 P refer to page 102

Accessories

- Cable Marking Systems refer to page 854
- EPIC® CIRCON LS1 refer to page 614
- EPIC® CIRCON LS1 Contacts, tools, accessories refer to page 622
- SKINTOP® MS-SC-M refer to page 668
- SKINDICHT® SM-PE-M refer to page 694

Servo applications

PVC sheath

ÖLFLEX® SERVO 700 CY

Combined power and control cable for motors with variable frequency drives, screened, PVC outer sheath



Info

- Combi motor cable for circuits such as:
- Power, brake, temperature
- EMC-compliant

Benefits

- One common cable for multiple circuits
- Total screening prevents/reduces interference from neighbouring cables

Application range

- Connecting cable between Frequency converter and motor
- Connecting cable between servo controller and motor

Product features

- Fixed installation
- Occasional flexing
- In dry, damp or wet interiors
- Only for outdoor use within the indicated operating temperature range, with UV-protection
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: PVC
- Control pairs 0.34 mm², colour-coded, from 0.5 mm² black with consecutive imprinted numbering
- Control pair with laminated aluminium film and tinned-copper wire screening
- The model with one control pair does not have laminated aluminium foil (FDF).
- Tinned-copper braiding
- PVC outer sheath, grey (RAL 7001)

Technical data



Core identification code

Supply cores: black with white numbers 1-3 according to VDE 0293 and GN/YE protective conductor
Control cores: black with white numbers 5-8 (numbering increases in line with cross-section);
0.34 mm² pairs: WH/BR/GN/YE



Based on

Core: VDE 0812/0250/0281
Outer sheath in accordance with VDE 0281/0250



Conductor stranding

Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5



Minimum bending radius

Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter



Nominal voltage

Supply cores: 600/1000 V
Control core pairs: 250 V/AC



Test voltage

Supply cores: C/C; C/S: 4000 V
Control cores: C/C: 1500 V, C/S: 750 V



Protective conductor

G = with GN-YE protective conductor
X = without protective conductor



Temperature range

Flexing: -5°C to +80°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0036156	4 G 0,75+2 x (2 x 0,34)	10.5	111.1	165
0036157	4 G 1,5+2 x (2 x 0,75)	12.7	147.5	245
0036158	4 G 2,5+(2 x 2 x 0,75)	14.9	226.1	385
0036159	4 G 4 + (2 x 0,75 + 2 x 1,0)	16.6	303.6	482
0036161	4 G 6 + (2 x 0,75 + 2 x 1,0)	17.7	379.4	609
0036162	4 G 10 + (2 x 0,75 + 2 x 1,0)	21.6	591.7	828
0036163	4 G 16 + (2 x 2 x 1,0)	24.5	861.3	1150
0036164	4 G 25 + (2 x 2 x 1,5)	30.1	1,261.8	1671

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO 709 CY refer to page 91
- ÖLFLEX® SERVO FD 796 CP refer to page 103
- SERVO Cables in acc. to INDRAMAT® Standard INK refer to page 105

Accessories

- EPIC® CIRCON LS1 refer to page 614
- EPIC® CIRCON LS1 Contacts, tools, accessories refer to page 622

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® SERVO 720 CY

Resolver & encoder cables for fixed installation

LAPP KABEL STÜTTGART ÖLFLEX® SERVO 720 CY CE



Info

- Fits encoders from various manufacturers
- Signal sensor/encoder cable
- Resolver

Benefits

- Thin, lightweight, reliable functionality
- Total screening prevents/reduces interference from neighbouring cables

Application range

- Analogue and incremental encoders in servo drives.
- Servo drives and servo assemblies
- Measurement, control and electrical applications

Product features

- Easy to install
- EMC-compliant
- Fixed installation
- Occasional flexing
- In dry, damp or wet interiors
- Flame-retardant according to IEC 60332.1.2

Approvals



- This product is designed for appropriate use in a voltage range < 50 V AC or 75 V DC. Therefore, the EEC (Low Voltage Directive) does not apply.

Design

- Fine-wire strand made of bare copper wires
- Core insulation: Based on PVC
- Refer to "Technical Data" for the colour-codes
- Core and pairs are twisted together
- Tinned copper screen braiding (*with drain wire)
- PVC outer sheath, grey (RAL 7001)

Technical data



Core identification code

0036 170 pairs: rd/bk, bn/gn, gy/pk, bl/vt; single cores: wt, bn
 0036 175 cores 0.14: wt, bn, gn, ye, gy, pk, bl, rd, bk, vt; cores 0.5: wt, bn
 0036 177 cores 0.14: wt, bn, gn, ye, gy, pk, bl, rd, bk, vt; cores 0.5: wt, bn, bl, bk
 0036 178 cores 0.5: wh, bn, gn, ye; cores 0.14 DIN 47100 from grey
 0036 181 pairs 0.14: rd/bk, bn/gn, ye/vt, gy/pk; single core 0.5: wh, bl, wtgn, bngn
 0036 168 pairs: 0.14 gn/ye, rd/bl, gy/pk; single core 0.5: wt, bn



Peak operating voltage

(not for power applications): 350 V Uss
 Nominal voltage: 48 V AC



Based on

Core in accordance with VDE 0812/0281 KRT

Standard version with UL-approval, for multi-wire copper conductors with a cross-sectional range of 10 - 400 mm²



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

Fine wire according to VDE 0295, class 5/ IEC 60228 class 5 from 0.5 mm²



Minimum bending radius

Occasional flexing: 20 x outer diameter
 Fixed installation: 6 x outer diameter



Test voltage

C/C - C/S 2000 - 1000 V



Temperature range

Occasional flexing: -5°C to +70°C
 Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0036170	4 x 2 x 0,25 + 2 x 1,0 *	8,9	70,8	128
0036175	10 x 0,14 + 2 x 0,5	7,9	39,3	88
0036177	10 x 0,14 + 4 x 0,5	8,0	51,1	94
0036178	15 x 0,14 + 4 x 0,5	8,7	59,7	125
0036181	4 x 2 x 0,14 + 4 x 0,5	8,1	48,8	95
0036168	3 x (2 x 0,14) + 2 x (0,5)	8,5	67,0	129

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 760 CP refer to page 97
- ÖLFLEX® SERVO FD 770 CP refer to page 98
- ÖLFLEX® SERVO FD 770 CP DESINA® refer to page 99
- Special Encoder and resolver cables refer to page 107

Accessories

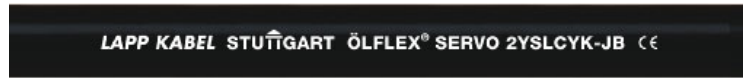
- EPIC® CIRCON M23 Housings refer to page 597
- EPIC® CIRCON M23 Inserts refer to page 602
- EPIC® CIRCON M23 Contacts, tools, accessories refer to page 608

Servo applications

PVC sheath

ÖLFLEX® SERVO 2YSLCY-JB

EMC-optimised motor cable, low capacitance, double screened, approved



Info

- EMC-optimised
- 3+3. Symmetry reduces common-mode interference effects
- Double-shielded

Benefits

- Allows EN 61800-3-compliant, EMC-compliant installation of power drive systems
- For very large power drive systems
- For more technical details, refer to data sheet DB0036425DE

Application range

- Connecting cable between frequency converter and motor
- Paper industry
- Chemical industry
- Heavy industry

Product features

- Low capacitance design allows a longer cable connection between the frequency converter and the motor
- In dry, damp or wet interiors
- The 2YSLCYK black version can also be used outdoors under direct exposure to UV rays. Direct burial in the ground is also possible.
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: PE
- Cores twisted concentrically (in protective conductors divided into three, this is between the gussets)
- Aluminium foil wrapped over the cores
- Screening: wrapped with braided tinned-copper wires
- 4-core design: transparent PVC outer sheath
- 3+3 core version: black PVC outer sheath, for outdoor use and direct burial

Technical data

Core identification code
Colours according to HD 308 S2 VDE 0293-308

Based on
VDE 0207 / 0250 / 0295

Specific insulation resistance
> 20 GOhm x cm

Conductor stranding
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5

Minimum bending radius
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
U_v/U: 0.6/1kV

Test voltage
4000 V

Protective conductor
This is distributed evenly in the gussets in protective conductors that are divided into three

Temperature range
Flexing: -5°C to +70°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0036425	4 G 1.5	11.4	95.0	230
0036426	4 G 2.5	12.4	150.0	300
0036427	4 G 4	15.6	235.0	485
0036428	4 G 6	17.0	320.0	630
0036429	4 G 10	19.6	533.0	860
0036430	4 G 16	22.1	789.0	1290
0036431	4 G 25	26.3	1,236.0	1860
0036432	4 G 35	29.5	1,662.0	2610
0036433	4 G 50	35.8	2,345.0	2950
0036434	4 G 70	40.3	3,196.0	3950
0036435	4 G 95	46.5	4,316.0	5300
0036436	4 G 120	53.2	5,435.0	6600
0036437	4 G 150	57.3	6,394.0	7043
0036438	4 G 185	62.3	7,639.0	8384
0036439	3 X 1,5 + 3 G 0,25	11.4	88.0	140
0036440	3 X 2,5 + 3 G 0,5	12.2	144.0	220
0036441	3 X 4 + 3 G 0,75	14.4	224.0	323
0036442	3 X 6 + 3 G 1,0	15.7	276.0	420
0036443	3 X 10 + 3 G 1,5	18.0	491.0	615
0036444	3 X 16 + 3 G 2,5	20.2	723.0	819
0036445	3 X 25 + 3 G 4	23.8	1,136.0	1325
0036446	3 X 35 + 3 G 6	26.9	1,535.0	1718
0036447	3 X 50 + 3 G 10	32.6	2,156.0	2399
0036448	3 X 70 + 3 G 10	36.4	2,871.0	3056
0036449	3 X 95 + 3 G 16	42.0	3,953.0	4162
0036450	3 X 120 + 3 G 16	47.8	4,836.0	5074
0036451	3 X 150 + 3 G 25	51.6	5,412.0	6128
0036479	3 X 185 + 3 G 35	56.5	7,041.0	7500

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO 9YSLCY-JB refer to page 92

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-M BRUSH refer to page 669

ÖLFLEX® SERVO 709 CY

Combined power and control cable for servomotors with UL AWM approval

LAPP KABEL STUÏGART ÖLFLEX® SERVO 709 CY DESINA, CE



Info

- EMC-compliant
- Fits servomotors from various manufacturers

Benefits

- One common cable for multiple circuits
- Multi-standard= fewer part varieties = cost savings

Application range

- Connecting cable between Frequency converter and motor
- Connecting cable between servo controller and motor
- Plant engineering
- Machine tools
- Printing machines

Product features

- Oil-resistant
- Flame-retardant according to IEC 60332.1.2 & CSA FT1
- Fixed installation
- Occasional flexing

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T 16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- Core insulation: PVC
- Control pair with laminated aluminium film and tinned-copper wire screening
- Tinned-copper braiding
- PVC outer sheath, orange (RAL 2003)

Technical data

- Core identification code**
Supply cores: black with white numbers 1-3 according to VDE 0293 and GN/YE protective conductor
Control cores: black with white numbers 5-8 (numbering increases in line with cross-section);
0.34 mm² pairs: WH/BR/GN/YE
- Approvals**
USA UL AWM Style 20886 VW1; Canada cRU AWM II A/B FT1
- Based on**
VDE 0245, 250, 281
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
IEC: power cores: 600/1000 V
Control cores: 300/500 V
UL: power cores: U: 1000 V
Control core pairs: U: 1000 V
- Test voltage**
Power cores: C/C & C/S 4000 V
Control cores: C/C: 4000 V; C/S: 3000 V
- Protective conductor**
G = with GN-YE protective conductor
- Temperature range**
Occasional flexing: -5°C to +90°C
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0038010	4 G 1,5 CY	9.9	90.0	173
0038011	4 G 2,5 CY	11.8	134.0	250
0038012	4 G 4 CY	13.8	217.0	368
0038013	4 G 6 CY	15.3	296.0	478
0038014	4 G 10 CY	19.5	491.0	781
0038015	4 G 16 CY	23.4	742.0	1198
0038016	4 G 25 CY	27.5	1,114.0	1730
0038017	4 G 35 CY	30.9	1,522.0	2284
0038018	4 G 50 CY	38.5	2,194.0	3393
0038019	4 G 0,75 + 2 x (2 x 0,34)	12.4	96.0	225
0038020	4 G 1,0 + 2 x (2 x 0,75)	13.6	149.0	296
0038021	4 G 1,5 + 2 x (2 x 0,75)	14.8	169.0	343
0038022	4 G 2,5 + 2 x (2 x 1,0)	16.3	238.0	420
0038023	4 G 4 + (2 x 1,0 + 2 x 1,5)	16.7	317.0	537
0038024	4 G 6 + (2 x 1,0 + 2 x 1,5)	19.2	426.0	704
0038025	4 G 10 + (2 x 1,0 + 2 x 1,5)	22.5	599.0	965
0038026	4 G 16 + (2 x 1,0 + 2 x 1,5)	25.5	873.0	1380
0038027	4 G 25 + (2 x 2 x 1,5)	30.6	1,265.0	1954
0038028	4 G 35 + (2 x 2 x 1,5)	33.4	1,659.0	2564
0038029	4 G 50 + (2 x 2 x 2,5)	41.0	2,349.0	3785

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
DESINA® is a registered trademark of the German Machine Tool Builders' Association
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO 700 CY refer to page 88
- ÖLFLEX® SERVO FD 796 CP refer to page 103
- SERVO Cables in acc. to INDRAMAT® Standard INK refer to page 105

Accessories

- EPIC® CIRCON LS1 refer to page 614
- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-M BRUSH refer to page 669

Servo applications

PVC sheath, approved

ÖLFLEX® SERVO 9YSLCY-JB

Approved, EMC-optimised motor cable, low- capacitance, double-screened



Info

- EMC-optimised
- 3+3. Symmetry reduces common-mode interference effects
- Double-shielded

Benefits

- Allows EN 61800-3-compliant, EMC-compliant installation of power drive systems
- For very large power drive systems
- EN/VDE 90 °C PP insulation

Application range

- Connecting cable between frequency converter and motor
- Paper industry
- Chemical industry
- Heavy industry

Product features

- Low capacitance design allows a longer cable connection between the frequency converter and the motor
- In dry, damp or wet interiors
- 9YSLCY black design: also for outdoor applications, as well as direct burial, but not for USA or Canada
- Flame-retardant according to IEC 60332.1.2 & CSA FT 1

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of bare copper wires
- Core insulation: polypropylene (PP)
- Cores twisted concentrically (in protective conductors divided into three, this is between the gussets)
- Aluminium foil wrapped over the cores
- Screening: wrapped with braided tinned-copper wires
- 4-core design: transparent PVC outer sheath
- 3+3 core version: black PVC outer sheath, for outdoor use and direct burial

Technical data



Core identification code
Colours according to HD 308 S2 VDE 0293-308



Approvals
UL reg. for the USA: AWM Style 2570 or 20886, 1 kV 80° VW-1
UL reg. for CAN. AWM I/II A/B 1 kV 80° FT 1
EU: based on VDE 0276, 0250, 0207



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5



Minimum bending radius
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter



Nominal voltage
IEC U_c/U: 600/1000V
UL & CSA: 1000 V



Test voltage
4000 V



Protective conductor
This is distributed evenly in the gussets in protective conductors that are divided into three



Temperature range
Flexing UL/CSA: -5 °C to +80 °C; IEC: transparent model: -5 °C to +80 °C; black model: -5 °C to +90 °C
Fixed installation: UL/CSA: -40 °C to +80 °C; IEC: transparent model: -40 °C to +80 °C; black model: -40 °C to +90 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0037000	4 G 1,5	10,5	87,0	230
0037001	4 G 2,5	11,8	133,0	300
0037002	4 G 4	13,3	213,0	485
0037003	4 G 6	14,9	298,0	630
0037004	4 G 10	17,7	460,0	860
0037005	4 G 16	21,5	707,0	1290
0037006	4 G 25	26,3	1,100,0	1860
0037007	4 G 35	29,7	1,542,0	2610
0037008	4 G 50	34,1	2,206,0	2950
0037009	4 G 95	40,9	3,002,0	3950
0037010	4 G 95	45,4	4,004,0	5300
0037011	4 G 120	49,8	5,108,0	6600
0037012	4 G 150	56,1	6,225,0	7043
0037013	4 G 185	61,4	7,568,0	8384
0037014	4 G 240	67,9	9,940,0	12150
0037015	3 X 1,5 + 3 G 0,25	11,4	88,0	140
0037016	3 X 2,5 + 3 G 0,5	12,9	130,0	220
0037017	3 X 4 + 3 G 0,75	13,6	224,0	323
0037018	3 X 6 + 3 G 1,0	15,2	276,0	420
0037019	3 X 10 + 3 G 1,5	17,4	511,0	615
0037020	3 X 16 + 3 G 2,5	20,0	751,0	819
0037021	3 X 25 + 3 G 4	24,3	1,204,0	1325
0037022	3 X 35 + 3 G 6	27,5	1,535,0	1718
0037023	3 X 50 + 3 G 10	31,1	2,156,0	2399
0037024	3 X 70 + 3 G 10	37,1	2,980,0	3056
0037025	3 X 95 + 3 G 16	40,0	3,953,0	4162
0037026	3 X 120 + 3 G 16	42,6	4,836,0	5074
0037027	3 X 150 + 3 G 25	50,0	5,412,0	6128
0037028	3 X 185 + 3 G 35	55,6	7,077,0	7820

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO 2YSLCY-JB refer to page 90

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINDICHT® SM-PE-M refer to page 694
- SKINTOP® MS-M BRUSH refer to page 669

SERVO cables in acc. to SIEMENS® Standard 6FX 5008- Sensor leads for signal transmission systems and motor connection cables



Info

- Cost-saving alternative to the FX8 series
- for installations that are fixed or with occasional movements
- EMC-compliant



Benefits

- New motor & servomotor cables up to 6 mm²: low capacitance characteristics due to PP insulation
- Multi-standard= fewer part varieties = cost savings

Application range

- Servo and power drive systems
- Plant engineering
- Machine tool manufacture
- Printing machines

Product features

- Oil-resistant
- Flame-retardant according to IEC 60332.1.2 & CSA FT1

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Design according to SIEMENS® standard 6FX 5008
- Core insulation: up to 6 mm² = PP; 10 mm² and larger = PVC
- Core and pairs are twisted together
- Tinned-copper braiding
- Outer sheath made of special PVC compound
- Signal cables: green (RAL 6018)
- Motor and servomotor cables: orange (RAL 2003)

Technical data



Approvals

Power cable:
VDE-registered
UL/CSA AWM Style 2570
Signal cables:
UL/CSA AWM style 2502



Conductor stranding

Fine wire according to VDE 0295, class 5/IEC 60228 class 5



Minimum bending radius

For fixed installation: 5 x outer diameter
For flexible use:
15 x outer diameter



Nominal voltage

Signal cables:
- 30 V AC/DC (UL/CSA)
- 30 V AC (IEC)
Power cable:
- Power cores:
1000 V (UL/CSA)
600/1000 V (IEC)
- Control cores:
1000 V (UL/CSA)
30 V AC (IEC)



Test voltage

Power cable:
Power cores: 4000 V eff.
Control cores: 2000 V eff.
Signal cables: 500 V rms



Temperature range

Fixed installation: from -20°C to +80°C
Flexing: from -0°C to +60°C

Article number	Number of cores and mm ² per conductor	Reference article no.	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Signal cables					
0025724	4 x 2 x 0,38 + 4 x 0,5	6FX5008-1BD21	9,0	76,4	120
0025725	3 x (2 x 0,14) + 4 x 0,14 + 2 x 0,5	6FX5008-1BD41	8,9	63,0	100
0025726	3 x (2 x 0,14) + 4 x 0,14 + 2 x 0,5 + 4 x 0,23	6FX5008-1BD51	9,5	69,0	139
Motor cables					
00257001	4 G 1,5	6FX5008-1BB11 LC	8,0	88,0	131
00257011	4 G 2,5	6FX5008-1BB21 LC	9,6	132,0	219
00257021	4 G 4	6FX5008-1BB31 LC	11,0	195,0	312
00257031	4 G 6	6FX5008-1BB41 LC	13,1	280,0	380
0025704	4 G 10	6FX5008-1BB51	19,3	445,0	620
0025705	4 G 16	6FX5008-1BB61	23,3	715,0	1060
0025706	4 G 25	6FX5008-1BB25	26,9	1,110,0	1640
0025707	4 G 35	6FX5008-1BB35	30,3	1,540,0	2310
0025708	4 G 50	6FX5008-1BB50	36,5	2,160,0	3240
Servo cables					
00257151	4 G 1,5 + (2 x 1,5)	6FX5008-1BA11 LC	10,4	150,0	248
00257161	4 G 2,5 + (2 x 1,5)	6FX5008-1BA21 LC	12,0	194,0	310
00257171	4 G 4 + (2 x 1,5)	6FX5008-1BA31 LC	13,6	272,0	445
00257181	4 G 6 + (2 x 1,5)	6FX5008-1BA41 LC	15,6	351,0	554
0025719	4 G 10 + (2 x 1,5)	6FX5008-1BA51	21,0	536,0	806

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Siemens part designations (6FX5002/5008, 6FX7002/7008, 6FX8002/8008) are registered trademarks of Siemens AG, and are listed for comparison purposes only. DESINA® is a registered trademark of the German Machine Tool Builders' Association.

Cables for power chain use should only be handled on drums prior to installation.

Article numbers refer to genuine Lapp products.

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 796 CP refer to page 103
- SERVO cables in acc. to SIEMENS® Standard 6FX 8PLUS refer to page 104

Accessories

- Circular connectors refer to page 597
- SKINDICHT® EMC/Earthing refer to page 668

Servo applications

PVC sheath, approved

SERVO Cables in acc. to SEW® Standard

Combined power and control cable for servomotors with UL AWM approval



Info

- DESINA®-compliant
- For power and brake circuits
- EMC-compliant

■ Benefits

- Multi-standard= fewer part varieties = cost savings

■ Application range

- Specially designed to connect to SEW servomotors
- Connecting cable between servo controller and motor
- Plant engineering
- Machine tools
- Printing machines

■ Product features

- For fixed installation or applications with occasional movements
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2
- Flame-retardant according to UL VW1/CSA FT1

■ Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

■ Design

- Fine-wire strand made of bare copper wires
- Core insulation: TPE
- Control core triplet with laminated aluminium film and a layer of tinned-copper wires
- Cores twisted in short lay lengths
- Tinned-copper braiding
- PVC outer sheath, orange (RAL 2003)

■ Technical data

- Core identification code**
 Power: black cores with U, VV, WWW printing and 1 core gnye
 Control cores: black cores with numbers 1, 2 and 3
- Approvals**
 UL-AWM-Style 2570
- Based on**
 VDE 0250, 0281
- Specific insulation resistance**
 > 20 GOhm x cm
- Conductor stranding**
 Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
 Occasional flexing: 15 x outer diameter
 Fixed installation: 4 x outer diameter
- Nominal voltage**
 Power cores: IEC 750 V, UL 600 V
 Control cores: 1 mm² and 1.5 mm: IEC 350 V, UL 600 V
- Test voltage**
 2000 V
- Protective conductor**
 G = with GN-YE protective conductor
- Temperature range**
 Flexing: -10°C to +80°C
 Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0038060	4 G 1,5 + (3 x 1,0)	11.8	151.0	300
0038061	4 G 2,5 + (3 x 1,0)	13.4	212.9	370
0038062	4 G 4 + (3 x 1,0)	15.0	281.8	476
0038063	4 G 6 + (3 x 1,5)	17.0	392.8	625
0038064	4 G 10 + (3 x 1,5)	20.0	625.1	1024

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 SEW is a registered trademark of SEW Eurodrive GmbH & Co KG, Ernst-Blickle Str. 42, D-76646 Bruchsal
 Photographs are not to scale and do not represent detailed images of the respective products.

■ Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-M BRUSH refer to page 669

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

ÖLFLEX® SERVO FD 750 P

Combined power and control cable for servomotors



Info

- For power, brake and overheating monitoring circuits
- Fits servomotors from various manufacturers
- Please note: discontinued product! <Reduced range of sizes>



Benefits

- Well-proven, reliable

Application range

- Connecting cable between servo controller and motor
- In power chains or moving machine parts
- Plant engineering
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines

Product features

- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.
- Abrasion and cut-resistant
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC or TPE (control cores)
- Control core pairs: screened with laminated aluminium film and a layer of tinned-copper wires
- Core and pairs are twisted together
- Non-woven wrapping
- Outer sheath: co-extruded PVC-PUR compound, grey (RAL 7001)

Technical data

- Core identification code**
Supply cores: black with white numbers 1-3 according to VDE 0293 and GN/YE protective conductor
Control cores: black with white numbers 5-8 (numbering increases in line with cross-section); 0.34 mm² pairs: WH/BR/GN/YE
- Based on**
VDE 0250/0281/0282
- Specific insulation resistance**
> 20 GΩm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6* *) from 0.5 mm²
- Minimum bending radius**
For flexible use: 12 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
Power core: 600/1000 V
Control cores: 250 V AC
- Test voltage**
Power cores: 4000 V
Control cores: C/C: 1500 V, C/S: 750 V
- Protective conductor**
G = with gn-ye protective conductor
- Temperature range**
Flexing: -10°C to +70°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0036240	4 G 0,75 + 2 x (2 x 0,34 Std)	9.6	54.0	106
0036245	4 G 1,5 + 2 x (2 x 0,75 Std)	11.8	100.6	185
0036250	4 G 2,5 + 2 x (2 x 0,75 Std)	14.8	140.7	308
0036251	4 G 4 + (2 x 0,75 Std) + (2 x 1,0 Std)	16.4	216.4	420
0036252	4 G 6 + (2 x 0,75 Std) + (2 x 1,0 Std)	18.8	293.2	550
0036253	4 G 10 + (2 x 0,75 Std) + (2 x 1,0 Std)	22.9	446.0	804

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 755 P refer to page 96
- ÖLFLEX® SERVO FD 795 P refer to page 102

Accessories

- SKINTOP® ST-M refer to page 652
- SILVYN® CHAIN cable protection and guiding systems

Power chain applications

Servo applications - power drive systems

ÖLFLEX® SERVO FD 755 P

Super-flexible servomotor connection cables for long-distance power chains

LAPP KABEL STUÏTGART ÖLFLEX® SERVO FD 755 P CE



Info

- For power, brake and overheating monitoring circuits
- Please note: discontinued product! <Reduced range of sizes>
- MUD res. according to IEC61892-4 Annex D

Benefits

- Suitable for use with servomotor drive systems from leading manufacturers
- Well-proven, reliable
- Also suitable for mobile outdoor use
- Halogen-free

Application range

- Connecting cable between servo controller and motor
- In power chains or moving machine parts
- Plant engineering
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines

Product features

- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.
- Abrasion and cut-resistant
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2
- Flexible down to -40°C

Approvals



- For travel distances up to 100 m (horizontal)
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: TPE
- Control core pairs: screened with laminated aluminium film and a layer of tinned-copper wires
- Pairs and cores twisted together with polyester fibres in extremely short lay lengths
- Non-woven wrapping
- PUR outer sheath, grey (RAL 7001)

Technical data



Core identification code

Supply cores: black with white numbers 1-3 according to VDE 0293 and GN/YE protective conductor
Control cores: black with white numbers 5-8 (numbering increases in line with cross-section);
Versions with two control cores: numbers 5-6



Based on

VDE 0250/0281/0282



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6**). Control pairs fine-wire from 0.5 mm²



Minimum bending radius

For flexible use: 5 x outer diameter
Fixed installation: 3 x outer diameter



Nominal voltage

Supply cores: 600/1000 V
Operating voltage: control cores: 250 V AC



Test voltage

Supply cores: 4000 V
Control cores: C/C: 1500 V; C/S: 750 V



Protective conductor

G = with GN-YE protective conductor



Temperature range

Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0036350	4 G 1,5 + 2 x (2 x 0,75)	14.1	96.0	211
0036351	4 G 2,5 + 2 x (2 x 0,75)	15.1	134.0	259
0036353	4 G 6 + (2 x 0,75) + (2 x 1,0)	17.2	283.0	444
0036601	4 G 1,5 + (2 x 1,0)	11.6	86.4	180
0036602	4 G 2,5 + (2 x 1,0)	12.6	124.8	234
0036603	4 G 4 + (2 x 1,0)	14.7	182.4	320
0036604	4 G 6 + (2 x 1,0)	16.3	259.2	404
0036605	4 G 10 + (2 x 1,0)	20.2	413.0	635
0036606	4 G 16 + (2 x 1,5)	22.9	660.3	943
0036608	4 G 35 + (2 x 1,5)	31.3	1,389.9	1864

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 795 P refer to page 102

Accessories

- EPIC® CIRCON LS1 refer to page 614
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® SERVO FD 760 CP

Cable for speedometer



Info

- EMC-compliant
- Well-proven, reliable
- MUD res. according to IEC61892-4 Annex D



Benefits

- Thin, optimised for weight and volume
- Total screening prevents/reduces interference from neighbouring cables
- Also suitable for mobile outdoor use
- Halogen-free

Application range

- Connecting cable between servo controller and speed generators
- Plant engineering
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines

Product features

- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.
- Abrasion and cut-resistant
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2
- Flexible down to -40°C

Approvals



- For travel distances up to 100 m (horizontal)
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: TPE
- Cores twisted in short lay lengths
- Tinned-copper screen braiding or as wrapping (*with drain wire)
- Non-woven wrapping
- PUR outer sheath, grey (RAL 7001) or green (RAL 6018)

Technical data

- Core identification code**
0036 260 & 0036 760: bl, wh, rd, pk, gn, ye, bn, bk, gy
- Based on**
Core in accordance with VDE 0812/0281
Outer sheath in accordance with VDE 0250/0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
For flexible use: 12 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
48 V AC
Peak operating voltage: 450 V Upp
(not for power applications)
- Test voltage**
C/C-C/S 2000 - 1000 V
- Temperature range**
Flexing: -40°C to +75°C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0036260	9 X 0,5	9,4	73,0	144
0036760	9 X 0,5 DESINA®	9,4	73,0	144

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Circular connectors refer to page 597
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

ÖLFLEX® SERVO FD 770 CP

Encoder and resolver cables

LAPP KABEL STUÏGART ÖLFLEX® SERVO FD 770 CP



Info

- EMC-compliant
- Well-proven, reliable
- MUD res. according to IEC61892-4 Annex D

Benefits

- Thin, optimised for weight and volume
- Total screening prevents/reduces interference from neighbouring cables
- Also suitable for mobile outdoor use
- Halogen-free

Application range

- Plant engineering
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines

Product features

- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.
- Abrasion and cut-resistant
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2
- Flexible down to -40°C

Approvals



- For travel distances up to 100 m (horizontal)
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: TPE
- Cores (or core pairs) twisted in layers or bundles
- Non-woven wrapping
- Tinned copper screen braiding (*with drain wire)
- PUR outer sheath, grey (RAL 7001)

Technical data



Core identification code

0036 270 pairs: rd/bk, bn/gn, gy/pk, bl/vt; single core: wh, bn
 0036 280 pairs: wh/bn, gn/ye, gy/pk, bl/rd, bk/vt, gy-pk/rd-bl; single core: wh, bn
 0036 275 cores 0.14: wh, bn, gn, ye, gy, pk, bl, rd, bk, vt; cores 0.5: wh, bn0036 277 cores 0.14: wh, bn,
 0036 641 see 0036 26
 0036 278 single cores: cores 0.14 DIN 47100 from grey: 0.5 mm²: wh, bn, gn, ye
 0036 281 pairs: rd/bk, bn/gn, ye/vt, gy/pk; single core: wh, bl, whgn, bngn
 0036 268 pairs: gn/ye, rd/bl, gy/pk; single core: wh, bn
 0036 269: 0.14 mm² ye,



Based on

Core in accordance with VDE 0812/0281
 Outer sheath in accordance with VDE 0250/0282



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

Extra-fine wire according to VDE 0295, class 6/
 IEC 60228 class 6



Minimum bending radius

For flexible use: 12 x outer diameter
 Fixed installation:
 4 x outer diameter



Nominal voltage

48 V AC
 Peak operating voltage: 350 V Upp
 (not for power applications)



Test voltage

C/C-C/S 2000 - 1000 V



Temperature range

Flexing: -40°C to +75°C
 Fixed installation: -50°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0036270	4 x 2 x 0,25 + 2 x 1,0	8.9	72.0	122
0036280	6 x 2 x 0,25 + 2 x 0,5	10.3	87.0	152
0036275	10 x 0,14 + 2 x 0,5	7.7	39.3	82
0036277	10 x 0,14 + 4 x 0,5	8.1	51.1	97
0036278	15 x 0,14 + 4 x 0,5	8.7	59.3	113
0036281	4 x 2 x 0,14 + 4 x 0,5	8.2	48.8	91
0036268	3 x (2 x 0,14) + 2 x (0,5)	8.2	60.0	122
0036269	3 x (2 x 0,14) + (2 x 0,14 + 2 x 0,5) + (4 x 0,22 + 2 x 0,14)	10.0	86.0	111

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Circular connectors refer to page 597
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® SERVO FD 770 CP DESINA®

Encoder and resolver cables, DESINA® green

LAPP KABEL STUÏTGART ÖLFLEX® SERVO FD 770 CP DESINA®



Info

- EMC-compliant
- Well-proven, reliable
- MUD res. according to IEC61892-4 Annex D

Benefits

- Thin, optimised for weight and volume
- Total screening prevents/reduces interference from neighbouring cables
- Also suitable for mobile outdoor use
- Halogen-free

Application range

- Plant engineering
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines

Product features

- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table TO of the appendix of the Lapp catalogue.
- Abrasion and cut-resistant
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2
- Flexible down to -40°C

Approvals



- For travel distances up to 100 m (horizontal)
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: TPE
- Cores (or core pairs) twisted in layers or bundles
- Non-woven wrapping
- Tinned copper screen braiding (*with drain wire)
- PUR outer sheath, green (RAL 6018)

Technical data

- Core identification code**
refer to 770 CP
- Based on**
Core in accordance with VDE 0812/0281 KRT
Standard version with UL-approval, for multi-wire copper conductors with a cross-sectional range of 10 - 400 mm²
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire acc. to VDE 0295, class 6/ IEC 60228 class 6
- Minimum bending radius**
For flexible use: 12 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
48 V AC
Peak operating voltage: 350 V Upp
(not for power applications)
- Test voltage**
C/C-C/S 2000 - 1000 V
- Temperature range**
Flexing: -40°C to +75°C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0036640	2 x 2 x 0,14 + 2 x (2 x 0,14) + 4 x 0,5 + (4 x 0,14)	8.1	65.4	105
0036641	3 x (2 x 0,14) + (2x 0,14 + 2 x 0,5) + (4 x 0,22 + 2 x 0,14)	10.0	86.0	111
0036642	4 x 2 x 0,38 + 4 x 0,5	9.8	84.2	144
0036901	4 x 2 x 0,25	7.4	43.2	89

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
DESINA® is a registered trademark of the German Machine Tool Builders' Association
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SERVO cables in acc. to SIEMENS® Standard 6FX 8PLUS refer to page 104
- ÖLFLEX® SERVO FD 770 CP refer to page 98
- Special Encoder and resolver cables refer to page 107

Accessories

- Circular connectors refer to page 597
- SILVYN® CHAIN cable protection and guiding systems

Power chain applications

Servo applications - power drive systems

ÖLFLEX® SERVO FD 781 CY

Cost-effective, low-capacitance, screened servomotor cable

LAPP KABEL STUFGART ÖLFLEX® SERVO FD 781 CY
4G2,5 DESINA® CE



Info

- EMC-compliant

Benefits

- Well-priced
- Well-proven, reliable

Application range

- Connecting cable between Frequency converter and motor
- For power circuits in machine cabling
- In dry, damp or wet interiors with normal mechanical stress conditions
- Only for outdoor use within the indicated operating temperature range, with UV-protection

Product features

- Low capacitance design allows a longer cable connection between the frequency converter and the motor
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2
- Low-adhesive surface
- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: polypropylene (PP)
- Cores twisted in short lay lengths
- Non-woven wrapping
- Tinned-copper braiding
- PVC outer sheath, orange (RAL 2003)

Technical data



Core identification code

Black with white numbers acc. to VDE 0293



Based on

VDE 0250/0281/0282



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6



Minimum bending radius

Flexible use: 7.5 x outer diameter
Fixed installation:
4 x outer diameter



Nominal voltage

U₀/U:
0.6/1kV



Test voltage

4000 V



Protective conductor

G = with gn-ye protective conductor



Temperature range

Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0036320	4 G 1.5	9.8	89.0	157
0036321	4 G 2.5	11.9	133.8	233
0036322	4 G 4	13.5	210.9	335
0036324	4 G 10	19.7	488.2	747
0036325	4 G 16	23.9	744.8	1109
0036327	4 G 35	33.3	1,565.4	2264
0036328	4 G 50	38.3	2,174.9	3090

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 796 CP refer to page 103
- SERVO cables in acc. to SIEMENS® Standard 6FX 8PLUS refer to page 104

Accessories

- Rectangular connectors refer to page 450
- EPIC® CIRCON LS1 refer to page 614
- SKINDICHT® EMC/Earthing refer to page 668
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

ÖLFLEX® SERVO FD 785 P

Extra-flexible 0.6/1 kV motor supply cable for long travel distances

LAPP KABEL STUTTGART ÖLFLEX® SERVO FD 785 P CE



Info

- Smallest bending radii of all FD cables
- Please note: discontinued product!
<Reduced range of sizes>
- MUD res. according to IEC61892-4 Annex D

Benefits

- Well-proven, reliable
- Flexible down to -40°C

Application range

- Power circuits for electrical equipments used in automation engineering
- For power circuits in machine cabling
- In dry, damp or wet interiors with normal mechanical stress conditions
- For outdoor applications
- For use in 690 V industrial power circuits

Product features

- Low capacitance design allows a longer cable connection between the frequency converter and the motor
- Oil-resistant
- Halogen-free and flame-retardant (IEC 60332.1.2)
- Low-adhesive surface
- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 100 m (horizontal)
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: Based on TPE
- Cores twisted in extremely short lay lengths
- Non-woven wrapping
- PUR outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
VDE 0250/0281/0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
For flexible use: 5 x outer diameter
Fixed installation: 3 x outer diameter
- Nominal voltage**
600/1000 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
- Temperature range**
Flexing: -40°C to +80°C
Fixed installation: -50°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0036380	4 G 1.5	10.0	58.0	129
0036381	4 G 2.5	11.9	96.0	187
0036382	4 G 4	13.7	154.0	273
0036383	4 G 6	15.1	231.0	358
0036384	4 G 10	19.6	384.0	585
0036385	4 G 16	22.8	615.0	863
0036650	5 G 1.5	11.2	72.0	166
0036651	5 G 2.5	13.3	120.0	246
0036652	5 G 4	15.2	192.0	350
0036653	5 G 6	16.8	288.0	473
0036655	5 G 16	25.5	768.0	1168
0036656	5 G 25	30.8	1,200.0	1789

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 795 P refer to page 102

Accessories

- SILVYN® CHAIN cable protection and guiding systems

Power chain applications

Servo applications - power drive systems, approved

ÖLFLEX® SERVO FD 795 P

Super-flexible servomotor connection cables for power chain applications for the European and North American markets

LAPP KABEL STUTTGART ÖLFLEX® SERVO FD 795 P DESINA® CE



Info

- For power, brake and overheating monitoring circuits
- Please note: discontinued product! <Reduced range of sizes>

Benefits

- Multi-standard= fewer part varieties = cost savings
- Also suitable for mobile outdoor use

Application range

- Connecting cable between servo controller and motor
- Connecting cable between Frequency converter and motor
- Plant engineering
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines

Product features

- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.
- Abrasion and cut-resistant
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2 & CSA FT 1
- Flexible down to -40°C

Approvals



- For travel distances up to 100 m (horizontal)
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3
- DESINA®-compliant

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: TPE
- Individual design depending on the item: power cores with or without one pair, or with two control core pairs, in pairs, with double screening, twisted together in short lay lengths
- Non-woven wrapping
- PUR outer sheath, black (RAL 9005)

Technical data



Core identification code
Supply cores: black with white numbers 1-3 according to VDE 0293 and GN/YE protective conductor
Control cores: black with white numbers 5-6



Approvals
Without control pairs: UL AWM Style 20234
With control pairs UL-AWM-Style 20235



Based on
VDE 0250/0281/0282



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6



Minimum bending radius
For flexible use: 5 x outer diameter
Fixed installation: 3 x outer diameter



Nominal voltage
IEC: power cores: 600/1000 V
Control cores: U: 250 V AC
UL: without control pairs: 600 V, with control pairs: depends on the final application



Test voltage
Power cores: 4000 V
Control cores: 750 V



Protective conductor
G = with GN-YE protective conductor



Temperature range
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
3028268	4G 1,5 + (2 x 1,0)	13.0	81.4	166
3028269	4G 2,5 + (2 x 1,0)	13.4	119.8	185
3028270	4G 4 + (2 x 1,0)	14.8	177.4	243
3028271	4G 6 + (2 x 1,0)	16.4	254.2	292
3028272	4G 10 + (2 x 1,0)	20.8	412.4	690
3028479	4 G 0,75	9.7	28.8	103
3028277	4 G 2,5	11.7	96.0	191
3028278	4 G 4	13.7	153.6	278
3028279	4 G 6	15.1	230.4	376
3028281	4 G 16	26.5	614.4	1058
3028282	4 G 25	30.5	960.0	1535
3028283	4 G 35	34.5	1,344.0	2035

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 750 P refer to page 95
- ÖLFLEX® SERVO FD 755 P refer to page 96

Accessories

- Circular connectors refer to page 597
- SKINDICHT® EMC/Earthing refer to page 668
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

ÖLFLEX® SERVO FD 796 CP

LAPP KABEL STUÏGART ÖLFLEX® SERVO FD 796 CP CE



Info

- New high-end version! For very dynamic motion sequences
- Slim = less space required
- Multiple Certifications

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Multi-standard= fewer part varieties = cost savings
- Suitable for the most important servomotor drive systems of leading manufacturers.
- Benefit: The modified design of the control pairs brings less voltage drop and allows significant higher working voltage of the associated circuits
- To substitute 7 ÖLFLEX SERVO FD product lines:
755CP/-755CP DESINA/-781CP/-785CP/-785CP DESINA/-790CP/-795CP

Application range

- Connecting cable between servo controller and motor
- In power chains or moving machine parts
- For use in assembling- & pick-and-place machines
- Particularly in wet areas of machine tools and transfer lines.
- For assembly lines, production lines in all kinds of machines

Product features

- Dynamic performance in power chains: Accelerations up to 50m/s². Travel speed: up to 5m/s. Travel lengths up to 100m.
- Low-capacitance design: This may result in lower EMI interference, depending on the drive's electrical operating conditions.
- Halogen-free materials
- Flame retardancy: UL/CSA: VW-1, FT1. IEC/EN: 60332.1-2
- Oil resistant

Approvals



- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: Polypropylene (PP)
- According P/N individual design: Power cores without, or with one pair. or with two control core pairs arranged as pairs, twisted together in short lay lengths.
- Non-woven wrapping
- Tinned-copper braiding
- PUR outer sheath, orange (RAL 2003)

Technical data

- Core identification code**
Power: black cores with marking U/L1/C/L+; V/L2; W/L3/D/L-and 1 green-yellow core
Optional Design with one pair of control cores: black; white. Two pairs of control cores: black with white numbers: 5, 6, 7, 8
- Approvals**
VDE reg submitted
UL AWM Style 20234
CSA AWM I/II A/B 1000V 80° FT 1
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6
- Minimum bending radius**
For flexible applications:
7.5 x outside diameter (1.5-16mm²)
10 x outside diameter (25-50mm²)
Fixed installation: 4 x outer diameter
- Nominal voltage**
IEC: Power and control cores: U0/U: 600/1000 V
UL & CSA: 1000V
- Test voltage**
Core/Core: 4 kV
Core/Screen: 4 kV
- Protective conductor**
G = with GN-YE protective conductor
- Temperature range**
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO FD 796 CP				
0027950	4 G 1,5	9.2	79.0	140
0027951	4 G 2,5	10.6	129.0	197
0027952	4 G 4	11.9	186.0	268
0027953	4 G 6	14.4	296.0	397
0027954	4 G 10	17.6	449.0	591
0027955	4 G 16	22.0	716.0	955
0027956	4 G 25	25.2	1,073.0	1337
0027957	4 G 35	28.7	1,480.0	1769
0027958	4 G 50	33.4	2,115.0	2468
0027959	4 G 1,5 + (2 x 1,5)	12.0	135.0	261
0027960	4 G 2,5 + (2 x 1,5)	13.8	188.0	318
0027961	4 G 4 + (2 x 1,5)	14.9	235.0	385
0027962	4 G 6 + (2 x 1,5)	17.0	329.0	486

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0027963	4 G 10 + (2 x 1,5)	19.4	515.0	701
0027964	4 G 16 + (2 x 1,5)	23.8	757.0	1048
0027965	4 G 25 + (2 x 1,5)	27.0	1,147.0	1532
0027966	4 G 35 + (2 x 1,5)	31.2	1,538.0	2097
0027967	4 G 50 + (2 x 1,5)	34.7	2,181.0	2721
0027969	4 G 1,5 + 2 x (2 x 0,75)	12.2	159.0	313
0027970	4 G 2,5 + 2 x (2 x 1,0)	14.6	207.0	395
0027971	4 G 4 + (2 x 1,0) + (2 x 1,5)	16.3	344.0	485
0027972	4 G 6 + (2 x 1,0) + (2 x 1,5)	18.1	436.0	588
0027973	4 G 10 + (2 x 1,0) + (2 x 1,5)	21.8	610.0	819
0027974	4 G 16 + 2 x (2 x 1,5)	25.5	801.0	1135
0027975	4 G 25 + 2 x (2 x 1,5)	28.9	1,187.0	1559
0027976	4 G 35 + 2 x (2 x 1,5)	31.4	1,588.0	2093
0027977	4 G 50 + 2 x (2 x 2,5)	36.8	2,557.0	2920

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SERVO cables in acc. to SIEMENS® Standard 6FX 8PLUS refer to page 104
- SERVO Cables in acc. to INDRAMAT® Standard INK refer to page 105

Accessories

- Circular connectors refer to page 597
- SKINDICHT® EMC/Earthing refer to page 668

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Power chain applications

Servo applications - power drive systems, approved

SERVO cables in acc. to SIEMENS® Standard 6FX 8PLUS

Sensor leads for signal transmission systems and motor connection cables



Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Multi-standard= fewer part varieties = cost savings

Application range

- Connecting cable between servo controller and encoder/resolver
- Connecting cable between servo controller and motor
- For use in assembling & pick-and-place machinery
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines

Product features

- Designed for up to 10 million bending/un-bending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.
- Torsion-resistant up to ±30°/m
- Abrasion and cut-resistant, halogen-free, oil-resistant
- Flame-retardant according to IEC 60332.1.2 & CSA FT 1

Approvals



- For travel distances up to 100 m (horizontal)
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3
- DESINA®-compliant

Design

- Extra-fine strand made of copper wires:
 - > Signal cables: tinned
 - > Power cables: bare
- Core insulation: polypropylene (PP)
- Tinned-copper braiding
- PUR outer sheath
- Signal cables: green (RAL 6018)
- Servomotor cables: orange (RAL 2003)



Info

- **New high-end version!** For very dynamic motion sequences
- Servo drives
- Signal sensor/encoder cable

Technical data



Approvals

Power cable:
VDE-registered
UL AWM Style 21223
CSA AWM 1/II, A/B 1000 V 80° FT 1
Sensor leads: UL/CSA AWM Style 20236



Conductor stranding

Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6



Minimum bending radius

Power cable:
Fixed: 4 x D
Dynamic:
1.5 mm² - 16 mm²: 7.5 x D
25 mm² - 50 mm²: 10 x D
Signal cable:
Fixed: 4 x D
Dynamic: 8 x D



Nominal voltage

Signal cables: 30 V AC/DC
Power cable:
- Power cores:
600/1000 V (IEC)
1000 V (UL/CSA)
- Control cores:
24 V AC/DC (IEC)
1000 V (UL/CSA)



Test voltage

Power cable: 4 KV
Signal cables: 500 V



Temperature range

Flexing: -20°C to +60°C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm² per conductor	Reference article no.	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Feedback / signal cables					
00277101	8 x 2 x 0,18	6FX8008-1BD11	7.8	54.0	85
00277111	4 x 2 x 0,34 + 4 x 0,5	6FX8008-1BD21	8.9	77.0	120
00277121	3 x (2 x 0,14) + 2 x (0,5)	6FX8008-1BD31	8.9	69.0	113
00277131	3 x (2 x 0,14) + 4 x 0,14 + 2 x 0,5	6FX8008-1BD41	8.8	66.0	101
00277141	3 x (2 x 0,14) + 4 x 0,14 + 2 x 0,5 + 4 x 0,22	6FX8008-1BD51	9.4	86.0	139
00277151	4 x 2 x 0,18	6FX8008-1BD61	6.4	34.2	53
00277161	2 x 2 x 0,18	6FX8008-1BD71	5.0	23.1	36
00277171	12 x 0,22	6FX8008-1BD81	6.9	48.0	76
00277992	2 x 2 x 0,15 + 1 x 2 x 0,38	6FX8008-2DC00	7.2	39.0	67
Motor cables					
0027784	4 G 1.5	6FX8008-1BB11-Plus	9.1	90.0	150
0027785	4 G 2.5	6FX8008-1BB21-Plus	10.6	132.0	220
0027786	4 G 4	6FX8008-1BB31-Plus	11.9	204.0	300
0027787	4 G 6	6FX8008-1BB41-Plus	14.5	315.0	450
0027788	4 G 10	6FX8008-1BB51-Plus	17.5	488.0	660
0027789	4 G 16	6FX8008-1BB61-Plus	21.6	769.0	1010
Servo cables					
0027790	4 G 1,5 + (2 x 1,5)	6FX8008-1BA11-Plus	11.6	146.0	230
0027791	4 G 2,5 + (2 x 1,5)	6FX8008-1BA21-Plus	13.4	187.0	300
0027792	4 G 4 + (2 x 1,5)	6FX8008-1BA31-Plus	14.8	258.0	380
0027793	4 G 6 + (2 x 1,5)	6FX8008-1BA41-Plus	16.8	365.0	530
0027794	4 G 10 + (2 x 1,5)	6FX8008-1BA51-Plus	19.4	560.0	765
0027795	4 G 16 + (2 x 1,5)	6FX8008-1BA61-Plus	23.1	816.0	1090
0027796	4 G 25 + (2 x 1,5)	6FX8008-1BA25-Plus	26.6	1,166.0	1530
0027797	4 G 35 + (2 x 1,5)	6FX8008-1BA35-Plus	30.9	1,554.0	2040
0027798	4 G 50 + (2 x 1,5)	6FX8008-1BA50-Plus	34.0	2,188.0	2760

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Siemens part designations (6FX5002/5008, 6FX7002/7008, 6FX8002/8008) are registered trademarks of Siemens AG, and are listed for comparison purposes only

Cables for power chain use should only be handled on drums prior to installation.

Article numbers refer to genuine Lapp products.

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 796 CP refer to page 103

Accessories

- Circular connectors refer to page 597
- SKINDICHT® EMC/Earthing refer to page 668
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

SERVO cables in acc. to INDRAMAT® Standard INK

Sensor leads for signal transmission systems and motor connection cables



Info

- Signal sensor/encoder cable
- Servo drives
- EMC-compliant



Benefits

- Multi-standard= fewer part varieties = cost savings
- Also suitable for mobile outdoor use

Application range

- Connecting cable between servo controller and encoder/resolver
- Connecting cable between servo controller and motor
- Plant engineering
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines

Product features

- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.
- Abrasion and cut-resistant
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2 & CSA FT1
- Halogen-free

Approvals



- For travel distances up to 100 m (horizontal)
- For use in power chains! Please comply with the assembly guidelines listed in Appendix T3.

Design

- In accordance with Indramat standard INK (also suitable for pre-assembled versions, IKS and IKG)
- Core insulation: TPE
- Refer to data sheet (available upon request) for more details
- Tinned-copper braiding
- PUR outer sheath, orange (RAL 2003)

Technical data



Approvals

Power cable:
UL style 20234
Signal cables:
UL Style 20236



Conductor stranding

Extra-fine wire according to IEC 60228 class 6



Minimum bending radius

Power cable:
Fixed installation: 4 x outer diameter
For flexible use: 7.5 x outer diameter
Signal cables:
Fixed installation: 5 x outer diameter
For flexible use: 10 x D



Nominal voltage

Power cable:
- Power cores:
600/1000 V (IEC)
1000 V (UL/CSA)
- Control cores:
250 V AC (IEC)
1000 V (UL/CSA)
Signalling cables: 300/300 V (IEC), 300 V (UL/CSA)



Test voltage

Control cores/signal cores: 500 V rms
Signal cables: 500 V rms



Temperature range

Fixed installation: -50°C to +80°C
Flexing: -30°C to +80°C

Article number	Number of cores and mm² per conductor	Reference article no.	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Feedback / encoder / resolver cables					
7072400	4 x 2 x 0,25 + 2 x 1,0	INK-0209	8.8	74.0	120
7072401	4 x 2 x 0,25 + 2 x 0,5	INK-0448	8.5	70.0	100
7072402	9 x 0,5	INK-0208	8.8	75.0	126
7072414	4 x 1,0 + 4 x 2 x 0,14 + 4 x 0,14	INK-0532	9.7	81.0	140
7072415	2 x (2 x 0,25) + 2 x 0,5	INK-0234	8.7	46.0	90
7072416	2 x 2 x 0,25 + 2 x 0,5	INK-0750	7.6	35.0	92
Servo cables					
7072417	4 G 0,75 + 2 x 0,5	INK-0670	10.0	73.0	132
7072403	4 G 1,0 + 2 x (2 x 0,75)	INK-0653	11.5	170.0	226
7072404	4 G 1,5 + 2 x (2 x 0,75)	INK-0650	12.2	189.0	268
7072405	4 G 2,5 + 2 x (2 x 1,0)	INK-0602	15.1	212.0	320
7072406	4 G 4 + (2 x 1,0) + (2 x 1,5)	INK-0603	16.0	306.0	470
7072407	4 G 6 + (2 x 1,0) + (2 x 1,5)	INK-0604	18.8	366.0	600
7072408	4 G 10 + (2 x 1,0) + (2 x 1,5)	INK-0605	22.0	565.0	850
7072409	4 G 16 + 2 x (2 x 1,5)	INK-0606	25.2	838.0	1020
7072410	4 G 25 + 2 x (2 x 1,5)	INK-0607	28.0	1,231.0	1420

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Indramat part designations (IKG, IKS, INK, INS, RKL and RKG) are registered trademarks of Bosch Rexroth AG, and are listed for comparison purposes only.

Cables for power chain use should only be handled on drums prior to installation.

Article numbers refer to genuine Lapp products.

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 796 CP refer to page 103

Accessories

- Circular connectors refer to page 597
- SKINDICHT® EMC/Earthing refer to page 668
- SILVYN® CHAIN cable protection and guiding systems

Power chain applications

Servo applications - power drive systems, approved

SERVO cables in acc. to LENZE® Standard
 Sensor leads for signal transmission systems and motor connection cables



Info

- Signal sensor/encoder cable
- Servo drives
- EMC-compliant

Benefits

- Motor cables with low-capacitance
- Multi-standard= fewer part varieties = cost savings

Application range

- Connecting cable between servo controller and encoder/resolver
- Connecting cable between servo controller and motor
- Plant engineering
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines

Approvals



- Designed for power chain use: for travel distances up to 100 m (horizontal)
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Design according to LENZE® standard:
- Designs for fixed installation: PVC outer sheath, flame-retardant in accordance with IEC 332.1, UL/CSA-approved PVC core insulation.
- Designs for highly flexible use: oil-resistant PUR sheath in accordance with VDE472-803 Part B, flame-retardant in accordance with IEC 60332.1-2, TPE core insulation.
- Refer to data sheet (available upon request) for more details
- Signal cables: green (RAL 6018)
- Servomotor cables: orange (RAL 2003)

Technical data



Core identification code

Encoder cables
 - 7072508 (fixed installation)
 bk/ye+bk/gn+bk/rd+bk/bl + bk/wt
 - 7072517 (flexible installation)
 gn/ye+bl/rd+gy/pk+bk/vi + bn/wt
 Resolver cables:
 - 7072507 (fixed installation)
 black/yellow + black/green + black/red + black/white
 - 7072516 (flexible application)
 green/yellow + blue/red + grey/pink + brown/white



Approvals

Resolver and encoder cable:
 UL AWM Style 2464 for fixed installation versions, Style 21165 for highly flexible applications.
 Motor cable:
 UL AWM Style 2570 for fixed installation version; Style 20940 for high flexibility use.



Minimum bending radius

Flexible use: 10 x outer diameter
 Fixed installation: 7.5 x cable diameter



Nominal voltage

Resolver and encoder cable:
 30 V (VDE), 300 V (UL/CSA)
 Motor cable:
 - Power cores: 0.6/1000 V (VDE), 600 V (UL/CSA).



Test voltage

Resolver and encoder cable:
 1.5 kV
 Motor cable:
 - Power cores: 4 kV
 - Control cores: 2 kV



Temperature range

Flexing: -5°C to +70°C
 Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Motor cables for fixed installation				
7072500	4 G 1,0 + (2 x 0,5)	10.0	81.0	128
7072501	4 G 1,5 + (2 x 0,5)	11.2	106.0	173
7072502	4 G 2,5 + (2 x 0,5)	12.3	153.0	244
Resolver & encoder cables for fixed installation				
7072507	3 x (2 x 0,14) + 1 x (2 x 0,5)	9.3	43.0	91
7072508	4 x (2 x 0,14) + 1 x (2 x 1,0)	11.0	65.0	136
Motor cables for power chain application				
7072509	4 G 1,0 + (2 x 0,5)	10.0	81.0	151

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
7072510	4 G 1,5 + (2 x 0,5)	11.5	106.0	192
7072511	4 G 2,5 + (2 x 0,5)	13.2	153.0	271
7072512	4 G 4 + (2 x 1,0)	14.6	235.0	373
7072513	4 G 6 + (2 x 1,0)	16.8	316.0	477
7072514	4 G 10 + (2 x 1,0)	20.1	513.0	710
7072515	4 G 16 + (2 x 1,0)	23.8	710.0	1015
Resolver & encoder cable for power chain applications				
7072516	3 x (2 x 0,14) + 1 x (2 x 0,5)	10.0	44.0	107
7072517	4 x (2 x 0,14) + 1 x (2 x 1,0)	11.5	65.0	145

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Lenze® part designations (EWLM_, EWLR_, EWLE_, EWLL_, EYL und EYP) are registered trademarks of Lenze® AG, and are listed for comparison purposes only. DESINA® is a registered trademark of the German Machine Tool Builders' Association.

Cables for power chain use should only be handled on drums prior to installation.

Article numbers refer to genuine Lapp products.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Circular connectors refer to page 597
- SKINDICHT® EMC/Earthing refer to page 668

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

Special Encoder and resolver cables

Compatible with various drive systems



Info

- Compatible with the encoder manufacturers listed below



Benefits

- Well-proven, reliable
- Multi-standard= fewer part varieties = cost savings

Application range

- Highly flexible encoder and resolver cables that are designed for use in power chains
- Servo drives and servo assemblies
- Plant engineering
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines

Product features

- Abrasion and cut-resistant
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2 & CSA FT1

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Core insulation: refer to table
- Refer to data sheet (available upon request) for more details
- PUR outer sheath
- Outer sheath colour: see part table

Technical data



General

More technical information of the above-mentioned servo cables are available upon request.

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Colour	Copper index (kg/km)	Weight (kg/km)
Suitable for Heidenhain					
70388718	4 x 2 x 0,14 + 4 x 0,5	8.5	black	48.0	92
70388719	3 x (2 x 0,14) + 2 x (0,5)	8.3	black	64.0	100
70388720	3 x (2 x 0,14) + 2 x (1,0)	9.1	black	64.0	115
70388721	4 x 2 x 0,14 + 4 x 0,5 + (4 x 0,14)	8.3	black	56.0	102
Suitable for ELAU					
70388722	3 x 2 x 0,25 + 2 x 0,5	8.4	green	44.0	95
Suitable for KEB					
70388724	3 x (2 x 0,14) + 2 x (0,5)	8.1	orange	64.0	100
Suitable for Berger Lahr					
70388726	5 x 2 x 0,25 + 2 x 0,5	9.5	green	56.0	120
Suitable for B & R					
70388727	3 x 2 x 24AWG	6.5	green	28.0	60
70388728	5 x 2 x 0,14 + 2 x 0,5	7.8	green	40.0	80
Suitable for FANUC					
70388730	5 x 0,5 + 2 x 2 x 0,18	7.6	green	94.0	169
70388731	2 x 0,5 + 4 x 2 x 0,22	7.6	green	72.0	120
70388732	3 x 2 x 0,18 + 6 x 0,5	8.7	green	105.0	189
70388733	3 x 2 x 0,18 + 6 x 1,0	8.7	green	140.0	252
70388734	5 x 2 x 0,18 + 6 x 0,5	8.7	green	114.0	205
70388735	10 x 2 x 24 AWG	9.0	green	60.0	121

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

The drive systems (Heidenhain, Elau, KEB, Controles Techniques, Berger Lahr, B & R, Fanuc) are registered trademarks that are listed for comparison purposes only. DESINA® is a registered trademark of the German Machine Tool Builders' Association.

Cables for power chain use should only be handled on drums prior to installation.

Article numbers refer to genuine Lapp products.

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 770 CP refer to page 98
- ÖLFLEX® SERVO FD 770 CP DESINA® refer to page 99
- SERVO cables in acc. to SIEMENS® Standard 6FX 8PLUS refer to page 104
- SERVO cables in acc. to INDRAMAT® Standard INK refer to page 105

Accessories

- Circular connectors refer to page 597
- SKINDICHT® EMC/Earthing refer to page 668
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD CLASSIC 810

PVC-insulated, numbered, PVC sheath

LAPP KABEL STUUTGART ÖLFLEX® FD CLASSIC 810 CE



Info

- Bestseller among the FD power chain cables
- Well-proven, reliable

Benefits

- Well-proven, reliable
- Cost-effective solution

Application range

- In power chains or moving machine parts
- Suitable for use in measuring, control and regulating circuits
- Power circuits for electrical equipments used in automation engineering
- Assembly lines, production lines, in all kinds of machines
- Plant engineering

Product features

- Low-adhesive surface
- Flame-retardant according to IEC 60332.1.2
- In damp or wet interiors
- Designed for up to 5 million bending/un-bending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.
- Only for outdoor use within the indicated operating temperature range, with UV-protection

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- PVC outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
Core in accordance with VDE 0245/0281
Outer sheath in accordance with VDE 0245/0281
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
For flexible use: 7.5 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
U₀/U:
300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: 0°C to +70°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026100	2 X 0.5	5.3	10.0	40
0026101	3 G 0.5	5.7	15.0	48
0026102	4 G 0.5	6.3	19.2	58
0026103	5 G 0.5	6.8	24.0	67
0026104	7 G 0.5	8.0	34.0	88
0026105	12 G 0.5	9.5	58.0	136
0026106	18 G 0.5	11.4	86.4	195
0026107	25 G 0.5	13.7	120.0	274
0026108	30 G 0.5	14.3	144.0	312
0026109	34 G 0.5	15.6	164.0	359
0026110	50 G 0.5	18.5	240.0	515
0026119	2 X 0.75	5.7	15.0	49
0026120	3 G 0.75	6.2	22.0	60
0026121	4 G 0.75	6.8	29.0	73
0026122	5 G 0.75	7.4	37.0	86
0026123	7 G 0.75	8.9	51.0	117
0026124	12 G 0.75	10.6	87.0	181
0026125	16 G 0.75	12.0	116.0	234
0026126	18 G 0.75	12.7	130.0	259
0026127	25 G 0.75	15.2	181.0	363
0026130	2 X 1.0	6.1	19.0	58
0026131	3 G 1.0	6.6	29.0	72
0026132	4 G 1.0	7.3	39.0	88
0026133	5 G 1.0	8.0	48.0	104
0026134	7 G 1.0	9.6	67.0	142
0026135	12 G 1.0	11.4	115.0	221
0026136	14 G 1.0	12.3	134.4	258
0026137	16 G 1.0	13.0	153.0	287
0026138	18 G 1.0	13.9	173.0	324
0026139	25 G 1.0	16.4	240.0	445
0026140	26 G 1.0	16.4	249.6	459
0026141	34 G 1.0	18.9	326.4	595

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026142	41 G 1.0	20.6	394.0	712
0026143	50 G 1.0	22.3	480.0	854
0026144	65 G 1.0	25.4	624.0	1097
0026149	2 X 1.5	6.8	29.0	74
0026150	3 G 1.5	7.4	43.2	93
0026151	4 G 1.5	8.1	58.0	114
0026152	5 G 1.5	9.1	72.0	139
0026153	7 G 1.5	10.9	101.0	189
0026154	12 G 1.5	12.9	173.0	295
0026156	18 G 1.5	15.6	259.0	429
0026157	25 G 1.5	18.6	360.0	597
0026158	26 G 1.5	18.6	374.4	615
0026159	34 G 1.5	21.1	489.6	783
0026160	41 G 1.5	23.0	613.0	936
0026161	42 G 1.5	23.0	629.0	954
0026162	50 G 1.5	25.0	720.0	1134
0026170	3 G 2.5	9.0	72.0	145
0026171	4 G 2.5	10.0	96.0	179
0026172	5 G 2.5	11.2	120.0	218
0026173	7 G 2.5	13.6	168.0	303
0026174	12 G 2.5	16.0	288.0	473
0026175	14 G 2.5	17.2	336.0	548
0026180	3 G 4	10.6	120.0	214
0026181	4 G 4	11.7	160.0	266
0026182	5 G 4	13.1	200.0	325
0026183	4 G 6	13.9	223.0	396
0026184	5 G 6	15.5	288.0	484
0026185	4 G 10	17.6	384.0	644
0026186	5 G 10	19.6	480.0	785
0026187	4 G 16	21.0	615.0	922
0026188	5 G 16	23.6	768.0	1133

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD 891 refer to page 125
- ÖLFLEX® CHAIN 809 refer to page 123

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD CLASSIC 810 CY

Screened, PVC-insulated, numbered, PVC inner and outer sheath

LAPP KABEL STUTTGART ÖLFLEX® FD CLASSIC 810 CY CE



Info

- Bestseller among the FD power chain cables
- Well-proven, reliable
- EMC-compliant

Benefits

- Well-proven, reliable
- Cost-effective solution

Application range

- In power chains or moving machine parts
- Suitable for use in measuring, control and regulating circuits
- Power circuits for electrical equipments used in automation engineering
- Assembly lines, production lines, in all kinds of machines
- Plant engineering

Product features

- Low-adhesive surface
- Flame-retardant according to IEC 60332.1.2
- In damp or wet interiors
- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.
- Only for outdoor use within the indicated operating temperature range, with UV-protection

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in layers in short lay lengths
- PVC inner sheath, grey
- Tinned-copper braiding
- Non-woven wrapping
- PVC outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
Core in accordance with VDE 0245/0281
Outer sheath in accordance with VDE 0245/0281
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire acc. to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
For flexible use: 7.5 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: 0°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026200	2 X 0.5	6.9	33.0	74
0026201	3 G 0.5	7.3	39.0	84
0026202	4 G 0.5	7.9	46.0	98
0026203	5 G 0.5	8.4	54.0	110
0026204	7 G 0.5	9.8	70.0	143
0026205	12 G 0.5	11.3	100.0	201
0026206	18 G 0.5	13.4	153.0	287
0026207	25 G 0.5	15.9	202.0	394
0026208	30 G 0.5	16.5	228.0	432
0026219	2 X 0.75	7.3	39.0	85
0026220	3 G 0.75	7.8	48.0	99
0026221	4 G 0.75	8.4	59.0	116
0026222	5 G 0.75	9.0	69.0	133
0026223	7 G 0.75	10.7	90.0	178
0026224	12 G 0.75	12.4	129.0	253
0026226	18 G 0.75	14.9	205.0	368
0026227	25 G 0.75	17.4	271.0	496
0026229	30 G 0.75	18.0	320.0	549
0026230	2 X 1.0	7.7	46.0	97
0026231	3 G 1.0	8.2	57.0	114
0026232	4 G 1.0	8.9	70.0	134
0026233	5 G 1.0	9.8	81.0	159
0026234	7 G 1.0	11.4	110.0	207
0026235	12 G 1.0	13.4	182.0	314
0026238	18 G 1.0	16.1	254.0	443

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026239	25 G 1.0	18.8	365.0	612
0026240	26 G 1.0	18.8	374.0	625
0026241	34 G 1.0	21.5	463.0	787
0026242	41 G 1.0	23.2	542.0	918
0026243	50 G 1.0	25.3	640.0	1120
0026249	2 X 1.5	8.4	58.0	117
0026250	3 G 1.5	9.0	75.0	139
0026251	4 G 1.5	9.9	91.0	169
0026252	5 G 1.5	10.9	112.0	201
0026253	7 G 1.5	12.7	145.0	262
0026254	12 G 1.5	15.1	247.0	404
0026255	16 G 1.5	16.8	314.0	503
0026256	18 G 1.5	17.8	348.0	560
0026257	25 G 1.5	21.2	498.0	793
0026259	34 G 1.5	23.9	700.0	1005
0026270	3 G 2.5	10.8	119.0	207
0026271	4 G 2.5	11.8	161.0	247
0026272	5 G 2.5	13.2	194.0	307
0026273	7 G 2.5	15.8	262.0	418
0026281	4 G 4	13.7	238.0	360
0026282	5 G 4	15.3	280.0	436
0026283	4 G 6	16.1	318.0	514
0026285	4 G 10	20.2	521.0	824
0026287	4 G 16	23.6	780.0	1207

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CHAIN 815 CY refer to page 110
- ÖLFLEX® CHAIN 809 CY refer to page 124

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SILVYN® CHAIN cable protection and guiding systems

New

ÖLFLEX® CHAIN 815 CY

Screened, PVC-insulated, numbered, PVC sheath



Info

- Addition to the ÖLFLEX® FD CLASSIC 810 CY series
- EMC-compliant

Benefits

- Cost-effective solution
- Compact design

Application range

- In power chains or moving machine parts
- Suitable for use in measuring, control and regulating circuits
- Assembly lines, production lines, in all kinds of machines
- Plant engineering

Product features

- Low-adhesive surface
- Flame-retardant according to IEC 60332.1.2
- In damp or wet interiors
- Designed for continuous movements in power chains
- Only for outdoor use within the indicated operating temperature range, with UV-protection

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- Tinned-copper braiding
- PVC outer sheath, grey (RAL 7001)

Technical data

Core identification code
Black with white numbers acc. to VDE 0293

Based on
HD 21.13 S1; VDE 0281 Part 13

Specific insulation resistance
> 20 GOhm x cm

Conductor stranding
Extra-fine wire acc. to VDE 0295, class 6 / IEC 60228 class 6

Minimum bending radius
For flexible use: 7.5 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
300/500 V

Test voltage
Core/core: 4000 V
Core/screen: 2000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: 0°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026801	2 X 0.5	5.9	31.0	58
1026803	3 G 0.5	6.3	38.0	70
1026805	4 G 0.5	6.9	44.0	85
1026807	5 G 0.5	7.4	52.0	98
1026808	7 G 0.5	8.8	68.0	148
1026809	12 G 0.5	10.3	96.0	191
1026812	2 X 0.75	6.3	38.0	69
1026814	3 G 0.75	6.8	46.0	82
1026815	4 G 0.75	7.4	57.0	113
1026816	5 G 0.75	8.0	66.0	130
1026817	7 G 0.75	9.5	87.0	168
1026818	12 G 0.75	11.2	124.0	243
1026821	2 X 1.0	6.7	44.0	78
1026823	3 G 1.0	7.2	55.0	97
1026825	4 G 1.0	7.9	68.0	121

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026826	5 G 1.0	8.8	77.0	147
1026827	7 G 1.0	10.4	102.0	194
1026828	12 G 1.0	12.2	178.0	289
1026831	2 X 1.5	7.4	55.0	94
1026833	3 G 1.5	8.0	71.0	131
1026835	4 G 1.5	8.9	87.0	169
1026836	5 G 1.5	9.7	106.0	199
1026837	7 G 1.5	11.5	138.0	259
1026838	12 G 1.5	13.9	238.0	395
1026841	2 X 2.5	8.9	80.0	144
1026842	3 G 2.5	9.6	113.0	191
1026843	4 G 2.5	10.8	156.0	235
1026844	5 G 2.5	12.0	189.0	289
1026845	7 G 2.5	14.4	255.0	408

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD CLASSIC 810 CY refer to page 109
- ÖLFLEX® CHAIN 809 CY refer to page 124

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SILVYN® CHAIN cable protection and guiding systems

New

ÖLFLEX® CHAIN 808 P
PVC-insulated, numbered, PUR sheath

LAPP KABEL STUÏTGART ÖLFLEX® CHAIN 808 P CE

Info

- Basic Line for light & ordinary duty in power chain applications

Benefits

- Good combination of quality and price
- Compact design

Application range

- Assembly lines, production lines, in all kinds of machines
- In dry, damp or wet interiors
- In power chains or moving machine parts
- Particularly in wet areas of machine tools and transfer lines
- Suitable for use in measuring, control and regulating circuits

Product features

- Low-adhesive surface
- Oil-resistant
- Designed for 1...2 million bending/unbending cycles in the power chain

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Fine-wire strand made of bare copper wires
- Core insulation: PVC
- Cores twisted in layers
- Non-woven wrapping
- PUR outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
HD 22.10 (VDE 0282 Part 10)
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
For flexible applications:
Chains in self supporting non-gliding arrangements: 10 x outside diameter
Chains in gliding arrangements: 12 x outside diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U0/U: 300/500 V
- Test voltage**
Core/core: 4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1027700	2 X 0.5	5.2	10.0	40
1027701	3 G 0.5	5.5	15.0	48
1027702	4 G 0.5	6.0	20.0	58
1027703	5 G 0.5	6.5	24.0	67
1027704	7 G 0.5	7.7	34.0	88
1027705	12 G 0.5	9.2	58.0	136
1027706	18 G 0.5	11.0	87.0	195
1027707	25 G 0.5	13.3	120.0	274
1027708	2 X 0.75	5.6	15.0	49
1027709	3 G 0.75	6.0	22.0	60
1027710	4 G 0.75	6.5	29.0	73
1027711	5 G 0.75	7.1	37.0	86
1027712	7 G 0.75	8.5	51.0	117
1027713	12 G 0.75	10.3	87.0	181
1027714	18 G 0.75	12.2	130.0	259
1027715	25 G 0.75	14.8	181.0	363
1027716	2 X 1.0	5.9	19.0	58
1027717	3 G 1.0	6.3	29.0	72

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1027718	4 G 1.0	6.9	39.0	88
1027719	5 G 1.0	7.5	48.0	104
1027720	7 G 1.0	9.0	67.0	142
1027721	12 G 1.0	10.9	115.0	221
1027722	18 G 1.0	13.2	173.0	324
1027723	25 G 1.0	15.7	240.0	445
1027724	2 X 1.5	6.5	29.0	74
1027725	3 G 1.5	6.9	43.2	93
1027726	4 G 1.5	7.6	58.0	114
1027727	5 G 1.5	8.5	72.0	139
1027728	7 G 1.5	10.3	101.0	189
1027729	12 G 1.5	12.3	173.0	295
1027730	18 G 1.5	14.9	259.0	429
1027731	25 G 1.5	17.9	360.0	597
1027732	3 G 2.5	8.4	72.0	145
1027733	4 G 2.5	9.3	96.0	179
1027734	7 G 2.5	12.7	120.0	218
1027737	4 G 4	11.1	160.0	266

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD CLASSIC 810 P refer to page 113
- ÖLFLEX® FD 855 P refer to page 116
- ÖLFLEX® FD 891 P refer to page 125

Accessories

- Protective Cable Conduit Systems and Cable Carrier Systems refer to page 758

New

ÖLFLEX® CHAIN 808 CP

Screened, PVC-insulated, numbered, PUR sheath

LAPP KABEL STUTTGART ÖLFLEX® CHAIN 808 CP CE



Info

- Basic Line for light & ordinary duty in power chain applications

Benefits

- Good combination of quality and price
- Compact design
- Various applications

Application range

- In power chains or moving machine parts
- In EMC-sensitive environments
- Particularly in wet areas of machine tools and transfer lines
- Suitable for use in measuring, control and regulating circuits
- In dry, damp or wet interiors

Product features

- Low-adhesive surface
- Oil-resistant
- Designed for 1...2 million bending/unbending cycles in the power chain

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Fine-wire strand made of bare copper wires
- Core insulation: PVC
- Cores twisted in layers
- Non-woven wrapping
- Tinned-copper braiding
- Non-woven wrapping
- PUR outer sheath, grey (RAL 7001)

Technical data



Core identification code
Black with white numbers acc. to VDE 0293



Based on
HD 22.10 (VDE 0282 Part 10)



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5



Minimum bending radius
For flexible applications:
Chains in self supporting non-gliding arrangements: 10 x outside diameter
Chains in gliding arrangements: 12 x outside diameter



Nominal voltage
U₀/U: 300/500 V



Test voltage
Core/core: 4000 V
Core/screen: 2000 V



Protective conductor
G = with GN-YE protective conductor
X = without protective conductor



Temperature range
Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1027751	2 X 0.5	5.8	36.0	45
1027752	3 G 0.5	6.1	43.0	59
1027753	4 G 0.5	6.6	49.0	83
1027754	5 G 0.5	7.1	57.0	96
1027755	7 G 0.5	8.5	69.0	136
1027756	12 G 0.5	10.0	104.0	200
1027757	18 G 0.5	11.8	141.0	275
1027758	25 G 0.5	14.1	211.0	350
1027759	2 X 0.75	6.2	43.0	56
1027760	3 G 0.75	6.6	52.0	70
1027761	4 G 0.75	7.1	61.0	95
1027762	5 G 0.75	7.7	72.0	130
1027763	7 G 0.75	9.1	89.0	168
1027764	12 G 0.75	10.9	138.0	232
1027765	18 G 0.75	13.0	211.0	315
1027766	25 G 0.75	15.6	280.0	435
1027767	2 X 1.0	6.5	51.0	84
1027768	3 G 1.0	6.9	62.0	110

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1027769	4 G 1.0	7.5	74.0	130
1027770	5 G 1.0	8.3	88.0	156
1027771	7 G 1.0	9.8	112.0	192
1027772	12 G 1.0	11.7	185.0	285
1027773	18 G 1.0	14.0	268.0	395
1027774	25 G 1.0	16.7	354.0	656
1027775	2 X 1.5	7.1	65.0	97
1027776	3 G 1.5	7.5	82.0	125
1027777	4 G 1.5	8.4	100.0	165
1027778	5 G 1.5	9.1	119.0	193
1027779	7 G 1.5	10.9	154.0	245
1027780	12 G 1.5	13.3	268.0	365
1027781	18 G 1.5	15.7	373.0	553
1027782	25 G 1.5	18.7	530.0	734
1027783	3 G 2.5	9.0	118.0	188
1027784	4 G 2.5	10.1	147.0	236
1027785	7 G 2.5	13.5	253.0	340
1027788	4 G 4	11.9	248.0	305

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD CLASSIC 810 CP refer to page 114
- ÖLFLEX® CHAIN 815 CP refer to page 115
- ÖLFLEX® FD 855 CP refer to page 116
- ÖLFLEX® FD 891 CP refer to page 130

Accessories

- Protective Cable Conduit Systems and Cable Carrier Systems refer to page 758
- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-M BRUSH refer to page 669

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® FD CLASSIC 810 P

PVC-insulated, numbered, PUR sheath



Info

- Abrasion and cut-resistant



Benefits

- Well-proven, reliable
- Various applications

Application range

- In power chains or moving machine parts
- Particularly in wet areas of machine tools and transfer lines
- Mechanical engineering
- Suitable for use in measuring, control and regulating circuits
- Power circuits for electrical equipments used in automation engineering

Product features

- Low-adhesive surface
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2
- In dry, damp or wet interiors with normal mechanical stress conditions
- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in short lay lengths
- Non-woven wrapping
- PUR outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
Cores according to VDE 0245/0281
Outer sheath in accordance with VDE 0245/0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
For flexible use: 7.5 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
U₀/U:
300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026300	2 X 0.5	5.3	10.0	36
0026301	3 G 0.5	5.7	15.0	44
0026302	4 G 0.5	6.3	19.0	53
0026303	5 G 0.5	6.8	24.0	62
0026304	7 G 0.5	8.0	34.0	82
0026305	12 G 0.5	9.5	58.0	129
0026306	18 G 0.5	11.4	86.4	185
0026319	2 X 0.75	5.7	15.0	44
0026320	3 G 0.75	6.2	22.0	55
0026321	4 G 0.75	6.8	29.0	67
0026322	5 G 0.75	7.4	37.0	80
0026323	7 G 0.75	8.9	51.0	109
0026324	12 G 0.75	10.6	87.0	172
0026326	18 G 0.75	12.7	130.0	247
0026327	25 G 0.75	15.2	181.0	346
0026330	2 X 1.0	6.1	20.0	52
0026331	3 G 1.0	6.6	29.0	66
0026332	4 G 1.0	7.3	39.0	82
0026333	5 G 1.0	8.0	48.0	97
0026334	7 G 1.0	9.6	67.0	117
0026335	12 G 1.0	11.4	115.0	211
0026338	18 G 1.0	13.9	173.0	310
0026339	25 G 1.0	16.4	240.0	426
0026341	34 G 1.0	18.9	326.4	571
0026342	41 G 1.0	20.6	394.0	684
0026343	50 G 1.0	22.3	480.0	822
0026344	65 G 1.0	25.4	624.0	1058

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026349	2 X 1.5	6.8	29.0	68
0026350	3 G 1.5	7.4	43.2	86
0026351	4 G 1.5	8.1	58.0	106
0026352	5 G 1.5	9.1	72.0	131
0026353	7 G 1.5	10.9	101.0	178
0026354	12 G 1.5	12.9	173.0	281
0026355	16 G 1.5	14.6	230.0	365
0026356	18 G 1.5	15.6	259.0	411
0026357	25 G 1.5	18.6	360.0	571
0026359	34 G 1.5	21.1	489.6	753
0026361	42 G 1.5	23.0	629.0	919
0026362	50 G 1.5	25.0	720.0	1093
0026370	3 G 2.5	9.0	72.0	135
0026371	4 G 2.5	10.0	96.0	168
0026372	5 G 2.5	11.2	120.0	206
0026373	7 G 2.5	13.6	168.0	286
0026374	12 G 2.5	16.0	288.0	453
0026375	14 G 2.5	17.2	336.0	525
0026381	4 G 4	11.7	160.0	252
0026382	5 G 4	13.1	200.0	309
0029200	1 G 6	6.4	60.0	84
0026383	4 G 6	13.9	230.0	377
0029210	1 G 10	7.7	100.0	141
0026385	4 G 10	17.6	384.0	614
0026386	5 G 10	19.6	480.0	751
0029220	1 G 16	9.2	160.0	198
0026387	4 G 16	21.0	615.0	851

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CHAIN 808 P refer to page 111
- ÖLFLEX® FD 855 P refer to page 116
- ÖLFLEX® FD 891 P refer to page 125

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD CLASSIC 810 CP

Screened, PVC-insulated, numbered, PVC inner and PUR outer sheath

LAPP KABEL STUFGART ÖLFLEX® FD CLASSIC 810 CP CE



Info

- Abrasion and cut-resistant
- EMC-compliant

Benefits

- Well-proven, reliable
- Various applications

Application range

- In power chains or moving machine parts
- Particularly in wet areas of machine tools and transfer lines
- Mechanical engineering
- Suitable for use in measuring, control and regulating circuits
- Power circuits for electrical equipments used in automation engineering

Product features

- Low-adhesive surface
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2
- In dry, damp or wet interiors with normal mechanical stress conditions
- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in short lay lengths
- Non-woven wrapping
- PVC inner sheath
- Tinned-copper braiding
- PUR outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
Cores according to VDE 0245/0281
Outer sheath in accordance with VDE 0245/0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire acc. to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
For flexible use: 7.5 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
U₀/U:
300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026400	2 X 0.5	6.9	33.0	70
0026401	3 G 0.5	7.3	39.0	80
0026402	4 G 0.5	7.9	46.0	94
0026403	5 G 0.5	8.4	54.0	106
0026404	7 G 0.5	9.8	70.0	138
0026405	12 G 0.5	11.3	100.0	194
0026419	2 X 0.75	7.3	39.0	81
0026420	3 G 0.75	7.8	48.0	95
0026421	4 G 0.75	8.4	59.0	111
0026422	5 G 0.75	9.0	69.0	128
0026423	7 G 0.75	10.7	90.0	171
0026424	12 G 0.75	12.4	129.0	244
0026425	16 G 0.75	14.2	186.0	328
0026426	18 G 0.75	14.9	205.0	356
0026427	25 G 0.75	17.4	271.0	479
0026430	2 X 1.0	7.7	46.0	93
0026431	3 G 1.0	8.2	57.0	109
0026432	4 G 1.0	8.9	70.0	129
0026433	5 G 1.0	9.8	81.0	154
0026434	7 G 1.0	11.4	110.0	200
0026435	12 G 1.0	13.4	182.0	304

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026438	18 G 1.0	16.1	254.0	429
0026439	25 G 1.0	18.8	365.0	593
0026449	2 X 1.5	8.4	58.0	112
0026450	3 G 1.5	9.0	75.0	133
0026451	4 G 1.5	9.9	91.0	163
0026452	5 G 1.5	10.9	112.0	193
0026453	7 G 1.5	12.7	145.0	252
0026454	12 G 1.5	15.1	247.0	391
0026456	18 G 1.5	17.8	348.0	542
0026457	25 G 1.5	21.2	498.0	767
0026470	3 G 2.5	10.8	119.0	199
0026471	4 G 2.5	11.8	161.0	238
0026472	5 G 2.5	13.2	194.0	297
0026473	7 G 2.5	15.8	262.0	403
0026474	12 G 2.5	18.2	410.0	589
0026475	14 G 2.5	19.8	490.0	702
0026481	4 G 4	13.7	238.0	349
0026483	4 G 6	16.1	318.0	499
0026484	5 G 6	17.7	410.0	596
0026485	4 G 10	20.2	521.0	842
0026487	4 G 16	23.6	780.0	1173

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CHAIN 815 CP refer to page 115
- ÖLFLEX® CHAIN 868 CP refer to page 112
- ÖLFLEX® FD 855 CP refer to page 116
- ÖLFLEX® FD 891 CP refer to page 130

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-M BRUSH refer to page 669
- SILVYN® CHAIN cable protection and guiding systems

New

ÖLFLEX® CHAIN 815 CP

Screened, PVC-insulated, numbered, PUR sheath

LAPP KABEL STUTTGART ÖLFLEX® CHAIN 815 CP



Info

- Abrasion and cut-resistant
- EMC-compliant
- Addition to the ÖLFLEX® FD CLASSIC 810 CP series

Benefits

- Cost-effective solution
- Compact design
- Various applications

Application range

- In power chains or moving machine parts
- Particularly in wet areas of machine tools and transfer lines
- Mechanical engineering
- Suitable for use in measuring, control and regulating circuits

Product features

- Low-adhesive surface
- Oil-resistant
- Flame-retardant according to IEC 60332.1.2
- In dry, damp or wet interiors with normal mechanical stress conditions
- Designed for continuous movements in power chains

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in short lay lengths
- Non-woven wrapping
- Tinned-copper braiding
- PUR outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
HD 21.13 S1; VDE 0281 Part 13
HD 22.10 (VDE 0282 Part 10)
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire acc. to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
Flexible use: 7.5 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
U₀/U:
300/500 V
- Test voltage**
Core/core: 4000 V
Core/screen: 2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026854	5 G 0.5	7.4	52.0	94
1026855	7 G 0.5	8.8	68.0	144
1026856	12 G 0.5	10.3	96.0	185
1026857	18 G 0.5	12.2	148.0	257
1026858	25 G 0.5	14.5	195.0	365
1026861	4 G 0.75	7.4	57.0	114
1026862	5 G 0.75	8.0	66.0	126
1026863	7 G 0.75	9.5	87.0	165
1026864	12 G 0.75	11.2	124.0	230
1026865	18 G 0.75	13.7	199.0	349
1026866	25 G 0.75	16.0	265.0	456
1026869	4 G 1.0	7.9	68.0	117
1026870	5 G 1.0	8.8	77.0	142
1026871	7 G 1.0	10.4	102.0	188
1026872	12 G 1.0	12.2	178.0	281

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026873	18 G 1.0	14.7	249.0	420
1026874	25 G 1.0	17.4	361.0	559
1026876	3 G 1.5	8.0	71.0	127
1026877	4 G 1.5	8.9	87.0	164
1026878	5 G 1.5	9.7	106.0	193
1026879	7 G 1.5	11.5	138.0	252
1026880	12 G 1.5	13.9	238.0	386
1026881	18 G 1.5	16.4	341.0	543
1026882	25 G 1.5	19.6	485.0	760
1026883	2 X 2.5	8.9	80.0	139
1026884	3 G 2.5	9.6	113.0	186
1026885	4 G 2.5	10.8	156.0	229
1026886	5 G 2.5	12.0	189.0	281
1026887	7 G 2.5	14.4	255.0	398

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CHAIN 808 CP refer to page 112
- ÖLFLEX® FD CLASSIC 810 CP refer to page 114
- ÖLFLEX® FD 855 CP refer to page 116
- ÖLFLEX® FD 891 CP refer to page 130

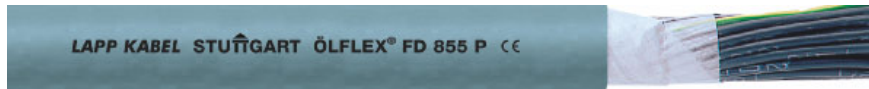
Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-M BRUSH refer to page 669
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

ÖLFLEX® FD 855 P

TPE-insulated, numbered, PUR sheath



Info

- MUD res. according to IEC61892-4 Annex D
- Flexible down to -40°C
- Smallest bending radii of all FD cables

Benefits

- Well-proven, reliable
- Various applications
- Suitable for all weather conditions

Application range

- In power chains or moving machine parts
- Particularly in wet areas of machine tools and transfer lines
- Mechanical engineering
- Construction machinery
- Assembly lines, production lines, in all kinds of machines

Product features

- Low-adhesive surface
- Oil-resistant
- Halogen-free and flame-retardant (IEC 60332.1.2)
- In dry, damp or wet interiors with normal mechanical stress conditions
- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 100 m (horizontal)
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: TPE
- Cores twisted together in extremely short lay lengths
- Non-woven wrapping
- PUR outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
VDE 0250/0281/0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
For flexible use: 5 x outer diameter
Fixed installation: 3 x outer diameter
- Nominal voltage**
300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C
During installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0027530	2 X 0.5	5.1	10.0	34
0027531	3 G 0.5	5.5	14.0	40
0027532	5 G 0.5	6.6	24.0	55
0027533	6 G 0.5	7.1	29.0	63
0027534	7 G 0.5	7.7	34.0	76
0027535	12 G 0.5	9.1	58.0	114
0027536	18 G 0.5	10.9	86.0	165
0027537	20 G 0.5	11.5	96.0	180
0027538	25 G 0.5	13.4	120.0	219
0027540	30 G 0.5	13.6	144.0	251
0027541	36 G 0.5	14.7	173.0	290
0027545	2 X 0.75	5.6	14.0	42
0027546	3 G 0.75	6.0	22.0	50
0027547	4 G 0.75	6.7	29.0	60
0027548	5 G 0.75	7.3	36.0	71
0027549	7 G 0.75	8.8	50.0	99
0027550	12 G 0.75	10.3	86.0	158
0027551	18 G 0.75	12.4	130.0	219
0027552	20 G 0.75	13.3	144.0	240
0027553	25 G 0.75	15.5	180.0	309
0027555	36 G 0.75	16.9	259.0	411
0027560	2 X 1.0	6.0	19.0	50
0027561	3 G 1.0	6.5	29.0	61
0027562	4 G 1.0	7.2	38.0	70
0027563	5 G 1.0	7.8	48.0	93

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0027564	7 G 1.0	9.5	67.0	122
0027565	12 G 1.0	11.2	115.0	196
0027566	18 G 1.0	13.7	173.0	274
0027567	20 G 1.0	14.4	192.0	300
0027568	25 G 1.0	16.8	240.0	385
0027570	30 G 1.0	17.0	288.0	444
0027571	36 G 1.0	18.6	346.0	516
0027575	2 X 1.5	6.7	29.0	68
0027576	3 G 1.5	7.3	43.0	83
0027586	4 G 1.5	8.0	58.0	100
0027577	5 G 1.5	9.0	72.0	128
0027578	7 G 1.5	10.7	101.0	177
0027579	12 G 1.5	12.7	173.0	275
0027580	18 G 1.5	15.2	259.0	405
0027582	25 G 1.5	18.8	360.0	565
0027584	30 G 1.5	18.8	432.0	652
0027585	36 G 1.5	20.6	518.0	759
0027587	41 G 1.5	22.4	614.0	978
0027370	3 G 2.5	8.9	72.0	121
0027371	4 G 2.5	9.9	96.0	163
0027372	5 G 2.5	11.0	120.0	196
0027373	7 G 2.5	13.4	168.0	266
0027374	12 G 2.5	15.8	288.0	446
0027375	18 G 2.5	18.9	432.0	665
0027376	25 G 2.5	23.5	600.0	929

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBUST refer to page 119

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® FD 855 CP

Screened, TPE-insulated, numbered, TPE inner sheath, PUR outer sheath

LAPP KABEL STUFGART ÖLFLEX® FD 855 CP CE



Info

- MUD res. according to IEC61892-4 Annex D
- Flexible down to -40°C
- EMC-optimised

Benefits

- Well-proven, reliable
- Various applications
- Suitable for all weather conditions

Application range

- In power chains or moving machine parts
- Particularly in wet areas of machine tools and transfer lines
- Mechanical engineering
- Construction machinery
- Assembly lines, production lines, in all kinds of machines

Product features

- Low-adhesive surface
- Oil-resistant
- Halogen-free and flame-retardant (IEC 60332.1.2)
- In dry, damp or wet interiors with normal mechanical stress conditions
- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 100 m (horizontal)
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: TPE
- Cores twisted together in extremely short lay lengths
- Non-woven wrapping
- Inner sheath made of TPE
- Tinned-copper braiding
- PUR outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
VDE 0250/0281/0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire acc. to VDE 0295, class 6 / IEC 60228 class 6
- Minimum bending radius**
For flexible use: 7.5 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C
During installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0027605	2 X 0.5	6.7	32.0	67
0027606	3 G 0.5	7.1	40.0	79
0027607	5 G 0.5	8.2	53.0	107
0027608	6 G 0.5	8.7	59.0	121
0027609	7 G 0.5	9.5	67.0	132
0027610	12 G 0.5	10.9	97.0	190
0027611	18 G 0.5	12.9	131.0	245
0027612	20 G 0.5	13.5	156.0	281
0027613	25 G 0.5	15.6	190.0	367
0027615	30 G 0.5	15.8	222.0	408
0027616	36 G 0.5	16.9	251.0	459
0027620	2 X 0.75	7.2	40.0	79
0027621	3 G 0.75	7.6	47.0	96
0027622	4 G 0.75	8.3	58.0	112
0027623	5 G 0.75	8.9	65.0	126
0027624	7 G 0.75	10.6	85.0	165
0027625	12 G 0.75	12.1	127.0	231
0027626	18 G 0.75	14.6	198.0	330
0027628	25 G 0.75	17.7	259.0	459
0027630	36 G 0.75	19.5	348.0	605
0027635	2 X 1.0	7.6	45.0	93
0027636	3 G 1.0	8.1	55.0	109
0027637	4 G 1.0	8.8	68.0	126

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0027638	5 G 1.0	9.6	81.0	147
0027639	7 G 1.0	11.3	106.0	196
0027640	12 G 1.0	13.2	175.0	292
0027641	18 G 1.0	15.9	242.0	418
0027643	25 G 1.0	19.5	329.0	575
0027645	30 G 1.0	19.6	377.0	635
0027646	36 G 1.0	21.2	467.0	758
0027649	2 X 1.5	8.3	58.0	115
0027650	3 G 1.5	8.9	76.0	139
0027661	4 G 1.5	9.8	91.0	156
0027651	5 G 1.5	10.8	111.0	198
0027652	7 G 1.5	12.5	145.0	254
0027653	12 G 1.5	14.9	242.0	416
0027654	18 G 1.5	17.4	346.0	564
0027656	25 G 1.5	21.4	486.0	811
0027659	36 G 1.5	23.4	655.0	1066
0027380	3 G 2.5	10.7	110.0	194
0027381	4 G 2.5	11.7	136.0	234
0027382	5 G 2.5	12.8	180.0	293
0027383	7 G 2.5	15.6	246.0	418
0027384	12 G 2.5	18.0	377.0	629
0027385	18 G 2.5	21.5	569.0	912
0027386	25 G 2.5	26.5	765.0	1266

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® PETRO FD 865 CP refer to page 118
- ÖLFLEX® FD ROBUST C refer to page 120

Accessories

- SILVYN® CHAIN cable protection and guiding systems

New

ÖLFLEX® PETRO FD 865 CP

Oil and drilling fluid (mud) resistant control cables for highly flexible outdoor applications



Info

- Resistant to oil and drilling fluids acc. to NEK TS 606:2009 (Oil & Mud)
- Flexible down to -50°C
- Halogen-free

Benefits

- Suitable for long horizontal drag chain travel distances
- Reduced outer diameters enable space and weight saving installation
- Suitable for contact with oil- and ester-based drilling muds as well as calcium bromide solutions usually used on drilling rigs
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Copper braiding screens the cable against electromagnetic interference

Application range

- Permanently moved power chains or machine parts in harsh environment
- Onshore and offshore applications such as drilling rigs and drillships
- In wet areas within machinery and production or assembly lines

Product features

- Good notch and abrasion resistance
- Good weather, ozone, UV and oil resistance
- Halogen-free and flame-retardant (IEC 60332.1.2)
- Resistant to hydrolysis and microbes

Approvals



- Resistant against oil and drilling fluids according NEK TS 606:2009 and IEC 61892-4
- Salt water-resistant according to UL 1309
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper
- Core insulation: TPE
- Cores twisted in short lay lengths
- Non-woven wrapping
- Inner sheath made of TPE
- Tinned copper screen braiding
- Outer sheath made of robust special polymer
Colour: black

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
VDE 0250/0281/0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire acc. to VDE 0295, class 6 / IEC 60228 class 6
- Minimum bending radius**
For flexible use: 7.5 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -50°C to +80°C
Fixed installation: -60°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0023300	2 X 0.5	6.7	32.0	67
0023301	3 G 0.5	7.1	40.0	79
0023302	4 G 0.5	7.6	47.0	84
0023303	5 G 0.5	8.2	53.0	107
0023304	7 G 0.5	9.5	67.0	132
0023305	12 G 0.5	10.9	97.0	190
0023306	18 G 0.5	12.9	131.0	245
0023307	20 G 0.5	13.5	156.0	281
0023308	25 G 0.5	15.6	190.0	367
0023309	30 G 0.5	15.8	222.0	408
0023310	36 G 0.5	16.9	251.0	459
0023311	2 X 0.75	7.2	40.0	79
0023312	3 G 0.75	7.6	47.0	96
0023313	4 G 0.75	8.3	58.0	112
0023314	5 G 0.75	8.9	65.0	126
0023315	7 G 0.75	10.6	85.0	165
0023316	12 G 0.75	12.1	127.0	231
0023317	18 G 0.75	14.6	198.0	330
0023318	20 G 0.75	15.5	213.0	354
0023319	25 G 0.75	17.7	259.0	459
0023320	30 G 0.75	17.7	296.0	480
0023321	36 G 0.75	19.5	348.0	605
0023322	2 X 1.0	7.6	45.0	93
0023323	3 G 1.0	8.1	55.0	109
0023324	4 G 1.0	8.8	68.0	126
0023325	5 G 1.0	9.6	81.0	147
0023326	7 G 1.0	11.3	106.0	196
0023327	12 G 1.0	13.2	175.0	292
0023328	18 G 1.0	15.9	242.0	418
0023329	20 G 1.0	16.6	269.0	427

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0023330	25 G 1.0	19.2	329.0	575
0023331	30 G 1.0	19.6	377.0	635
0023332	36 G 1.0	21.2	467.0	758
0023333	2 X 1.5	8.3	58.0	115
0023334	3 G 1.5	8.9	76.0	139
0023335	4 G 1.5	9.8	91.0	156
0023336	5 G 1.5	10.8	111.0	198
0023337	7 G 1.5	12.5	145.0	254
0023338	12 G 1.5	14.9	242.0	416
0023339	18 G 1.5	17.4	346.0	564
0023340	20 G 1.5	18.3	377.0	562
0023341	25 G 1.5	21.4	486.0	811
0023342	30 G 1.5	21.4	568.0	821
0023343	36 G 1.5	23.4	655.0	1066
0023344	2 X 2.5	9.8	73.0	129
0023345	3 G 2.5	10.7	110.0	194
0023346	4 G 2.5	11.7	136.0	234
0023347	5 G 2.5	12.8	180.0	293
0023348	7 G 2.5	15.6	246.0	418
0023349	12 G 2.5	18.0	377.0	629
0023350	18 G 2.5	21.5	569.0	912
0023351	20 G 2.5	22.7	582.0	850
0023352	25 G 2.5	26.5	765.0	1266
0023353	4 G 4	13.9	205.0	311
0023354	5 G 4	15.4	250.0	381
0023355	4 G 6	16.2	289.0	423
0023356	5 G 6	17.8	354.0	512
0023357	4 G 10	20.4	475.0	672
0023358	5 G 10	22.3	582.0	814

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® PETRO C HFFR refer to page 61

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD ROBUST
TPE-insulated, numbered, TPE sheath



Info

- Excellent weather resistance
- High chemical resistance
- Temperature range: -40°C to +105°C

Benefits

- Well-proven, reliable
- Various applications
- Suitable for all weather conditions
- For indoor and outdoor use

Application range

- In power chains or moving machine parts
- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- Particularly in wet areas of machine tools and transfer lines
- Resistant to contact with plant, animal or synthetic-based organic oils, greases, waxes and the related emulsions

Product features

- Low-adhesive surface
- Highly resistant to oil and chemicals
- Hydrolysis-resistant to warm and hot water
- In dry, damp or wet interiors with normal mechanical stress conditions
- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 100 m (horizontal)
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire, tinned copper strands
- Core insulation: TPE
- Cores twisted together in extremely short lay lengths
- Non-woven wrapping
- Robust outer sheath made of special halogen-free TPE, black (RAL 9005)

Technical data

- Core identification code**
Black cores with printed white numbers (VDE 0293)
- Based on**
VDE 0250/0281/0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
For flexible use:
7.5 x cable diameter
(at temperatures < 70 °C)
10 x cable diameter
(at a max. temperature of 105 °C)
Fixed installation:
4 x outer diameter
- Nominal voltage**
U₀/U:
300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -40 °C to +105 °C
Fixed installation: -50 °C to +110 °C
Short-term: up to +120 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026501	3 G 0.75	6.9	21.6	51
0026502	4 G 0.75	7.7	28.8	69
0026503	5 G 0.75	8.6	36.0	87
0026504	7 G 0.75	10.4	50.4	127
0026505	12 G 0.75	12.2	86.4	182
0026506	18 G 0.75	14.9	129.6	277
0026507	25 G 0.75	18.5	180.0	421
0026509	3 G 1.0	7.4	28.8	63
0026510	4 G 1.0	8.2	38.4	82
0026511	5 G 1.0	9.2	48.0	105
0026516	7 G 1.0	11.1	67.2	157
0026517	12 G 1.0	13.3	115.2	226
0026518	18 G 1.0	15.9	172.8	345
0026521	3 G 1.5	8.9	43.2	90
0026522	4 G 1.5	9.9	57.6	118
0026523	5 G 1.5	11.0	72.0	149
0026524	7 G 1.5	13.4	100.8	233
0026525	12 G 1.5	15.8	172.8	322
0026526	18 G 1.5	18.9	259.2	494
0026527	25 G 1.5	23.5	360.0	695
0026531	4 G 2.5	11.8	96.0	181
0026532	5 G 2.5	12.9	120.0	228
0026533	7 G 2.5	15.7	168.0	329
0026534	12 G 2.5	18.7	288.0	491
0026541	4 G 4	13.8	153.6	261
0026551	4 G 6	14.8	230.4	356
0026561	4 G 10	20.1	384.0	596
0026571	4 G 16	23.8	614.4	910

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD 855 P refer to page 116

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD ROBUST C

Screened, TPE-insulated, numbered, TPE inner and outer sheath

LAPP KABEL STUTTGART ÖLFLEX® FD ROBUST C



Info

- Excellent weather resistance
- Temperature range: -40 °C to +105 °C
- EMC-optimised

Benefits

- Well-proven, reliable
- Various applications
- Suitable for all weather conditions
- EMC-compliant
- For indoor and outdoor use

Application range

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Particularly in wet areas of machine tools and transfer lines
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- Resistant to contact with plant, animal or synthetic-based organic oils, greases, waxes and the related emulsions
- Assembly lines, production lines, in all kinds of machines

Product features

- Hydrolysis-resistant to warm and hot water
- Low-adhesive surface
- Highly resistant to oil and chemicals
- In dry, damp or wet interiors with normal mechanical stress conditions
- Designed for up to 5 million bending/un-bending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 100 m (horizontal)
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire, tinned copper strands
- Core insulation: TPE
- Cores twisted together in extremely short lay lengths
- Non-woven wrapping
- Inner sheath made of TPE
- Tinned-copper braiding
- Robust outer sheath made of special halogen-free TPE, black (RAL 9005)

Technical data

- Core identification code**
Black cores with printed white numbers (VDE 0293)
- Based on**
VDE 0250/0281/0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire acc. to VDE 0295, class 6 / IEC 60228 class 6
- Minimum bending radius**
For flexible use:
7.5 x cable diameter (at temperatures < 70 °C)
10 x cable diameter (at a max. temperature of 105 °C)
- Nominal voltage**
300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -40 °C to +105 °C
Fixed installation: -50 °C to +105 °C
Short-term: up to +120 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026701	3 G 0.75	9.1	49.6	110
0026702	4 G 0.75	10.1	60.9	137
0026703	5 G 0.75	10.8	72.8	160
0026704	7 G 0.75	12.6	107.2	238
0026705	12 G 0.75	15.0	151.5	312
0026706	18 G 0.75	17.7	205.5	448
0026707	25 G 0.75	21.7	299.1	657
0026709	3 G 1.0	9.8	61.1	125
0026716	7 G 1.0	13.9	132.3	278
0026717	12 G 1.0	16.1	189.1	370
0026721	3 G 1.5	10.9	79.8	163
0026722	4 G 1.5	12.1	99.2	210
0026723	5 G 1.5	13.6	129.7	264
0026724	7 G 1.5	15.8	175.2	370
0026725	12 G 1.5	18.4	257.1	498
0026726	18 G 1.5	22.1	378.9	749
0026727	25 G 1.5	27.1	555.5	1042
0026731	4 G 2.5	14.4	161.5	307
0026732	5 G 2.5	15.5	188.3	361
0026733	7 G 2.5	18.3	252.6	512
0026734	12 G 2.5	21.9	406.5	730
0026741	4 G 4	16.2	227.3	412
0026751	4 G 6	17.2	306.7	519
0026761	4 G 10	23.3	513.6	853
0026771	4 G 16	27.2	809.6	1273

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD 855 CP refer to page 117
- ÖLFLEX® PETRO FD 865 CP refer to page 118

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD 90

PVC-insulated, PVC sheath, single core, approved



Benefits

- Multi-standard= fewer part varieties = cost savings
- Easy to install
- For various applications

Application range

- In power chains or moving machine parts
- For internal wiring of electric and electronic equipment in switch cabinets
- This cable can also substitute multi-core shielded servo drive cables where space requirements or minimum bending radii present problems
- Specially designed for power circuits of servomotors driven by frequency converters as well as main spindle drives in machine tools
- Test systems in the automotive industry, vehicles and stationary fuel cell systems

Product features

- Low-adhesive surface
- Flame-retardant according to IEC 60332.1.2 & CSA FT1
- Oil-resistant
- Designed for operation under a minimum bending radius of at least 7.5 times the cable diameter

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3
- Approval signs for Canada: sizes up to 120 mm² CSA AWM, sizes from 150 mm²: UL cRU AWM

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Non-woven wrapping
- PVC outer sheath, black (RAL 9005)

Technical data

- Core identification code**
Black or green-yellow, other colours available on request
- Approvals**
UL-AWM-Style 10107, cRU AWM II A/B FT1 ≥150mm²
CSA AWM IA/B IIA/B FT 1 ≤ 120mm²
- Based on**
VDE 0250, 0281
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
Flexing: 7.5 x outer diameter
Fixed installation: 3 x outer diameter
- Nominal voltage**
IEC: 600 / 1000 V
UL & CSA: 600 V
- Test voltage**
4000 V
- Protective conductor**
G = with PE conductor
X = without PE jacket
- Temperature range**
Flexing: -5°C to +90°C
Fixed installation: -40°C to +90°C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Core colour	Copper index (kg/km)	Weight (kg/km)
0026600	10.0	9.0	green-yellow	96.0	176
0026601	10.0	9.0	black	96.0	176
0026603	16.0	10.5	green-yellow	153.6	240
0026604	16.0	10.5	black	153.6	240
0026607	25.0	11.8	green-yellow	240.0	361
0026608	25.0	11.8	black	240.0	361
0026610	35.0	14.2	green-yellow	336.0	482
0026611	35.0	14.2	black	336.0	482
0026613	50.0	16.2	green-yellow	480.0	660
0026614	50.0	16.2	black	480.0	660
0026616	70.0	18.3	green-yellow	672.0	898
0026617	70.0	18.3	black	672.0	898
0026619	95.0	19.8	green-yellow	912.0	1179
0026620	95.0	19.8	black	912.0	1179
0026622	120.0	23.4	green-yellow	1,152.0	1521
0026623	120.0	23.4	black	1,152.0	1521
0026625	150.0	25.1	green-yellow	1,440.0	1739
0026626	150.0	25.1	black	1,440.0	1739
0026628	185.0	28.1	green-yellow	1,776.0	2305
0026629	185.0	28.1	black	1,776.0	2305
0026634	240.0	31.6	green-yellow	2,304.0	2944
0026635	240.0	31.6	black	2,304.0	2944
0026640	300.0	33.5	green-yellow	2,880.0	3545
0026641	300.0	33.5	black	2,880.0	3545

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® CHAIN cable protection and guiding systems

Power chain applications

Various applications, approved

ÖLFLEX® FD 90 CY

Screened, PVC-insulated, PVC sheath, single core, approved

LAPP KABEL STUIGART ÖLFLEX® FD 90 CY DESINA® CE



Info

- EMC-compliant

Benefits

- Multi-standard= fewer part varieties = cost savings
- Easy to install
- For various applications

Application range

- In power chains or moving machine parts
- For internal wiring of electric and electronic equipment in switch cabinets
- Specially designed for power circuits of servomotors driven by frequency converters as well as main spindle drives in machine tools
- This cable can also substitute multi-core shielded servo drive cables where space requirements or minimum bending radii present problems
- Test systems in the automotive industry, vehicles and stationary fuel cell systems

Product features

- Oil-resistant
- Low-adhesive surface
- Flame-retardant according to IEC 60332.1.2 & CSA FT 1
- Designed for operation under a minimum bending radius of at least 7.5 times the cable diameter

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3
- Approval signs for Canada: sizes up to 120 mm² CSA AWM, sizes from 150 mm²: UL cRU AWM

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Non-woven wrapping
- Tinned-copper braiding
- Non-woven wrapping
- PVC outer sheath, orange (RAL 2003)

Technical data



Core identification code
Black, other colours are available upon request



Approvals
UL-AWM-Style 10107, cRU AWM II A/B FT 1 ≥150mm²
CSA AWM IA/B IIA/B FT 1 ≤ 120mm²



Based on
VDE 0250, 0281



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6



Minimum bending radius
For flexible use: 7.5 x outer diameter
Fixed installation: 3 x outer diameter



Nominal voltage
IEC: 600/1000 V
UL & CSA: 600 V



Test voltage
4000 V



Protective conductor
X = without protective conductor



Temperature range
Flexing: -5°C to +90°C
Fixed installation: -40°C to +90°C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026651	10	9.7	127.6	227
0026653	16	11.2	186.2	297
0026655	25	12.5	257.8	410
0026657	35	15.1	400.7	607
0026659	50	17.1	554.8	808
0026661	70	19.4	775.6	1081
0026663	95	20.9	1,028.1	1382
0026665	120	24.5	1,282.4	1752
0026667	150	26.2	1,410.4	1924
0026669	185	29.2	1,935.0	2611
0026671	240	32.9	2,526.0	3372
0026673	300	34.8	3,128.8	4105

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

DESINA® is a registered trademark of the German Machine Tool Builders' Association

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-M BRUSH refer to page 669
- SILVYN® CHAIN cable protection and guiding systems

New

ÖLFLEX® CHAIN 809

PVC-insulated, numbered, PVC sheath, approved



Info

- Basic Line for light & ordinary duty in power chain applications

Benefits

- Good combination of quality and price
- Compact design

Application range

- In power chains or moving machine parts
- In dry, damp or wet interiors
- Suitable for use in measuring, control and regulating circuits
- Wiring of machines, tools, devices, appliances and control cabinets
- Only for outdoor use within the indicated operating temperature range, with UV-protection

Product features

- Low-adhesive surface
- Designed for 1...2 million bending/unbending cycles in the power chain
- Flame retardancy: UL/CSA: VW-1, FT1. IEC/EN: 60332.1.2

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Core insulation: PVC
- Cores twisted in layers
- Non-woven wrapping
- PVC outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Approvals**
cUL AWM II A/B FT1
UL-AWM-Style 20886
- Based on**
HD 21.13 S1; VDE 0281 Part 13
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
For flexible applications:
Chains in self supporting non-gliding arrangements: 10 x outside diameter
Chains in gliding arrangements: 12 x outside diameter
- Nominal voltage**
VDE: U₀/U: 300/500 V
UL & CSA: 1000 V
- Test voltage**
Core/core: 4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: VDE 0 °C to +70 °C UL 0 °C to +80 °C
Fixed installation: VDE -40 °C to +70 °C; UL/CSA -40 °C to +80 °C;

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026700	2 X 0.5	5.2	10.0	40
1026701	3 G 0.5	5.5	15.0	48
1026702	4 G 0.5	6.0	20.0	58
1026703	5 G 0.5	6.5	24.0	67
1026704	7 G 0.5	7.7	34.0	88
1026705	12 G 0.5	9.2	58.0	136
1026706	18 G 0.5	11.0	87.0	195
1026707	25 G 0.5	13.3	120.0	274
1026708	2 X 0.75	5.6	15.0	49
1026709	3 G 0.75	6.0	22.0	60
1026710	4 G 0.75	6.5	29.0	73
1026711	5 G 0.75	7.1	37.0	86
1026712	7 G 0.75	8.5	51.0	117
1026713	12 G 0.75	10.3	87.0	181
1026714	18 G 0.75	12.2	130.0	259
1026715	25 G 0.75	14.8	181.0	363
1026716	2 X 1.0	5.9	19.0	58
1026717	3 G 1.0	6.3	29.0	72

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026718	4 G 1.0	6.9	39.0	88
1026719	5 G 1.0	7.5	48.0	104
1026720	7 G 1.0	9.0	67.0	142
1026721	12 G 1.0	10.9	115.0	221
1026722	18 G 1.0	13.2	173.0	324
1026723	25 G 1.0	15.7	240.0	445
1026724	2 X 1.5	6.5	29.0	74
1026725	3 G 1.5	6.9	43.2	93
1026726	4 G 1.5	7.6	58.0	114
1026727	5 G 1.5	8.5	72.0	139
1026728	7 G 1.5	10.3	101.0	189
1026729	12 G 1.5	12.3	173.0	295
1026730	18 G 1.5	14.9	259.0	429
1026731	25 G 1.5	17.9	360.0	597
1026732	3 G 2.5	8.4	72.0	145
1026733	4 G 2.5	9.3	96.0	179
1026734	7 G 2.5	12.7	120.0	218
1026737	4 G 4	11.1	160.0	266

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD CLASSIC 810 refer to page 108
- ÖLFLEX® CHAIN 879 refer to page 127
- ÖLFLEX® FD 891 refer to page 125

Accessories

- EPIC® Industrial connectors refer to page 450
- SKINTOP® MS-SC-M refer to page 668

Power chain applications

Various applications, approved

New

ÖLFLEX® CHAIN 809 CY

Screened, PVC-insulated, numbered, PVC-sheath, approved

LAPP KABEL STUÏTGART ÖLFLEX® CHAIN 809 CY CE



Info

- Basic Line for light & ordinary duty in power chain applications

Benefits

- Good combination of quality and price
- Compact design

Application range

- In power chains or moving machine parts
- In EMC-sensitive environments
- Suitable for use in measuring, control and regulating circuits
- Wiring of machines, tools, devices, appliances and control cabinets
- Only for outdoor use within the indicated operating temperature range, with UV-protection

Product features

- Low-adhesive surface
- Designed for 1...2 million bending/unbending cycles in the power chain
- Flame retardancy: UL/CSA: VW-1, FT1. IEC/EN: 60332.1.2

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Core insulation: PVC
- Cores twisted in layers
- Non-woven wrapping
- Tinned-copper braiding
- Non-woven wrapping
- PVC outer sheath, grey (RAL 7001)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Approvals**
cUL AWM II A/B FT1
UL-AWM-Style 20886
- Based on**
HD 21.13 S1; VDE 0281 Part 13
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
For flexible applications:
Chains in self supporting non-gliding arrangements: 10 x outside diameter
Chains in gliding arrangements: 12 x outside diameter
- Nominal voltage**
VDE: U₀/U: 300/500 V
UL & CSA: 1000 V
- Test voltage**
Core/core: 4000 V
Core/screen: 2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: VDE 0 °C to +70 °C UL 0 °C to +80 °C
Fixed installation: VDE -40 °C to +70 °C; UL/CSA -40 °C to +80 °C;

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026751	2 X 0.5	5.8	36.0	45
1026752	3 G 0.5	6.1	43.0	59
1026753	4 G 0.5	6.6	49.0	83
1026754	5 G 0.5	7.1	57.0	96
1026755	7 G 0.5	8.5	69.0	136
1026756	12 G 0.5	10.0	104.0	200
1026757	18 G 0.5	11.8	141.0	275
1026758	25 G 0.5	14.1	211.0	350
1026759	2 X 0.75	6.2	43.0	56
1026760	3 G 0.75	6.6	52.0	70
1026761	4 G 0.75	7.1	61.0	95
1026762	5 G 0.75	7.7	72.0	130
1026763	7 G 0.75	9.1	89.0	168
1026764	12 G 0.75	10.9	138.0	232
1026765	18 G 0.75	13.0	211.0	315
1026766	25 G 0.75	15.6	280.0	435
1026767	2 X 1.0	6.5	51.0	84
1026768	3 G 1.0	6.9	62.0	110

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026769	4 G 1.0	7.5	74.0	130
1026770	5 G 1.0	8.3	88.0	156
1026771	7 G 1.0	9.8	112.0	192
1026772	12 G 1.0	11.7	185.0	285
1026773	18 G 1.0	14.0	268.0	395
1026774	25 G 1.0	16.7	354.0	486
1026775	2 X 1.5	7.1	65.0	97
1026776	3 G 1.5	7.5	82.0	125
1026777	4 G 1.5	8.4	100.0	165
1026778	5 G 1.5	9.1	119.0	193
1026779	7 G 1.5	10.9	154.0	245
1026780	12 G 1.5	13.3	268.0	365
1026781	18 G 1.5	15.7	373.0	553
1026782	25 G 1.5	18.7	530.0	734
1026783	3 G 2.5	9.0	118.0	188
1026784	4 G 2.5	10.1	147.0	236
1026785	7 G 2.5	13.5	253.0	340
1026788	4 G 4	11.9	248.0	305

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD CLASSIC 810 CY refer to page 109
- ÖLFLEX® CHAIN 815 CY refer to page 110
- ÖLFLEX® CHAIN 879 CY refer to page 128

Accessories

- EPIC® Industrial connectors refer to page 450
- SKINTOP® MS-SC-M refer to page 668

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® FD 891

PVC-insulated, numbered, PVC sheath, approved



Info

- Please note: discontinued product! <Reduced range of sizes>
- Multi Standard: many countries, one cable

Benefits

- Multi-standard= fewer part varieties = cost savings

Application range

- In power chains or moving machine parts
- Plant engineering
- Machine tools

Product features

- Oil-resistant
- Low-adhesive surface
- Flame-retardant according to IEC 60332.1.2 & CSA FT1
- In damp or wet interiors
- Designed for up to 5 million bending/un-bending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- PVC outer sheath, black (RAL 9005)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Approvals**
UL-AWM-Style 2587 + 21098
CSA AWM IA/B; IIA/B FT 1
- Based on**
VDE 0250/0281
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
For flexible use: 7.5 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
IEC: 300/500 V
UL/CSA: 600 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -5°C to +90°C
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026012	12 G 0.5	10.8	57.6	162
1026103	3 G 0.75	6.6	21.6	63
1026104	4 G 0.75	7.3	28.8	75
1026105	5 G 0.75	8.0	36.0	90
1026107	7 G 0.75	9.6	50.4	132
1026112	12 G 0.75	11.6	86.5	201
1026118	18 G 0.75	13.9	129.6	300
1026125	25 G 0.75	16.6	180.0	415
1026303	3 G 1.5	7.7	43.2	93
1026304	4 G 1.5	8.8	57.6	122
1026305	5 G 1.5	9.6	72.0	147
1026307	7 G 1.5	11.6	100.8	219
1026312	12 G 1.5	13.9	172.8	322
1026318	18 G 1.5	16.9	259.2	478
1026325	25 G 1.5	20.1	360.0	670
1026334	34 G 1.5	23.6	489.6	897
1026403	3 G 2.5	8.8	72.0	129
1026404	4 G 2.5	9.8	96.0	167
1026405	5 G 2.5	11.0	120.0	212
1026407	7 G 2.5	13.4	168.0	304
1026412	12 G 2.5	15.8	288.0	452
1026504	4 G 4	11.8	153.6	263
1026505	5 G 4	13.2	192.0	325
1026507	7 G 4	16.1	268.8	469
1026604	4 G 6	13.7	230.4	368
1026614	4 G 10	17.9	384.0	588
1026624	4 G 16	24.1	614.4	1031
1026634	4 G 25	27.9	960.0	1530
1026644	4 G 35	31.1	1,344.0	1959

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 DESINA® is a registered trademark of the German Machine Tool Builders' Association
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CHAIN 809 refer to page 124
- ÖLFLEX® FD 891 P refer to page 129

Accessories

- SILVYN® CHAIN cable protection and guiding systems

Power chain applications

Various applications, approved

ÖLFLEX® FD 891 CY

Screened, PVC-insulated, numbered, PVC inner and outer sheath, approved

LAPP KABEL STUTTGART ÖLFLEX® FD 891 CY AWM CSA CE



Info

- Please note: discontinued product! <Reduced range of sizes>
- Multi Standard: many countries, one cable

Benefits

- Multi-standard= fewer part varieties = cost savings

Application range

- In power chains or moving machine parts
- Plant engineering
- Machine tools

Product features

- Oil-resistant
- Low-adhesive surface
- Flame-retardant according to IEC 60332.1.2 & CSA FT 1
- In damp or wet interiors
- Designed for up to 5 million bending/un-bending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- Tinned-copper braiding
- Non-woven wrapping
- PVC outer sheath, black (RAL 9005)

Technical data



Core identification code
Black with white numbers acc. to VDE 0293



Approvals
UL-AWM-Style 2587 + 21098
CSA AWM IA/B; IIA/B FT 1



Based on
VDE 0250/0281



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
Extra-fine wire acc. to VDE 0295, class 6/
IEC 60228 class 6



Minimum bending radius
For flexible use: 7.5 x outer diameter
Fixed installation:
4 x outer diameter



Nominal voltage
IEC: 300/500 V
UL/CSA: 600 V



Test voltage
4000 V



Protective conductor
G = with GN-YE protective conductor
X = without protective conductor



Temperature range
Flexing: -5°C to +90°C
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1027003	3 G 0.5	7.9	38.9	89
1027004	4 G 0.5	8.5	47.3	102
1027005	5 G 0.5	9.2	55.3	127
1027007	7 G 0.5	10.9	81.1	177
1027012	12 G 0.5	12.6	99.9	234
1027018	18 G 0.5	15.5	160.1	381
1027025	25 G 0.5	17.7	203.9	472
1027103	3 G 0.75	8.2	49.2	105
1027104	4 G 0.75	8.9	59.9	123
1027105	5 G 0.75	10.0	68.6	155
1027107	7 G 0.75	11.6	91.7	206
1027112	12 G 0.75	13.8	152.1	304
1027118	18 G 0.75	16.3	204.4	425
1027303	3 G 1.5	9.7	74.8	152
1027304	4 G 1.5	10.6	94.2	187
1027305	5 G 1.5	11.4	101.1	187
1027307	7 G 1.5	13.8	165.6	320
1027312	12 G 1.5	16.3	246.5	460
1027318	18 G 1.5	19.5	374.7	677
1027325	25 G 1.5	23.6	489.4	926
1027403	3 G 2.5	10.6	103.9	194
1027404	4 G 2.5	11.8	161.8	235
1027405	5 G 2.5	13.0	184.6	306
1027407	7 G 2.5	15.8	242.1	428
1027412	12 G 2.5	18.2	403.5	590
1027503	3 G 4	12.4	157.5	275
1027504	4 G 4	14.0	218.1	365
1027507	7 G 4	18.3	373.2	629
1027604	4 G 6	16.1	304.7	500
1027624	4 G 16	27.1	803.6	1357
1027634	4 G 25	31.3	1,180.4	1879
1027644	4 G 35	34.3	1,593.7	2360

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

DESINA® is a registered trademark of the German Machine Tool Builders' Association

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CHAIN 809 CY refer to page 124
- ÖLFLEX® FD 891 CP refer to page 127

Accessories

- EPIC® Industrial connectors refer to page 450
- SKINTOP® MS-SC-M refer to page 668
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® CHAIN 879

PVC-insulated, numbered, PVC sheath, approved



Info

- Power chain cable compliant with NFPA 79

Benefits

- Approved for use in USA: These cables are highly accepted by NRTLs and AHJs as they are MTW-listed.
- Wide application range due to multiple approvals

Application range

- In power chains or moving machine parts
- Automated handling equipment
- Industrial machinery
- Plant engineering

Product features

- Oil-resistant according to UL OIL RES I & II
- Low-adhesive surface
- Flame-retardant according to IEC 60332.1.2 & CSA FT1
- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Insulation: PVC with nylon sheath (PA skin)
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- PVC outer sheath, black (RAL 9005)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Approvals**
UL Type MTW & UL AWM Style 20886
CSA AWM IA/B; IIA/B FT 1
- Based on**
VDE 0250/0281
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
For flexible use: 7.5 x outer diameter
except #872003, 872012, 871803, 871812:
12 x o.d.
Fixed installation:
4 x outer diameter
- Nominal voltage**
IEC: 300/500 V
UL MTW & CSA AWM: 600 V / UL AWM 1000V
- Test voltage**
2000V
- Protective conductor**
G = with GN-YE protective conductor
- Temperature range**
Flexing: -5°C to +90°C
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm² per conductor	AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
872003	3 G	20	7.3	15.0	58
872004	4 G	20	8.0	21.0	70
872005	5 G	20	8.6	25.5	81
872007	7 G	20	9.9	36.0	104
872012	12 G	20	11.4	61.0	151
872018	18 G	20	14.2	93.0	236
872025	25 G	20	17.0	127.5	311
871803	3 G	18	7.8	31.5	78
871804	4 G	18	8.6	40.5	95
871805	5 G	18	9.3	51.0	112
871807	7 G	18	10.8	72.0	148
871812	12 G	18	12.4	123.0	248
871815	15 G	18	13.8	154.5	299
871818	18 G	18	15.4	184.5	345
871825	25 G	18	18.5	256.5	461
871603	3 G 1.5		8.6	46.5	100
871604	4 G 1.5		9.5	61.5	124
871605	5 G 1.5		10.3	76.5	147
871607	7 G 1.5		12.0	108.0	195
871612	12 G 1.5		14.7	184.5	329
871618	18 G 1.5		17.2	277.5	463
871625	25 G 1.5		20.8	384.0	680
871404	4 G 2.5		10.6	102.0	175
871407	7 G 2.5		13.6	180.0	310
871204	4 G 4		12.4	163.5	251
871207	7 G 4		16.9	286.5	445
871004	4 G 6		15.3	246.0	388
870804	4 G 10		19.7	411.0	679
870604	4 G 16		23.7	657.0	970

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil 152 m; Drum 305 m
Please specify the preferred type of packaging (e.g. 1 x 610 m drum or 8 x 76 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD 891 refer to page 125
- ÖLFLEX® FD 891 P refer to page 129
- ÖLFLEX® CHAIN 809 refer to page 123

Accessories

- SILVYN® CHAIN cable protection and guiding systems

Power chain applications

Various applications, approved

ÖLFLEX® CHAIN 879 CY

Screened, PVC-insulated, numbered, PVC-sheath, approved



Info

- Power chain cable compliant with NFPA 79
- EMC-compliant

Benefits

- Approved for use in USA: These cables are highly accepted by NRTLs and AHJs as they are MTW-listed.
- Wide application range due to multiple approvals

Application range

- In power chains or moving machine parts
- Automated handling equipment
- Industrial machinery
- Machine tools
- Plant engineering

Product features

- Oil-resistant according to UL OIL RES I & II
- Low-adhesive surface
- Flame-retardant according to IEC 60332.1.2 & CSA FT 1
- In damp or wet interiors
- Designed for up to 5 million bending/unbending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires
- Insulation: PVC with nylon sheath (PA skin)
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- Tinned-copper braiding
- PVC outer sheath, black (RAL 9005)

Technical data

Core identification code
Black with white numbers acc. to VDE 0293

Approvals
UL Type MTW & UL AWM Style 20886
CSA AWM IA/B; IIA/B FT 1

Based on
VDE 0250/0281

Conductor stranding
Extra-fine wire acc. to VDE 0295, class 6/
IEC 60228 class 6

Minimum bending radius
Flexible use: 10 x outer diameter
Fixed installation: 6 x outer diameter

Nominal voltage
IEC: 300/500 V
UL MTW & CSA AWM: 600 V / UL AWM 1000V

Test voltage
2000V

Protective conductor
G = with GN-YE protective conductor

Temperature range
Flexing: -5°C to +90°C
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm ² per conductor	AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
872003CY	3 G	20	8.0	37.5	85
872004CY	4 G	20	8.7	46.5	99
872005CY	5 G	20	9.3	54.0	113
872007CY	7 G	20	10.7	70.5	142
872012CY	12 G	20	12.3	112.5	207
872018CY	18 G	20	15.1	153.0	304
872025CY	25 G	20	18.1	225.0	416
871803CY	3 G	18	8.5	55.5	106
871804CY	4 G	18	9.3	69.0	127
871805CY	5 G	18	10.0	82.5	147
871807CY	7 G	18	11.6	118.5	200
871812CY	12 G	18	14.1	178.5	311
871818CY	18 G	18	16.3	252.0	419
871825CY	25 G	18	19.6	363.0	576
871603CY	3 G 1.5	9.3	9.3	75.0	132
871604CY	4 G 1.5	10.2	10.2	93.0	159
871605CY	5 G 1.5	11.0	11.0	112.5	186
871607CY	7 G 1.5	12.9	12.9	162.0	254
871612CY	12 G 1.5	15.6	15.6	249.0	400
871618CY	18 G 1.5	18.4	18.4	375.0	569
871625CY	25 G 1.5	23.1	23.1	508.5	814
871404CY	4 G 2.5	11.5	11.5	148.5	226
871407CY	7 G 2.5	15.4	15.4	243.0	379
871204CY	4 G 4	13.3	13.3	220.5	312
871207CY	7 G 4	17.8	17.8	363.0	527
871004CY	4 G 6	16.1	16.1	313.5	462
870804CY	4 G 10	21.9	21.9	525.0	805
870604CY	4 G 16	24.8	24.8	792.0	1116

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil ≤ 30 kg, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 610 m drum or 8 x 76 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD CLASSIC 810 CY refer to page 109
- ÖLFLEX® CHAIN 815 CY refer to page 110
- ÖLFLEX® CHAIN 809 CY refer to page 124
- ÖLFLEX® FD 891 CY refer to page 126
- ÖLFLEX® FD 891 CP refer to page 130

Accessories

- EPIC® Industrial connectors refer to page 450
- SKINTOP® MS-SC-M refer to page 668
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD 891 P

PVC-insulated, numbered, PUR sheath, approved

LAPP KABEL STUTTGART ÖLFLEX® FD 891 P AWM CSA CE



Info

- Multi Standard: many countries, one cable

Benefits

- Multi-standard= fewer part varieties = cost savings
- Protected against water and dirt

Application range

- In power chains or moving machine parts
- Plant engineering
- Machine tools

Product features

- Abrasion and cut-resistant
- Oil-resistant
- Low-adhesive surface
- Flame-retardant according to IEC 60332.1.2 & CSA FT1
- Designed for up to 5 million bending/un-bending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- PUR outer sheath, black (RAL 9005)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Approvals**
UL rec. AWM Style 20234
cRU AWM II A/B FT 1
- Based on**
VDE 0250/0281/0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
For flexible use: 7.5 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
IEC: 300/500 V
UL/CSA: 600 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -5°C to +80°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1028752	2 X 0.5	6.5	9.6	46
1028007	7 G 0.5	9.6	33.6	118
1028103	3 G 0.75	7.3	21.6	66
1028104	4 G 0.75	8.0	28.8	82
1028105	5 G 0.75	8.7	36.0	101
1028107	7 G 0.75	10.7	50.4	142
1028112	12 G 0.75	11.7	86.4	196
1028118	18 G 0.75	13.9	129.6	282
1028125	25 G 0.75	16.6	180.0	404
1028134	34 G 0.75	18.9	244.8	541
1028150	50 G 0.75	22.5	360.0	738
1028303	3 G 1.5	8.4	43.2	98
1028304	4 G 1.5	9.3	57.6	125
1028305	5 G 1.5	10.1	72.0	155
1028307	7 G 1.5	11.9	100.8	221
1028312	12 G 1.5	13.9	172.8	318
1028318	18 G 1.5	16.9	259.2	484
1028325	25 G 1.5	20.1	360.0	671
1028334	34 G 1.5	23.1	489.6	910
1028952	2 X 2.5	8.9	48.0	102
1028403	3 G 2.5	9.3	72.0	134
1028404	4 G 2.5	10.3	96.0	173
1028405	5 G 2.5	11.3	120.0	217
1028407	7 G 2.5	13.4	168.0	312
1028412	12 G 2.5	15.8	288.0	460
1028503	3 G 4	10.9	115.2	197
1028504	4 G 4	12.1	153.6	257
1028507	7 G 4	16.1	268.8	471
1028604	4 G 6	13.7	230.4	363
1028614	4 G 10	17.9	384.0	605
1028624	4 G 16	23.4	614.4	973
1028634	4 G 25	27.6	960.0	1437

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 DESINA® is a registered trademark of the German Machine Tool Builders' Association
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CHAIN 808 P refer to page 111
- ÖLFLEX® FD CLASSIC 810 P refer to page 113
- ÖLFLEX® FD 855 P refer to page 116
- ÖLFLEX® CHAIN 879 refer to page 127
- ÖLFLEX® FD 891 refer to page 125

Accessories

- SILVYN® CHAIN cable protection and guiding systems

Power chain applications

Harsh conditions, approved

ÖLFLEX® FD 891 CP

Screened, PVC-insulated, numbered, PVC inner sheath, PUR outer sheath, approved



Info

- EMC-compliant

Benefits

- Multi-standard= fewer part varieties = cost savings
- Protected against water and dirt

Application range

- In power chains or moving machine parts
- Plant engineering
- Machine tools

Product features

- Abrasion and cut-resistant
- Oil-resistant
- Low-adhesive surface
- Flame-retardant according to IEC 60332.1.2 & CSA FT 1
- Designed for up to 5 million bending/un-bending cycles in the power chain. Further informations regarding service life see table T0 of the appendix of the Lapp catalogue.

Approvals



- For travel distances up to 10 m.
- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3

Design

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- Special PVC-based inner sheath
- Tinned-copper braiding
- PUR outer sheath, black (RAL 9005)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Approvals**
UL-AWM-Style 20234
cUL AWM II A/B FT 1
- Based on**
VDE 0250/0281/0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire acc. to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
Flexible use: 7.5 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
IEC: 300/500 V
UL/CSA: 600 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -5°C to +80°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1029012	12 G 0.5	12.9	114.7	253
1029025	25 G 0.5	17.7	203.9	495
1029103	3 G 0.75	8.9	49.2	118
1029104	4 G 0.75	9.6	59.9	140
1029107	7 G 0.75	11.9	91.7	226
1029125	25 G 0.75	19.2	295.0	618
1029134	34 G 0.75	21.6	363.9	794
1029312	12 G 1.5	16.1	246.5	470
1029318	18 G 1.5	19.5	374.7	711
1029405	5 G 2.5	13.3	184.6	328
1029507	7 G 4	18.3	353.4	650

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 DESINA® is a registered trademark of the German Machine Tool Builders' Association
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CHAIN 808 CP refer to page 112
- ÖLFLEX® CHAIN 815 CP refer to page 115
- ÖLFLEX® FD 855 CP refer to page 117
- ÖLFLEX® CHAIN 879 CY refer to page 128
- ÖLFLEX® FD 891 CY refer to page 126

Accessories

- Rectangular connectors refer to page 450
- SKINTOP® MS-SC-M refer to page 668
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® ROBOT 900 P

TPE-PUR robot cable, for flexing and torsion load



Info

- Simultaneous bending and torsion

Benefits

- Space-saving installation due to small cable diameters
- High-Tec robot cables available from the warehouse!
- Protected against water and dirt
- Wear-resistant

Application range

- Plant engineering
- Machine tools
- Automated handling equipment
- Multi-axis articulated robots
- In power chains or moving machine parts

Product features

- Abrasion and cut-resistant
- Hydrolysis-resistant
- Oil-resistant
- Low-adhesive surface
- Flame-retardant

Approvals



- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3
- For travel distances up to 10 m.

Design

- Fine or extra-fine strands made of bare copper wire
- Core insulation: TPE
- Cores twisted in layers
- PTFE tape wrapping
- PUR outer sheath, black (RAL 9005)

Technical data

- Core identification code**
Up to 0.34 mm²: DIN 47100 cores
From 0.5 mm²: black cores with white printed numbers
- Mutual capacitance**
C/C approx. 100 nF/km
C/S approx. 120 nF/km
- Peak operating voltage**
0.34 mm²: 350 V (not for power transmission)
- Based on**
VDE 0281/0282
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
approx. 0.7 mH/km
- Conductor stranding**
Fine wire or extra-fine wire
- Torsion**
Max. torsion load
± 360°/m
- Minimum bending radius**
Flexing: 15 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
48 V AC
From 0.5 mm² U₀/U: 300/500 V
- Test voltage**
Up to 0.34 mm²: 1500 V
From 0.5 mm²: 3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C
Core insulation: capable of temporary overload to +120°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0028110	7 X 0.25	6.2	16.8	48
0028116	25 X 0.25	10.2	60.0	141
0028188	2 X 0.34	5.0	7.0	27
0028145	18 G 0.5	11.2	86.4	120
0028146	25 G 0.5	13.3	120.0	254
0028160	4 G 0.75	6.6	28.8	63
0028164	14 G 0.75	11.2	100.8	199
0028170	2 X 1.0	6.2	19.2	47
0028171	3 G 1.0	6.5	29.0	61
0028172	4 G 1.0	7.0	38.4	76
0028174	7 G 1.0	9.3	67.2	131
0028176	12 G 1.0	11.5	115.2	216
0028185	16 G 1,0 + (2 x 1,0)	16.0	195.0	376
0028178	18 G 1.0	13.2	172.8	287
0028186	23 G 1,0 + (2 x 1,0)	17.3	262.0	470
0028180	25 G 1.0	16.4	240.0	433
0028190	34 G 1.0	19.9	326.4	571
0028191	41 G 1.0	22.3	393.6	705
0028198	18 G 1.5	15.8	259.2	446
0028181	3 G 2.5	9.3	72.0	136
0028182	4 G 2.5	10.1	96.0	171
0028400	3 G 16	21.4	460.8	721
0028187	3 G 25	26.2	720.0	1178
0028189	3 G 35	28.8	1,008.0	1559

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBOT F1 refer to page 133

Accessories

- SILVYN® RILL PA 12 refer to page 783

ÖLFLEX® ROBOT 900 DP

Screened TPE-PUR robot cable, for bending and torsion loads



Info

- Simultaneous bending and torsion

Benefits

- Space-saving installation due to small cable diameters
- High-Tec robot cables available from the warehouse!
- Protected against water and dirt
- Wear-resistant

Application range

- Plant engineering
- Machine tools
- Automated handling equipment
- Multi-axis articulated robots
- In power chains or moving machine parts

Product features

- Abrasion and cut-resistant
- Hydrolysis-resistant
- Oil-resistant
- Low-adhesive surface
- Flame-retardant

Approvals



- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3
- For travel distances up to 10 m.

Design

- Fine or extra-fine strands made of bare copper wire
- Core insulation: TPE
- Cores twisted in layers
- PTFE tape wrapping
- Screened version (DP): wrapped with braided tinned-copper wires
- PUR outer sheath, black (RAL 9005)

Technical data

- Core identification code**
Up to 0.34 mm²: DIN 47100 cores
From 0.5 mm²: black cores with white printed numbers
- Mutual capacitance**
C/C approx. 100 nF/km
C/S approx. 120 nF/km
- Peak operating voltage**
0.34 mm²: 350 V (not for power transmission)
- Based on**
VDE 0281/0282
VDE 0812
- Specific insulation resistance**
> 20 GΩhm x cm
- Inductivity**
approx. 0.7 mH/km
- Conductor stranding**
Fine wire or extra-fine wire
- Torsion**
Max. torsion load
± 180° / m
- Minimum bending radius**
Flexing: 15 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
48 V AC
From 0.5 mm² U0/U: 300/500 V
- Test voltage**
Up to 0.34 mm²: 1500 V
From 0.5 mm²: 3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C
Core insulation: capable of temporary overload to +120°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0028100	12 x 0,14	6.7	42.5	69
0028105	3 x 2 x 0,14	6.2	17.0	44
0028126	25 x 0,25	11.1	103.5	183
0028135	4 x 0,34	5.7	21.3	46
0028136	5 x 2 x 0,34	9.1	64.4	114
0028195	12 G 1,5	14.0	259.0	395

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBOT F1 (C) refer to page 134

Accessories

- SILVYN® RILL PA 12 refer to page 783

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® ROBOT F1

TPE-PUR robot cable, for flexing and torsion load, AWM approval

LAPP KABEL STUÏGART ÖLFLEX® ROBOT F 1 CE



Info

- Simultaneous bending and torsion
- AWM approvals for USA and Canada

Benefits

- Space-saving installation due to small cable diameters
- High-Tec robot cables available from the warehouse!
- Protected against water and dirt
- Wear-resistant

Application range

- Plant engineering
- Multi-axis articulated robots
- Automated handling equipment
- In power chains or moving machine parts

Product features

- Abrasion and cut-resistant
- Hydrolysis-resistant
- Oil-resistant
- Low-adhesive surface
- Flame-retardant

Approvals



- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3
- For travel distances up to 100 m (horizontal)

Design

- Fine or extra-fine strands, 0.14 mm² - 0.5 mm², made from tinned-copper wires, bare above.
- Core insulation: TPE
- Refer to "Technical Data" for the core-coding
- Cores (or core pairs) twisted in layers or bundles
- PTFE tape wrapping
- Pair screen (D): layer of tinned-copper wires
- PUR outer sheath, black (RAL 9005)

Technical data

- Core identification code**
Up to 0.34 mm²: DIN 47100 cores
From 0.5 mm²: white cores with black printed numbers
- Approvals**
UL appr AWM style 20940 VW1
cUL appr AWM I/II A/B FT 1
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire or extra-fine wire
- Torsion**
Max. torsion load
± 360° / m
- Minimum bending radius**
Flexible use: 10 x outer diameter
Fixed installation:
4 x outer diameter
- Nominal voltage**
IEC: up to 0.34 mm² 250 Vss. 0.5 - 2.5 mm² 300/500 V
UL/CSA up to 1.5 mm² 600 V, from 2.5 mm² 1000 V
- Test voltage**
Cores: spark test 6 kV
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C
Core insulation: capable of temporary over-load to +120°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0029590	7 X 0.25	6.7	16.8	62
0029591	12 X 0.25	9.0	30.0	122
0029592	18 X 0.25	10.6	45.0	156
0029593	25 X 0.25	12.5	60.0	205
0029594	2 X 0.34	4.6	7.0	38
0029595	3 X 0.34	4.8	10.0	40
0029596	4 X 0.34	5.2	15.0	48
0029599	12 X 0.34	9.4	40.0	130
0029600	18 X 0.34	11.2	60.0	170
0029601	25 X 0.34	13.1	83.0	220
0029608	18 G 0.5	12.3	84.0	202
0029609	25 G 0.5	15.2	120.0	284
0029610	2 X 1.0	6.3	19.0	60
0029611	3 G 1.0	6.6	28.0	71
0029612	4 G 1.0	7.2	38.0	87
0029614	7 G 1.0	9.2	65.0	141
0029615	12 G 1.0	12.4	110.0	237
0029616	14 G 1.0	13.2	128.0	257
0029617	16 G 1.0 + (2 x 1.0)	15.4	190.0	346
0029618	18 G 1.0	16.1	170.0	349
0029619	23 G 1 + (2 x 1.0)	18.0	250.0	461
0029620	25 G 1.0	17.8	240.0	407
0029621	34 G 1.0	21.1	320.0	600
0029622	41 G 1.0	23.6	390.0	753
0029624	4 G 1.5	8.2	57.0	114
0029625	5 G 1.5	9.1	72.0	141
0029627	7 G 1.5	10.5	101.0	187
0029629	12 G 1.5	14.3	170.0	294
0029630	18 G 1.5	17.5	259.0	450
0029631	25 G 1.5	19.7	360.0	661
0029632	3 G 2.5	9.1	72.0	136
0029641	4 G 6	13.3	220.0	330

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBOT 900 P refer to page 131

Accessories

- SILVYN® RILL PA 12 refer to page 783

Power chain applications

Torsion, articulated robot, approved

ÖLFLEX® ROBOT F1 (C)

Screened TPE-PUR robot cable, for bending and torsion loads, AWM-approval

LAPP KABEL STUTTGART ÖLFLEX® ROBOT F1 (C) CE



Info

- Simultaneous bending and torsion
- AWM approvals for USA and Canada

Benefits

- Space-saving installation due to small cable diameters
- High-Tec robot cables available from the warehouse!
- Protected against water and dirt
- Wear-resistant

Application range

- Plant engineering
- Multi-axis articulated robots
- Automated handling equipment
- In power chains or moving machine parts

Product features

- Abrasion and cut-resistant
- Hydrolysis-resistant
- Oil-resistant
- Low-adhesive surface
- Flame-retardant

Approvals



- For use in power chains: Please comply with the assembly guidelines listed in Appendix T3
- For travel distances up to 100 m (horizontal)

Design

- Fine or extra-fine strands, 0.14 mm² - 0.5 mm², made from tinned-copper wires, bare above.
- Core insulation: TPE
- Refer to "Technical Data" for the core-coding
- Cores (or core pairs) twisted in layers or bundles
- PTFE tape wrapping
- Screening: wrapped with braided tinned-copper wires, or layers of tinned-copper wires. Refer to the respective data sheet for each article number.
- PUR outer sheath, black (RAL 9005)

Technical data



Core identification code
Up to 0.34 mm²: DIN 47100 cores
From 0.5 mm²: white cores with black printed numbers



Approvals
UL appr AWM style 20940 VW1
cUL appr AWM I/II A/B FT 1



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
Fine wire or extra-fine wire



Torsion
Max. torsion load
± 180°/m



Minimum bending radius
Flexible use: 10 x outer diameter
Fixed installation:
4 x outer diameter



Nominal voltage
IEC: up to 0.34 mm² 250 Vss, 0.5 - 2.5 mm² 300/500 V
UL/CSA up to 1.5 mm² 600 V, from 2.5 mm² 1000 V



Test voltage
Cores: spark test 6 kV



Protective conductor
G = with GN-YE protective conductor
X = without protective conductor



Temperature range
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C
Core insulation: capable of temporary overload to +120°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0029653	3 x 2 x 0,25	8.0	38.0	100
0029654	25 x 0,25	13.8	115.0	280
0029655	2 x 0,34	5.2	18.0	54
0029656	3 x 0,34	5.4	20.0	56
0029657	4 x 0,34	6.6	28.0	72
0029658	5 x 2 x 0,34	10.2	69.0	158
0029689	12 G 1,5	15.4	230.0	380
0029690	18 G 1,5	18.5	340.0	550
0029664	4 G 1,5	8.8	75.1	120
0029665	4 G 2,5	10.3	116.0	200
0029691	4 G 1,5 + (2 x 1,0)	11.0	116.0	213
0029692	4 G 2,5 + (2 x 1,0)	12.0	150.0	270

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBOT 900 DP refer to page 134

Accessories

- SILVYN® RILL PA 12 refer to page 783

LiFY

Flexible at cold temperatures, Class 6 single conductor for devices or measurements

Benefits

- Very soft PVC insulation that is flexible at low temperatures

Application range

- For use in and on mobile equipment
- For measuring assemblies in technical training sessions, education and electric laboratories

Approvals



Technical data

DIN VDE Based on VDE 0682/0683 and DIN 46438/46440

Specific insulation resistance
> 20 GOhm x cm

Conductor stranding
Extra-fine-wire: 0.07 mm acc. to VDE 0295

Nominal voltage
Highly flexible LiFY cores:
up to 1.0 mm²: U0/U: 300/500 V,
from 1.5 mm²: U0/U: 450/750 V

Test voltage
1500 V

Temperature range
Flexible use: -15°C to +70°C



Design

- Stranded copper wire
- Core insulation: Based on PVC

Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	PU	Green/yellow	black	blue	red
0.75	2.5	7.2	100	4560017S	4560013S	4560014S	4560016S
1	2.9	9.6	100	4560027S	4560023S	4560024S	4560026S
1.5	3.7	14.4	100	4560037S	4560033S	4560034S	4560036S
2.5	4.2	24.0	50	4560057S	4560053S	4560054S	4560056S
4	5.1	38.4	100	4560067	4560063	4560064	
6	6.0	57.6	50	4560077	4560073	4560074	4560076
10	7.4	96.0	50	4560087	4560083		4560086

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- DIN-assorted boxes conductor end sleeves refer to page 913
- PEW 8.87 crimping pliers refer to page 916
- KS 15 cable shears refer to page 903

LiFY MEASURING

Flexible at cold temperatures, Class 6 single conductor for devices or measurements

Benefits

- Very soft PVC insulation that is flexible at low temperatures

Application range

- For use in and on mobile equipment
- The 1000 V version with thick insulation wall is ideal for many measuring instruments such as multimeters.
- For measuring assemblies in technical training sessions, education and electric laboratories

Approvals



Technical data

DIN VDE Based on VDE 0682/0683 and DIN 46438/46440

Specific insulation resistance
> 20 GOhm x cm

Conductor stranding
Extra-fine-wire: 0.07 mm acc. to VDE 0295

Nominal voltage
LiFY measurement cores:
U: 1000 VAC

Test voltage
1500 V

Temperature range
Flexible use: -15°C to +70°C



Design

- Stranded copper wire
- Core insulation: Based on PVC

Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	PU	black	blue	red
0.75	4.0	7.2	50	4560011S	4560021S	4560041S
1.5	4.0	14.4	50	4560012S	4560022S	4560042S

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- DIN-assorted boxes conductor end sleeves refer to page 913
- PEW 8.87 crimping pliers refer to page 916
- KS 15 cable shears refer to page 903

Special applications

Special single cores

ESUY Copper Earthing Cable

Flexible single conductor for grounding and shorting as well as for grounding installation and potential equalisation



Benefits

- Very flexible despite a large cross-section

Application range

- Provides protection during repairs
- For earthing in high-voltage power installations of power companies and railway systems
- For earthing devices and potential equalisation on machine parts and EDP systems

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



- “CE” mark is forbidden, since there is no defined rated voltage (earthing cable) and, thus, no technical and legal possibility of compliance with the European Low Voltage EC Directive 2006/95/EC, which the “CE” marks of most of the cables sold by us refer to

Design

- Strands of bare copper wires
- Braiding made of bare copper wires
- PVC-based outer sheath, transparent

Technical data



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
refer to article table



Minimum bending radius
Flexible use: 12 x outer diameter



Test voltage
2000 V



Temperature range
Flexible use: -5 °C to +70 °C

Article number	Conductor cross-section (mm ²)	Conductor stranding: number of wires x wire diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
4571101	16	4200 x 0.07	8.8	177.0	230
4571102	25	3192 x 0.1	10.4	275.0	316
4571103	35	4480 x 0.1	12.4	387.0	475
4571104	50	6383 x 0.1	14.6	560.0	670
4571105	70	8918 x 0.1	17.0	791.0	905
4571106	95	12100 x 0.1	19.8	1,069.0	1220

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Packaging size: Coil ≤ 30 kg, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- X00V3-D Copper Earthing Cable refer to page 136

Accessories

- Cable shears KT 4 and KT 5 refer to page 904

X00V3-D Copper Earthing Cable

Flexible at cold temperatures, <HAR>-type single conductor for earthing and shorting



Application range

- Provides protection during repairs
- For earthing in high-voltage power installations of power companies and railway systems
- For earthing devices and potential equalisation on machine parts and EDP systems
- For applications in cold environments

Approvals



- “CE” mark is forbidden, since there is no defined rated voltage (earthing cable) and, thus, no technical and legal possibility of compliance with the European Low Voltage EC Directive 2006/95/EC, which the “CE” marks of most of the cables sold by us refer to

Design

- Strands of bare copper wires
- PVC-based outer sheath, transparent



Info

- Formerly: H00V3-D Copper Earthing Cable

Technical data



Based on
VDE 0283 Part 3 or EN 61138



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
VDE 0283 Part 3 or EN 61138



Minimum bending radius
Flexible use: 12 x outer diameter



Test voltage
1000 V



Temperature range
Flexible use: -25 °C to +55 °C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
4571110	16	8.1	153.6	223
4571111	25	9.5	240.0	330
4571112	35	11.0	336.0	455
4571113	50	13.2	480.0	648
4571114	70	15.8	672.0	913
4571115	95	18.3	912.0	1234

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Packaging size: Coil ≤ 30 kg, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ESUY Copper Earthing Cable refer to page 136

Accessories

- Cable shears KT 4 and KT 5 refer to page 904

ÖLFLEX® TRUCK 170 FLRY



Benefits

- Special ADR approval
- ADR approval enables use in vehicles transporting hazardous goods

Application range

- Commercial vehicles
- Wiring of electrical equipments in all trailers and semi-trailers

Product features

- UV-resistant
- Resistant to cold temperatures
- Resistant to most oils, chemicals and weather conditions

Approvals



- ISO 4141 and DIN/ISO 6722

Design

- Strands of bare copper wires
- Core insulation: Based on PVC
- Special PVC-based outer sheath

Technical data

	Core identification code ISO 4141-3
	Insulation resistance 10 MOhm x km
	Capacity of data pairs Related to length between cores, max. 50 pF/m and between each data transmission core and all other cores in the cable, max. 100 pF/m
	Conductor stranding Fine wire according to DIN/ISO 6722
	Minimum bending radius 12 x outer diameter
	Nominal voltage 60 V
	Test voltage 5 kV rms for at least 5 min.
	Temperature range Fixed installation: -40°C to +85°C Area of application, Class A

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Colour	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® TRUCK 170 FLRY					
7027060	2 x 1,0	6.0	white-black	19.2	55
7027061	2 x 1,0	6.0	white-brown	19.2	55
7027000	2 x 1,5	6.6	white-black	28.8	68
7027001	2 x 1,5	6.6	white-brown	28.8	68
7027062	3 x 1,0	6.3	black-brown-blue	28.8	63
7027012	3 x 1,0	6.3	white/brown/blue, newest ISO design	28.8	63
7027063	4 x 1,0	6.8	white/black/red/brown	38.4	81
7027034	4 x 1,5	7.5	white/black/red/brown	57.6	106
7027064	5 x 1,0	7.5	white/brown/green/red/grey	48.0	97
7027065	5 x 1,0 + 1 x 2,5	9.0	1.0 = green/brown/red/blue/violet; 2.5 = white	72.0	133
7027066	5 x 1,0 + 1 x 2,5	9.0	1.0 = yellow/black/red/blue/violet; 2.5 = white	72.0	133
7027015	5 x 1,0 + 1 x 2,5	9.0	1.0 = brown/green/red/grey/violet; 2.5 = white, newest ISO design	72.0	133
7027016	5 x 1,0 + 1 x 2,5	9.0	1.0 = brown/yellow/red/grey/violet; 2.5 = white, newest ISO design	72.0	133
7027007	7 x 0,75	7.3	white/black/yellow/red/green/brown/blue	50.4	101
7027067	7 x 1,5	8.9	white/black/yellow/red/green/brown/blue	100.8	166
7027068	6 x 1,5 + 1 x 2,5	10.3	ISO 4141 1.5 = black/yellow/red/green/brown/blue; 2.5 = white	110.4	187
7027069	8 x 1,5 + 1 x 2,5	11.7	ISO 4141 + grey/violet	139.2	239
7027070	10 x 1,5 + 3 x 2,5 + 1x(2x1,5)	14.4	white with black numbers; 1.5 = no. 1 - 3, 5 - 8, 10 - 12; 2.5 = no. 4, 9, 13; 1.5 = no. 14, 15	244.8	391
7027010	10 x 1,5 + 3 x 2,5 + 1x(2x1,5)	14.4	ISO 12098	244.8	391
7027071	10 x 1,5 + 3 x 2,5	14.4	white with black numbers; 1.5 = no. 1 - 3, 5 - 8, 10 - 12; 2.5 = no. 4, 9, 13	216.0	367
7027035	2 x 0,75 + 2 x 1,5	7.2	0.75 = white-brown; 1.5 = yellow-green	43.2	85
7027017	5 x 1,5 + 2 x 2,5	10.3	1.5 = black/yellow/green/brown/blue; 2.5 = white/red	120.0	217
7027004	8 x 1,5 + 5 x 2,5	14.8	1.5 = yellow/blue/green/brown/red/black/pink/white-blue; 2.5 = white/orange/grey/white-black/white-red	235.2	360
7027073	9 x 1,5 + 4 x 2,5	14.8	white with black numbers; 1.5 = no. 2, 4 - 8, 10 - 12; 2.5 = no. 1, 3, 9, 13	225.6	352
7027074	4 x 6 + 1 x 1,5	13.7	1.5 = grey; 6.0 = brown/red/black/blue	244.8	352

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® TRUCK 470 P FLRY11Y



Benefits

- Special ADR approval
- ADR approval enables use in vehicles transporting hazardous goods

Application range

- Commercial vehicles
- Wiring of electrical equipments in all trailers and semi-trailers

Product features

- UV-resistant
- Resistant to cold temperatures
- Resistant to most oils, chemicals and weather conditions
- Resistant to hydrolysis and microbes








Approvals

-  
- ISO 4141 and DIN/ISO 6722

Design

- Strands of bare copper wires
- Core insulation: Based on PVC
- Special PVC-based inner sheath
- Outer sheath made of special polyurethane

Technical data

-  **Core identification code**
ISO 4141-3
-  **Insulation resistance**
10 MΩm x km
- Capacity of data pairs**
Related to length between cores, max. 50 pF/m and between each data transmission core and all other cores in the cable, max. 100 pF/m
-  **Conductor stranding**
Fine wire according to DIN/ISO 6722
-  **Minimum bending radius**
12 x outer diameter
-  **Nominal voltage**
60 V
-  **Test voltage**
5 kV rms for at least 5 min.
-  **Temperature range**
Fixed installation: -40°C to +85°C
Area of application, Class A

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Colour	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® TRUCK 470 P FLRY11Y					
7027080	2 x 1,0	6.0	white-black	19.2	55
7027081	2 x 1,0	6.0	white-brown	19.2	55
7027020	2 x 1,5	6.6	white-black	28.8	68
7027021	2 x 1,5	6.6	white-brown	28.8	68
7027082	3 x 1,0	6.3	black-brown-blue	28.8	67
7027022	3 x 1,0	6.3	white/brown/blue, newest ISO design	28.8	67
7027083	4 x 1,0	6.8	white/black/red/brown	38.4	81
7027038	4 x 1,5	7.5	white/black/red/brown	57.6	106
7027084	5 x 1,0	7.5	white/brown/green/red/grey	48.0	97
7027085	5 x 1,0 + 1 x 2,5	9.0	1.0 = green/brown/red/blue/violet; 2.5 = white	72.0	133
7027086	5 x 1,0 + 1 x 2,5	9.0	1.0 = yellow/black/red/blue/violet; 2.5 = white	72.0	133
7027025	5 x 1,0 + 1 x 2,5	9.0	1.0 = brown/green/red/grey/violet; 2.5 = white, newest ISO design	72.0	133
7027087	6 x 1,5 + 1 x 2,5	10.3	ISO 4141 1.5 = black/yellow/red/green/brown/blue; 2.5 = white	110.4	187
7027130	7 x 0,75	7.3	white/black/yellow/red/green/brown/blue	50.4	101
7027088	7 x 1,5	8.9	white/black/yellow/red/green/brown/blue	100.8	166
7027089	8 x 1,5 + 1 x 2,5	11.7	ISO 4141 + grey/violet	139.2	239
7027090	10x1,5+3x2,5+1x(2x1,5)	14.4	white with black numbers; 1.5 = no. 1 - 3, 5 - 8, 10 - 12; 2.5 = no. 4, 9, 13; 1.5 = no. 14, 15	244.8	391
7027030	10x1,5+3x2,5+1x(2x1,5)	14.4	ISO 12098	244.8	395
7027091	10x1,5+3x2,5	14.4	white with black numbers; 1.5 = no. 1 - 3, 5 - 8, 10 - 12; 2.5 = no. 4, 9, 13	216.0	367
7027031	10x1,5+3x2,5	14.4	1.5 = yellow/green/blue/black/brown/red/pink/grey/white-black/white-blue; 2.5 = white/orange/white-red	216.0	367
7027046	2 x 0,75 + 2 x 1,5	7.2	0.75 = white-brown; 1.5 = yellow-green	43.2	85
7027092	2 x 6 + 3 x 1,5 ABS	12.1	DIN 72570 6.0 = red/brown; 1.5 = black/yellow/white	158.4	267
7027093	2x6+3x1,5+1x(2x1,5) EBS	12.1	DIN 72570 6.0 = red/brown; 1.5 = black/yellow/white; 1.5 = white-grey/white-brown	187.2	321
7027094	2x4+3x1,5+1x(2x1,5) EBS	11.9	DIN 72570 4.0 = red/brown; 1.5 = black/yellow/white; 1.5 = white-grey/white-brown	148.8	257
7027024	18 x 1,5	13.7	white with black numbers	259.2	407
7027032	25 x 1,5	16.1	white with black numbers	360.0	560
7027079				672.0	

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® TRUCK REFLEX FLY11Y



Info

- Reflective

Benefits

- Fulfils the reflection values according to Art. 51a/7 of the German Road Traffic Licensing Regulation (StVZO) acc. to DIN 67520 Part 2 for long material trailers

Application range

- Commercial vehicles
- Long material trailers

Product features

- UV-resistant
- Resistant to cold temperatures
- Resistant to most oils, chemicals and weather conditions
- Resistant to hydrolysis and microbes

Approvals



- ISO 4141 and DIN/ISO 6722

Design

- Strands of bare copper wires
- Core insulation: Based on PVC
- Retroreflective film wrapping
- Outer sheath made of special polyurethane

Technical data

- Core identification code**
ISO 4141-3
- Insulation resistance**
10 MOhm x km
- Capacity of data pairs**
Related to length between cores, max. 50 pF/m and between each data transmission core and all other cores in the cable, max. 100 pF/m
- Conductor stranding**
Fine wire according to DIN/ISO 6722
- Minimum bending radius**
12 x outer diameter
- Nominal voltage**
60 V
- Test voltage**
5 kV rms for at least 5 min.
- Temperature range**
Fixed installation: -40°C to +85°C
Area of application, Class A

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Colour	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® TRUCK REFLEX FLY11Y					
7027039	4 x 1,0	8.0	white/black/red/brown	38.4	85
7027040	7 x 1,5	9.9	white/black/yellow/red/green/brown/blue	100.8	163
7027043	10x1,5+3x2,5+1x(2x1,5)	15.4	white with black numbers; 1.5 = no. 1 - 3, 5 - 8, 10 - 12; 2.5 = no. 4, 9, 13; 1.5 = no. 14, 15	244.8	360

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® TRUCK 170 TWIN



Benefits

- Polarity identification is possible without stripping the sheath or external marking (the item designation is always printed on the positive pole). This rules out incorrect connections.
- No brushing of cores after stripping and therefore optimum subsequent handling, for example when crimping/contacting
- Special ADR approval

Application range

- Battery cable between the power source and the end user
- Commercial vehicles

Product features

- Double-sheathed version, extremely tough, for installation without corrugated tubing
- Very strong connection but offering easy separation of the cable by hand

Approvals



Design

- Strands of bare copper wires
- Core insulation: Based on PVC
- Special PVC-based outer sheath

Technical data

- Insulation resistance**
10 MOhm x km
- Minimum bending radius**
15 x outer diameter
- Nominal voltage**
60 V DC
- Test voltage**
3000 V AC
- Temperature range**
Fixed installation: -40°C to +85°C
Area of application, Class A

Article number	Number of cores and mm ² per conductor	Outer dimensions, width x height (mm)	Copper index (kg/km)
ÖLFLEX® TRUCK 170 TWIN PVC/PVC			
7027055	PVC/PVC 2 x 6,0	15,2 x 7,1	115,2
7027056	PVC/PVC 2 x 10,0	18,8 x 8,9	192,0
7027057	PVC/PVC 2 x 16,0	21,0 x 10,0	307,2
7027058	PVC/PVC 2 x 25,0	25,6 x 12,3	480,0
7027059	PVC/PVC 2 x 35,0	28,4 x 13,5	672,0
7027054	PVC/PVC 2 x 50,0	33,0 x 16,0	960,0
7027052	PVC/PVC 2 x 70,0	39,8 x 18,4	1,344,0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Details of the clamping force are available upon request, halogen-free.
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® TRAFFIC 3GKW

Single-core cable for more demanding requirements in railway applications

LAPP KABEL STUFGART ÖLFLEX® TRAFFIC 3GKW CC



Info

- Meets the highest fire-protection requirements

Benefits

- High flexibility and slim diameters enable small bending radii for fixed installation
- Easy to strip and dismantle
- Resistant to mechanical influences in harsh environmental conditions
- Extended temperature range
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railway vehicles and buses
- Suitable for connecting to fixed and moving objects such as lamps, heating equipment, electrical equipment, vehicle wiring, terminal boxes and power supplies

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame-retardant (IEC 60332-1-2)
 - No fire propagation (IEC 60332-3-24)
 - Low fire load (DIN 51900)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)
 - No fluorine (EN 60684-2)

Approvals



Design

- Tinned-copper strand, fine-wire
- Electron beam cross-linked polyolefin copolymer insulation
- Colour: grey or green-yellow

Technical data

- Conductor stranding**
 Fine wire according to VDE 0295, class 5 (SRC = Special Round Conductor)
- Minimum bending radius**
 < 10 mm fixed installation > 3 x D
 Occasional movement > 5 x D
 > 10 mm fixed installation > 4 x D
 Occasional movement > 6 x D
- Nominal voltage**
 U₀/U AC 0.6/1 kV
 U₀/U DC 0.9/1.5 kV
- Test voltage**
 3,5 kV
- Temperature range**
 Fixed installation:
 -45 °C to +120 °C
 Occasional flexing:
 -35°C to +90°C
 Short circuit: +200°C

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	Fire load (kWh/m)
ÖLFLEX® TRAFFIC 3GKW - grey					
4223293	0.5	2.0	4.8	8	0.014
4223294	0.75	2.2	7.2	11	0.017
4223295	1	2.4	9.6	14	0.020
4223296	1.5	2.7	14.4	21	0.023
4223297	2.5	3.4	24.0	31	0.034
4223298	4	3.9	38.4	46	0.040
4223299	6	4.4	57.6	66	0.047
4223300	10	5.3	96.0	106	0.059
4223301	16	7.0	154.0	164	0.081
4223302	25	8.4	240.0	238	0.124
4223303	35	9.5	336.0	330	0.142
4223304	50	11.9	480.0	483	0.200
4223305	70	14.1	672.0	674	0.262
4223306	95	15.4	912.0	883	0.288
4223307	120	17.4	1,152.0	1103	0.357
4223308	150	20.1	1,440.0	1370	0.480
ÖLFLEX® TRAFFIC 3GKW - green-yellow					
4223314	0.75	2.2	7.2	11	0.017
4223316	1.5	2.7	14.4	21	0.023
4223317	2.5	3.4	24.0	31	0.034
4223318	4	3.9	38.4	46	0.040
4223319	6	4.4	57.6	66	0.047
4223320	10	5.3	96.0	106	0.059
4223321	16	7.0	154.0	164	0.081
4223322	25	8.4	240.0	238	0.134
4223323	35	9.5	336.0	330	0.142
4223324	50	11.9	480.0	483	0.200
4223325	70	14.1	672.0	674	0.262

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® TRAFFIC 4GKW-AXplus refer to page 143

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® TRAFFIC 3GKW flex

Multi-core cable for more demanding requirements in railway applications

LAPP KABEL STUTTGART ÖLFLEX® TRAFFIC 3GKW flex CC



Info

- Meets the highest fire-protection requirements

Benefits

- High flexibility and slim diameters enable small bending radii for fixed installation
- Easy to strip and dismantle
- Resistant to mechanical influences in harsh environmental conditions
- Extended temperature range
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railway vehicles and buses
- Suitable for connecting to fixed and moving objects such as lamps, heating equipment, electrical equipment, vehicle wiring, terminal boxes and power supplies

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame-retardant (IEC 60332-1-2)
 - No fire propagation (IEC 60332-3-24)
 - Low fire load (DIN 51900)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)
 - No fluorine (EN 60684-2)

Approvals



Design

- Tinned-copper strand, fine-wire
- Electron beam cross-linked polyolefin copolymer insulation
- Colour of core insulation: white with black printed numbers
- Outer sheath: electron beam cross-linked polyolefin copolymer
- Outer sheath colour: black

Technical data

- Conductor stranding**
Fine wire according to VDE 0295, class 5 (SRC = Special Round Conductor)
- Minimum bending radius**
< 10 mm fixed installation > 3 x D
Occasional movement > 5 x D
> 10 mm fixed installation > 4 x D
Occasional movement > 6 x D
- Nominal voltage**
U₀/U AC 0.6/1 kV
U₀/U DC 0.9/1.5 kV
- Test voltage**
4 kV
- Temperature range**
Fixed installation:
-45 °C to +120 °C
Occasional flexing:
-35 °C to +90 °C
Short circuit: +200 °C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	Fire load (kWh/m)
ÖLFLEX® TRAFFIC 3GKW flex					
4223395	2 X 0.5	5.5	9.6	40	0.130
4223396	3 X 0.5	5.7	14.4	50	0.130
4223397	4 X 0.5	6.3	19.2	62	0.160
4223398	5 X 0.5	6.9	24.0	74	0.190
4223399	7 X 0.5	8.2	33.6	102	0.250
4224460	10 X 0.5	9.3	48.0	125	0.286
4223400	2 X 0.75	6.0	14.4	49	0.150
4223401	3 X 0.75	6.2	21.6	63	0.150
4223402	4 X 0.75	6.9	28.8	78	0.180
4223403	5 X 0.75	7.7	36.0	97	0.220
4223404	7 X 0.75	9.1	50.4	131	0.290
4223405	2 X 1.0	6.4	19.2	60	0.150
4223406	3 X 1.0	6.8	28.8	78	0.180
4223407	4 X 1.0	7.4	38.4	95	0.210
4223408	5 X 1.0	8.3	48.0	119	0.260
4223409	7 X 1.0	9.9	67.2	163	0.350
4223410	2 X 1.5	7.1	28.8	75	0.220

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	Fire load (kWh/m)
4223411	3 X 1.5	7.4	43.2	96	0.210
4223412	3 G 1.5	7.4	43.2	96	0.210
4223413	4 X 1.5	8.3	57.6	120	0.250
4223414	4 G 1.5	8.3	57.6	120	0.250
4223415	5 X 1.5	9.1	72.0	146	0.310
4223416	7 X 1.5	11.1	108.0	207	0.410
4224512	12 X 1.5	13.4	172.8	305	0.540
4223417	2 X 2.5	8.5	48.0	115	0.240
4223418	3 X 2.5	8.9	72.0	149	0.280
4223419	3 G 2.5	8.9	72.0	149	0.280
4223420	4 X 2.5	9.9	96.0	183	0.350
4223421	4 G 2.5	9.9	96.0	183	0.350
4223422	5 X 2.5	11.1	120.0	235	0.430
4223423	7 X 2.5	13.0	168.0	309	0.560
4223425	3 X 4	10.2	115.0	210	0.360
4223426	3 G 4	10.2	115.0	210	0.360
4223427	4 X 4	11.3	154.0	266	0.430
4223428	5 X 4	12.6	192.0	330	0.530

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® TRAFFIC 3GKW C-flex refer to page 142

ÖLFLEX® TRAFFIC 3GKW C-flex

Screened multi-core cable for additional requirements in railway applications

LAPP KABEL STUTTGART ÖLFLEX® TRAFFIC 3GKW C-flex CE



Info

- Screened to comply with EMC

Benefits

- Copper screening complies with EMC requirements and protects against electromagnetic interference
- High flexibility and slim diameters enable small bending radii for fixed installation
- Resistant to mechanical influences in harsh environmental conditions
- Extended temperature range
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railway vehicles and buses
- Suitable for connecting to fixed and moving objects such as lamps, heating equipment, electrical equipment, vehicle wiring, terminal boxes and power supplies

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame-retardant (IEC 60332-1-2)
 - No fire propagation (IEC 60332-3-24)
 - Low fire load (DIN 51900)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)
 - No fluorine (EN 60684-2)

Approvals



Design

- Tinned-copper strand, fine-wire
- Electron beam cross-linked polyolefin copolymer insulation
- Colour of core insulation: white with black printed numbers
- Tinned-copper braiding
- Outer sheath: electron beam cross-linked polyolefin copolymer
- Outer sheath colour: black

Technical data

- Conductor stranding**
Fine wire according to VDE 0295, class 5 (SRC = Special Round Conductor)
- Minimum bending radius**
< 10 mm fixed installation > 5 x D
Occasional movement > 7 x D
> 10 mm fixed installation > 6 x D
Occasional movement > 8 x D
- Nominal voltage**
U₀/U AC 0.6/1 kV
U₀/U DC 0.9/1.5 kV
- Test voltage**
Core/Core: 4 kV
Core/Screen: 4 kV
- Temperature range**
Fixed installation:
-45 °C to +120 °C
Occasional flexing:
-35 °C to +90 °C
Short circuit: +200 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	Fire load (kWh/m)
ÖLFLEX® TRAFFIC 3GKW C-flex					
4223441	2 X 0.5	6.1	28.4	56	0.120
4223442	3 X 0.5	6.4	34.9	65	0.110
4223443	4 X 0.5	7.1	43.3	81	0.140
4223444	5 X 0.5	7.7	48.9	94	0.180
4223445	7 X 0.5	8.9	63.7	127	0.240
4223446	10 X 0.5	10.0	82.5	156	0.280
4223447	12 X 0.5	10.5	93.9	177	0.320
4223448	2 X 0.75	6.7	35.8	69	0.140
4223449	3 X 0.75	7.0	43.9	79	0.130
4223450	4 X 0.75	7.7	53.7	98	0.170
4223451	5 X 0.75	8.4	66.0	119	0.200
4223452	7 X 0.75	10.0	84.9	164	0.290
4223453	10 X 0.75	11.1	111.0	199	0.330
4223454	12 X 0.75	11.6	127.0	225	0.370
4223455	2 X 1.0	7.1	43.3	82	0.140
4223456	3 X 1.0	7.5	53.7	83	0.140
4223457	4 X 1.0	8.2	68.4	117	0.190
4223458	5 X 1.0	9.0	79.0	139	0.220
4223459	7 X 1.0	10.6	104.0	193	0.330
4223460	2 X 1.5	7.7	54.5	100	0.180
4223461	3 X 1.5	8.1	73.2	114	0.170
4223462	3 G 1.5	8.1	73.2	114	0.170
4223463	4 X 1.5	8.9	88.6	139	0.210
4223464	5 X 1.5	9.9	106.5	173	0.290
4223465	5 G 1.5	9.9	106.5	173	0.290
4223466	7 X 1.5	11.7	145.9	243	0.390
4223467	2 X 2.5	8.9	79.0	133	0.270
4223468	3 X 2.5	9.4	104.7	155	0.210
4223469	3 G 2.5	9.4	104.7	155	0.210
4223470	4 X 2.5	10.5	133.1	200	0.290
4223471	5 X 2.5	11.6	165.1	250	0.390
4223472	5 G 2.5	11.6	165.1	250	0.390
4223473	7 X 2.5	13.7	217.3	345	0.530
4223475	3 X 4	10.8	153.2	216	0.270
4223476	3 G 4	10.8	153.2	216	0.270
4223477	4 X 4	11.9	198.7	279	0.360
4223478	5 X 4	13.4	240.0	353	0.450

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® TRAFFIC 4GKW-AXplus

Single-core power cable for increased voltage ratings

LAPP KABEL STUTTGART ÖLFLEX® TRAFFIC 4GKW-AX plus



Info

- Voltage rating 1.8/3 kV
- Cold-resistant to -60°C

Benefits

- High electrical strength and mechanical durability due to dual-layer cable construction
- High flexibility and slim diameters enable small bending radii for fixed installation
- Resistant to mechanical influences in harsh environmental conditions
- Good chemical-resistance and high flammability rating
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railway vehicles and buses
- For connecting stationary and moving parts
- Suitable for cabling of control cabinets, distributors, converters, panel units and blocks, and resistance and braking blocks

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame-retardant (IEC 60332-1-2)
 - No fire propagation (IEC 60332-3-24)
 - Low fire load (DIN 51900)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)
 - No fluorine (EN 60684-2)

Approvals



Design

- Tinned-copper strand, fine-wire
- Insulation: cross-linked polyolefin copolymer
- Outer sheath: electron beam cross-linked elastomer
- Outer sheath colour: black

Technical data

- Conductor stranding**
Fine wire according to VDE 0295, class 5 (SRC = Special Round Conductor)
- Minimum bending radius**
< 10 mm fixed installation > 5 x D
Occasional movement > 7 x D
> 10 mm fixed installation > 6 x D
Occasional movement > 8 x D
- Nominal voltage**
U₀/U AC 1.8/3 kV
U_{DC} 2.7 kV
- Test voltage**
6.5 kV AC
- Temperature range**
Fixed installation:
-60°C to +120°C
Occasional flexing:
-35°C to +90°C
Short circuit: +200°C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	Fire load (kWh/m)
ÖLFLEX® TRAFFIC 4GKW-AXplus					
4222082	1.5	3.3	14.4	24	0.040
4222083	2.5	3.7	24.0	34	0.040
4222084	4	4.5	38.4	53	0.060
4222085	6	5.0	57.6	74	0.080
4222086	10	6.1	96.0	118	0.100
4222087	16	8.3	153.6	182	0.170
4222088	25	10.0	240.0	274	0.250
4222089	35	11.4	336.0	379	0.310
4222090	50	13.6	480.0	536	0.390
4222091	70	15.6	672.0	729	0.450
4222092	95	17.3	912.0	960	0.560
4222093	120	19.6	1,152.0	1203	0.710
4222094	150	21.9	1,440.0	1464	0.800
4222095	185	23.8	1,776.0	1802	0.930
4222096	240	26.8	2,304.0	2348	1.160

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® TRAFFIC 4GKW-AXplus C-flex refer to page 144

ÖLFLEX® TRAFFIC 4GKW-AXplus C-flex

Screened single core power cable for increased voltage ratings

LAPP KABEL STUTTGART ÖLFLEX® TRAFFIC 4GKW-AX plus C-flex



Info

- Voltage rating 1.8/3 kV
- Cold-resistant to -60°C
- Screened to comply with EMC

Benefits

- High electrical strength and mechanical durability due to dual-layer cable construction
- Copper screening complies with EMC requirements and protects against electromagnetic interference
- High flexibility and slim diameters enable small bending radii for fixed installation
- Resistant to mechanical influences in harsh environmental conditions
- Good chemical-resistance and high flammability rating

Application range

- For fixed and protected installations inside or outside of railway vehicles and buses
- For connecting stationary and moving parts
- Suitable for cabling of control cabinets, distributors, converters, panel units and blocks, and resistance and braking blocks

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame-retardant (IEC 60332-1-2)
 - No fire propagation (IEC 60332-3-24)
 - Low fire load (DIN 51900)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)
 - No fluorine (EN 60684-2)

Approvals



Design

- Tinned-copper strand, fine-wire
- Insulation: cross-linked polyolefin copolymer
- Inner sheath: electron beam cross-linked elastomer, black
- Tinned-copper braiding
- Outer sheath: electron beam cross-linked elastomer
- Outer sheath colour: black

Technical data

- Conductor stranding**
Fine wire according to VDE 0295, class 5 (SRC = Special Round Conductor)
- Minimum bending radius**
< 10 mm fixed installation > 5 x D
Occasional movement > 7 x D
> 10 mm fixed installation > 6 x D
Occasional movement > 8 x D
- Nominal voltage**
U₀/U AC 1.8/3 kV
U₀DC 2.7 kV
- Test voltage**
6.5 kV AC
- Temperature range**
Fixed installation:
-60°C to +120°C
Occasional flexing:
-35°C to +90°C
Short circuit: +200°C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	Fire load (kWh/m)
ÖLFLEX® TRAFFIC 4GKW-AXplus C-flex					
4223336	1.5	4.9	25.1	47	0.080
4223337	2.5	5.5	35.6	62	0.100
4223338	4	6.7	59.8	95	0.140
4223339	6	7.4	81.6	123	0.160
4223340	10	8.5	126.0	178	0.210
4223341	16	10.7	192.0	261	0.320
4223342	25	12.5	285.0	371	0.430
4223343	35	14.0	387.0	492	0.530
4223344	50	16.5	562.0	693	0.660
4223345	70	18.6	766.0	913	0.780
4223346	95	20.3	1,019.0	1165	0.910
4223347	120	22.8	1,268.0	1441	1.140
4223348	150	25.1	1,572.0	1730	1.280
4223349	185	27.0	1,917.0	2088	1.450
4223350	240	30.2	2,504.0	2709	1.740
4223351	300	32.8	3,099.0	3329	2.030
4223352	400	37.1	4,088.0	4250	2.420

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® TRAFFIC 4GKW-AXplus refer to page 143

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

ÖLFLEX® SOLAR XLR-R

The new generation of electron beam cross-linked solar cables with reduced diameters - TÜV type approved

Info

- TÜV Type approved (2PFG 1169/08.07) According to DKE specification PV1-F
- Optimised cable design - thin, light and robust
- Substitutes version XLR und XLR TF



Benefits

- Reduced outer diameters enable space and weight saving installation
- Reduction of flame propagation as well as of toxic combustion gases in the event of fire
- Robust against mechanical impacts
- Colour-coding of the core insulation simplifies the differentiation of the polarity during installation
- Exact quantity control during installation by meter marking on the cable sheath

Application range

- For the cabling between the solar modules and as an extension cable between the individual module strings or DC/AC inverter
- Gable and flat roof photovoltaic systems
- Photovoltaic plants and solar parks
- For the cabling of flexible or building-integrated photovoltaic systems

Product features

- Excellent weather, temperature and UV-resistance
- Good notch and abrasion resistance
- Good heat pressure resistance
- Halogen-free and flame-retardant
- XLR-R = X-Linked Radiated-Reduced Proven electron beam cross-linked quality

Approvals

CE, TÜV, RoHS

- TÜV Type approved (2PFG 1169/08.07)
- Halogen-free according to EN 50267-2-1/-2
- Ozone-resistant according to EN 50396
- Weather/UV-resistant acc. to HD 605/A1
- Acid and alkali-resistant acc. EN 60811-2-1

Design

- Conductor: fine-wire tinned-copper strands
- Core insulation: electron beam cross-linked copolymer
- Colour of core insulation: white, red or blue
- Outer sheath: electron beam cross-linked copolymer
- Outer sheath colour: black

Technical data

Approvals
PV1-F (TÜV type approved according to 2 PFG 1169/08.2007)

Conductor stranding
Fine wire according to VDE 0295, class 5/IEC 60228 class 5

Minimum bending radius
Fixed installation: 4 x outer diameter

Nominal voltage
AC U_0/U : 600/1000 V
DC U_0/U : 900/1500 V
Max. permissible operating voltage: DC 1,8 kV (Conductor-conductor, non earthed system)

Test voltage
AC 6500 V

Current rating
Im compliance with TÜV requirements spec. 2 PFG 1169/08.2007 table 1

Temperature range
-40°C to +120°C max. conductor temperature based on EN 60216-1
Ambient temperature range according to TÜV 2 PFG 1169/08.2007: -40°C to +90°C

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR XLR-R				
Core insulation: white / Outer sheath: black				
0023175	1.5	4.4	14.4	34
0023176	2.5	4.8	24.0	46
0023177	4.0	5.2	38.4	63
0023178	6.0	5.8	57.6	86
0023179	10.0	7.0	96.0	132
0023180	16.0	8.3	153.6	197
Core insulation: red / Outer sheath: black				
0023186	1.5	4.4	14.4	34
0023187	2.5	4.8	24.0	46
0023188	4.0	5.2	38.4	63
0023189	6.0	5.8	57.6	86
0023190	10.0	7.0	96.0	132
0023191	16.0	8.3	153.6	197
Core insulation: blue / Outer sheath: black				
0023192	1.5	4.4	14.4	34
0023193	2.5	4.8	24.0	46
0023194	4.0	5.2	38.4	63
0023195	6.0	5.8	57.6	86
0023196	10.0	7.0	96.0	132
0023197	16.0	8.3	153.6	197

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil 100 m; Drum (500; 1000) m
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® SOLAR 4 Thin M pre-assembled refer to page 640
- Universal strip stripping and cutting tool refer to page 906
- KS 20 cable shears refer to page 904
- EPIC® SOLAR 4 THIN F pre-assembled refer to page 640

Special applications

Photovoltaic

ÖLFLEX® SOLAR XLR

Electron beam cross-linked solar cables according to the PV1-F design



Info

- TÜV Type approved (2PFG 1169/08.07)
- Please note: Discontinued product!
- For a future alternative product see ÖLFLEX® SOLAR XLR-R

Benefits

- High thermal capacity for long-lasting operation of the PV system in all seasons
- Reduction of flame propagation as well as of toxic combustion gases in the event of fire
- Colour-coding of the core insulation simplifies the differentiation of the polarity during installation
- Robust against mechanical impacts
- Exact quantity control during installation by meter marking on the cable sheath

Application range

- For the cabling between the solar modules and as an extension cable between the individual module strings or DC/AC inverter
- Gable and flat roof photovoltaic systems
- Photovoltaic plants and solar parks
- For the cabling of flexible or building-integrated photovoltaic systems

Product features

- Excellent weather, temperature and UV-resistance
- Good notch and abrasion resistance
- Good heat pressure resistance
- Halogen-free and flame-retardant
- XLR = X-Linked Radiated
Proven electron beam cross-linked quality

Approvals



- TÜV Type approved (2PFG 1169/08.07)
- Halogen-free according to EN 50267-2-1/-2
- Ozone-resistant according to EN 50396
- Weather/UV-resistant acc. to HD 605/A1
- Acid and alkali-resistant acc. EN 60811-2-1

Design

- Conductor: fine-wire tinned-copper strands
- Core insulation: electron beam cross-linked copolymer
- Colour of core insulation: black, red or blue
- Outer sheath: electron beam cross-linked copolymer
- Outer sheath colour: black

Technical data



Approvals

PV1-F (TÜV type approved according to 2 PFG 1169/08.2007)



Conductor stranding

Fine wire according to VDE 0295, class 5/IEC 60228 class 5



Minimum bending radius

Fixed installation: 4 x outer diameter



Nominal voltage

AC U_0/U : 600/1000 V
DC U_0/U : 900/1500 V
Max. permissible operating voltage: DC 1,8 kV (Conductor-conductor, non earthed system)



Test voltage

AC 6500 V



Current rating

Im compliance with TÜV requirements spec. 2 PFG 1169/08.2007 table 1



Temperature range

-40°C to +120°C max. conductor temperature based on EN 60216-1
Ambient temperature range according to TÜV 2 PFG 1169/08.2007: -40°C to +90°C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR XLR				
Core insulation: black / Outer sheath: black				
0025906	2.5	6.0	24.0	58
0025907	4.0	6.5	38.4	77
0025908	6.0	7.1	57.6	102
0025909	10.0	8.9	96.0	163
0025910	16.0	9.8	153.6	225
Core insulation: red / Outer sheath: black				
0025912	2.5	6.0	24.0	58
0025913	4.0	6.5	38.4	77
0025914	6.0	7.1	57.6	102
0025915	10.0	8.9	96.0	163
0025916	16.0	9.8	153.6	225
Core insulation: blue / Outer sheath: black				
0025918	2.5	6.0	24.0	58
0025919	4.0	6.5	38.4	77
0025920	6.0	7.1	57.6	102
0025921	10.0	8.9	96.0	163
0025922	16.0	9.8	153.6	225

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil 100 m; Drum (500; 1000) m
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SOLAR XLR-R refer to page 145
- ÖLFLEX® SOLAR XLR TF refer to page 147

Accessories

- EPIC® SOLAR 4 Thin M pre-assembled refer to page 640
- Universal strip stripping and cutting tool refer to page 906
- KS 20 cable shears refer to page 904
- EPIC® SOLAR 4 THIN F pre-assembled refer to page 640

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

ÖLFLEX® SOLAR XLR TF

Electron beam cross-linked solar cables according to the PV1-F design

LAPP KABEL STÜTTGART ÖLFLEX® SOLAR XLR TF ROHS CE

LAPP KABEL STÜTTGART ÖLFLEX® SOLAR XLR TF BLUE ROHS CE

LAPP KABEL STÜTTGART ÖLFLEX® SOLAR XLR TF RED ROHS CE



Info

- TÜV Type approved (2PFG 1169/08.07)
- Please note: Discontinued product!
- For a future alternative product see ÖLFLEX® SOLAR XLR-R

Benefits

- Reduced outer diameters enable space and weight saving installation
- Reduction of flame propagation as well as of toxic combustion gases in the event of fire
- Colour-coding of the core insulation simplifies the differentiation of the polarity during installation
- High thermal capacity for long-lasting operation of the PV system in all seasons
- Exact quantity control during installation by meter marking on the cable sheath

Application range

- For the cabling between the solar modules and as an extension cable between the individual module strings or DC/AC inverter
- Gable and flat roof photovoltaic systems
- Photovoltaic plants and solar parks
- For the cabling of flexible or building-integrated photovoltaic systems

Product features

- Excellent weather, temperature and UV-resistance
- Good notch and abrasion resistance
- Good heat pressure resistance
- Halogen-free and flame-retardant
- XLR = X-Linked Radiated
Proven electron beam cross-linked quality

Approvals



- TÜV Type approved (2PFG 1169/08.07)
- Halogen-free according to EN 50267-2-1/-2
- Ozone-resistant according to EN 50396
- Weather/UV-resistant acc. to HD 605/A1
- Acid and alkali-resistant acc. EN 60811-2-1

Design

- Conductor: fine-wire tinned-copper strands
- Core insulation: electron beam cross-linked copolymer
- Colour of core insulation: black, red or blue
- Outer sheath: electron beam cross-linked copolymer
- Outer sheath colour: black

Technical data

DIN VDE Approvals
PV1-F (TÜV type approved according to 2 PFG 1169/08.2007)

Conductor stranding
Fine wire according to VDE 0295, class 5/IEC 60228 class 5

Minimum bending radius
Fixed installation: 4 x outer diameter

Nominal voltage
AC U₀/U : 600/1000 V
DC U₀/U : 900/1500 V
Max. permissible operating voltage: DC 1,8 kV (Conductor-conductor, non earthed system)

Test voltage
AC 6500 V

Current rating
Im compliance with TÜV requirements spec. 2 PFG 1169/08.2007 table 1

Temperature range
-40°C to +120°C max. conductor temperature based on EN 60216-1
Ambient temperature range according to TÜV 2 PFG 1169/08.2007: -40°C to +90°C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR XLR TF				
Core insulation: black / Outer sheath: black				
0025905	1.5	5.4	14.4	43
0025923	2.5	5.4	24.0	51
0025943	4.0	6.0	38.4	70
Core insulation: red / Outer sheath: black				
0025911	1.5	5.4	14.4	43
0025926	2.5	5.4	24.0	51
0025946	4.0	6.0	38.4	70
Core insulation: blue / Outer sheath: black				
0025917	1.5	5.4	14.4	43
0025927	2.5	5.4	24.0	51
0025947	4.0	6.0	38.4	70

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil 100 m; Drum (500; 1000) m
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SOLAR XLR-R refer to page 145

Accessories

- EPIC® SOLAR 4 Thin M pre-assembled refer to page 640
- Universal strip stripping and cutting tool refer to page 906
- KS 20 cable shears refer to page 904
- EPIC® SOLAR 4 THIN F pre-assembled refer to page 640

New

ÖLFLEX® SOLAR XLS-R

Electron beam cross-linked solar cables with reduced outer diameters



Info

- Optimised cable design - thin, light and robust

Benefits

- Reduced outer diameters enable space and weight saving installation
- Robust against mechanical impacts
- Reduction of flame propagation as well as of toxic combustion gases in the event of fire
- Colour-coding of the core insulation simplifies the differentiation of the polarity during installation
- Exact quantity control during installation by meter marking on the cable sheath

Application range

- For the cabling between the solar modules and as an extension cable between the individual module strings or DC/AC inverter
- Gable and flat roof photovoltaic systems
- Photovoltaic plants and solar parks
- Flexible photovoltaic modules

Product features

- Weather, abrasion and UV-resistant
- Good heat pressure resistance
- Halogen-free and flame-retardant
- XLS-R = X-Linked Standard - Reduced Proven electron beam cross-linked quality
- Red and blue outer sheaths are also available upon request

Approvals



- Flame-retardant according to IEC 60332.1.2
- Halogen-free according to EN 50267-2-1/-2
- Ozone-resistant according to EN 50396
- Weather/UV-resistant acc. to HD 605/A1
- Acid and alkali-resistant acc. EN 60811-2-1

Design

- Conductor: fine-wire tinned-copper strands
- Core insulation: electron beam cross-linked copolymer
- Colour of core insulation: white, red or blue
- Outer sheath: electron beam cross-linked copolymer
- Outer sheath colour: black

Technical data

- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Fixed installation: 4 x outer diameter
- Nominal voltage**
AC U_0/U : 600/1000 V
DC U_0/U : 900/1500 V
Max. permissible operating voltage: DC 1,8 kV (Conductor-conductor, non earthed system)
- Test voltage**
AC 6500 V
- Temperature range**
Fixed installation:
-40 °C to +100 °C max. conductor temperature

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR XLS-R				
Core insulation: white / Outer sheath: black				
0023100	1.5	4.4	14.4	34
0023136	2.5	4.8	24.0	46
0023137	4.0	5.2	38.4	63
0023138	6.0	5.8	57.6	86
0023104	10.0	7.0	96.0	132
0023105	16.0	8.3	153.6	197
Core insulation: red / Outer sheath: black				
0023139	1.5	4.4	14.4	34
0023141	2.5	4.8	24.0	46
0023142	4.0	5.2	38.4	63
0023114	6.0	5.8	57.6	86
0023115	10.0	7.0	96.0	132
0023116	16.0	8.3	153.6	197
Core insulation: blue / Outer sheath: black				
0023117	1.5	4.4	14.4	34
0023118	2.5	4.8	24.0	46
0023119	4.0	5.2	38.4	63
0023120	6.0	5.8	57.6	86
0023143	10.0	7.0	96.0	132
0023144	16.0	8.3	153.6	197

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: Coil 100 m; Drum (500; 1000) m
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SOLAR XLR-R refer to page 145

Accessories

- EPIC® SOLAR 4 Thin M pre-assembled refer to page 640
- Universal strip stripping and cutting tool refer to page 906
- KS 20 cable shears refer to page 904
- EPIC® SOLAR 4 THIN F pre-assembled refer to page 640

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

ÖLFLEX® SOLAR XLR 4703

UL-listed solar cables according to NEC for use in North America

LAPP KABEL STUTTGART ÖLFLEX® SOLAR XLR 4703 600V RED ROHS CE



Info

- According to UL Subject 4703 Type PV Wire
- 2000 V version on request

Benefits

- Standard-compliant application for exposed wiring of PV systems in North America in compliance with US NFPA 70 NEC article 690.31 (National Electrical Code)
- High thermal capacity for long-lasting operation of the PV system in all seasons
- Reduction of flame propagation as well as of toxic combustion gases in the event of fire
- Robust against mechanical impacts
- Exact quantity control during installation by meter marking on the cable sheath

Application range

- For the cabling between the solar modules and as an extension cable between the individual module strings or DC/AC inverter
- Gable and flat roof photovoltaic systems
- Photovoltaic plants and solar parks

Product features

- Excellent weather, temperature and UV-resistance
- Good notch and abrasion resistance
- Good heat pressure resistance
- Halogen-free and flame-retardant
- XLR = X-Linked Radiated
Proven electron beam cross-linked quality

Approvals



- According to UL Subject 4703 Type PV Wire
- Halogen-free according to EN 50267-2-1/-2
- Flame-retardant according to IEC 60332-1-2, UL VW-1, Vertical Flame Test FV-1, CSA FT 2
- Ozone-resistant according to EN 50396
- Weather/UV-resistant acc. to HD 605/A1

Design

- Conductor: fine-wire tinned-copper strands
- Core insulation: electron beam cross-linked copolymer
- Colour of core insulation: red
- Outer sheath: electron beam cross-linked copolymer
- Outer sheath colour: black

Technical data



Approvals

UL PV-Wire listed (Photovoltaic Wire) according to UL Subject 4703



Conductor stranding

Fine wire according to VDE 0295, class 5/IEC 60228 class 5



Minimum bending radius

Fixed installation: 4 x outer diameter



Nominal voltage

AC U_0/U : 600/1000 V
DC U_0/U : 900/1500 V
Max. permissible operating voltage: DC 1,8 kV (Conductor-conductor, non earthed system)
According to UL: 600 V



Test voltage

AC 6500 V



Temperature range

Fixed installation: -40 °C to +120 °C
According to UL: -40 °C to +90 °C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR XLR 4703 600V				
Core insulation: red / Outer sheath: black				
0027130	2.5	5.9	24.0	55
0027133	4.0	6.3	38.4	69
0027136	6.0	6.9	57.6	92
0027139	10.0	8.9	96.0	158
0027142	16.0	10.2	153.6	228

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® SOLAR 4 Thin M pre-assembled refer to page 640
- Universal strip stripping and cutting tool refer to page 906
- KS 20 cable shears refer to page 904
- EPIC® SOLAR 4 THIN F pre-assembled refer to page 640

ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

SILVYN®

FLEXIMARK®

ACCESSORIES

APPENDIX

ÖLFLEX® SOLAR XLSv

Robust solar cables with large conductor cross-sections



Info

- Reinforced outer sheath design
- For high electrical power loads
- Suitable for direct burial

Benefits

- Reinforced outer sheath gives enhanced protection against mechanical stress
- High thermal capacity for long-lasting operation of the PV system in all seasons
- Reduction of flame propagation as well as of toxic combustion gases in the event of fire
- For outdoor use, and if the general installation guidelines are followed, this is also suitable for direct burial
- Exact quantity control during installation by meter marking on the cable sheath

Application range

- For connecting individual module strings, as well as for fixed solar generators and moving tracking systems
- Photovoltaic plants and solar parks
- Large conductor cross sections are used as a collecting main to transmit high power loads between the individual panel strings and as connection to the DC/AC inverter of large PV plants and solar fields

Product features

- Good weather, abrasion, temperature and UV-resistance
- Good heat pressure resistance
- Halogen-free and flame-retardant
- XLS - X-Linked Standard
Proven electron beam cross-linked quality

Approvals



- Weather/UV-resistant acc. to HD 605/A1
- Flame-retardant according to IEC 60332.1.2
- Halogen-free according to IEC 60754-1
- Ozone-resistant according to EN 50396
- Acid and alkali-resistant acc. EN 60811-2-1

Design

- Conductor: fine-wire tinned-copper strands
- Core insulation: electron beam cross-linked copolymer
- Outer sheath: electron beam cross-linked copolymer
- Outer sheath colour: black

Technical data



Core identification code
Black



Conductor stranding
Fine wire according to VDE 0295, class 5/IEC 60228 class 5



Minimum bending radius
Fixed installation: 4 x outer diameter



Nominal voltage
AC U_0/U : 600/1000 V
DC U_0/U : 900/1500 V
Max. permissible operating voltage: DC 1,8 kV (Conductor-conductor, non earthed system)



Test voltage
AC 6500 V



Temperature range
Fixed installation:
-40 °C to +100 °C max. conductor temperature

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR XLSv				
0027110	4.0	8.0	38.4	104
0027111	6.0	9.1	57.6	141
0027112	10.0	10.5	96.0	201
0027113	16.0	11.9	153.6	280
0027114	25.0	13.2	240.0	386
0027115	35.0	14.5	336.0	502
0027116	50.0	17.7	480.0	698
0027117	70.0	19.7	672.0	921

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Photographs are not to scale and do not represent detailed images of the respective products.

On request and under consideration of the economic minimum lengths, we produce versions with larger conductor cross sections, or with red or blue core insulation, or an imprinted code stripe on the black outer sheath as distinctive feature

Similar products

- ÖLFLEX® TRAF0 XLv 1.8/3 kV refer to page 151

Accessories

- Tube cable lugs KR/ KRT/ KRF refer to page 927
- WT 3195 G pressing pliers, hydraulic refer to page 929
- V 1311 pressing pliers, hydraulic refer to page 930
- Cable shears KT 4 and KT 5 refer to page 904

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

ÖLFLEX® TRAF0 XLv 1.8/3 kV

Flexible and mechanically robust single-core connection cables



Info

- Voltage rating 1.8/3 kV
- Suitable for direct burial
- Halogen-free and flame-retardant



Benefits

- Reinforced outer sheath gives enhanced protection against mechanical stress
- Wide temperature range for applications in harsh climatic environments
- Reduction of flame propagation as well as of toxic combustion gases in the event of fire
- For outdoor use, and if the general installation guidelines are followed, this is also suitable for direct burial
- Flexible and fine-wired conductor design enables easy on-site installation

Application range

- Applications with voltage rating 1.8/3 kV
- In the field of renewable energy and conventional power generation
- Photovoltaic plants and solar parks
- Drip-loop installation in wind turbines
- As connection between the converter and the transformer substation

Product features

- Good weather, abrasion, temperature and UV-resistance
- Good heat pressure resistance
- Halogen-free and flame-retardant
- Torsion-tested for wind turbines

Approvals



- Weather/UV-resistant acc. to HD 605/A1
- Flame-retardant according to IEC 60332.1.2
- Halogen-free according to IEC 60754-1
- Ozone-resistant according to EN 50396
- Direct burial according to UL 1277

Design

- Conductor: fine-wire tinned-copper strands
- Core insulation: cross-linked polyolefin
- Outer sheath: cross-linked copolymer
- Core insulation and outer sheath are extruded together
- Outer sheath colour: black

Technical data

- Core identification code**
Black
- Fire test**
Flame-retardant according to IEC 60332-1-2
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 5 x outer diameter
- Nominal voltage**
U₀/U: 1.8/3 kV
- Test voltage**
AC 6500 V
- Temperature range**
Flexing: -40 °C to +90 °C
Fixed installation: -40 °C to +90 °C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® TRAF0 XLv 1,8/3 kV				
1151010	95.0	22.1	912.0	1218
1151011	120.0	24.4	1,152.0	1496
1151012	150.0	25.9	1,440.0	1810
1151013	185.0	28.2	1,776.0	2184
1151014	240.0	30.3	2,304.0	2757
1151015	300.0	34.0	2,880.0	3407

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Drum

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SOLAR XLSv refer to page 150

Accessories

- Tube cable lugs KR/ KRT/ KRF refer to page 927
- WT 3195 G pressing pliers, hydraulic refer to page 929
- V 1311 pressing pliers, hydraulic refer to page 930
- Cable shears KT 4 and KT 5 refer to page 904

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

ÖLFLEX® SOLAR XLS-R T

Electron beam cross-linked solar twin-cables



Info

- Time-saving installation
- Ideal for stand-alone PV power systems
- Optimised cable design - thin, light and robust

Benefits

- Time-saving installation
- Reduced outer diameters enable space and weight saving installation
- Robust against mechanical impacts
- Reduction of flame propagation as well as of toxic combustion gases in the event of fire
- Exact quantity control during installation by meter marking on the cable sheath

Application range

- Ideal for stand-alone PV power systems
- Gable and flat roof photovoltaic systems
- Photovoltaic plants and solar parks
- Flexible photovoltaic modules

Product features

- Weather, abrasion and UV-resistant
- Good heat pressure resistance
- Halogen-free and flame-retardant
- Easy to split into two separate cables
- XLS-R T= X-Linked Standard-Reduced Twin Proven electron beam cross-linked quality

Approvals



- Flame-retardant according to IEC 60332.1.2
- Halogen-free according to EN 50267-2-1/-2
- Ozone-resistant according to EN 50396
- Weather/UV-resistant acc. to HD 605/A1
- Acid and alkali-resistant acc. EN 60811-2-1

Design

- Conductor: fine-wire tinned-copper strands
- Core insulation: electron beam cross-linked copolymer
- Outer sheath: electron beam cross-linked copolymer
- Outer sheath colour: black

Technical data



Core identification code
Black/red
blue/red



Conductor stranding
Fine wire according to VDE 0295, class 5/IEC 60228 class 5



Minimum bending radius
Fixed installation: 4 x outer diameter



Nominal voltage
AC U_0/U : 600/1000 V
DC U_0/U : 900/1500 V
Max. permissible operating voltage: DC 1,8 kV (Conductor-conductor, non earthed system)



Test voltage
AC 6500 V



Temperature range
Fixed installation:
-40 °C to +100 °C max. conductor temperature

Article number	Number of cores and mm ² per conductor	Outer dimensions, width x height (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR XLS-R T				
Core insulation: red/black				
0023982	2 X 2.5	9.9 x 4.8	48.0	94
0023984	2 X 4.0	10.7 x 5.2	76.8	128
0023986	2 X 6.0	11.9 x 5.8	115.2	174
0023988	2 X 10.0	14.3 x 7.0	192.0	267
Core insulation: blue/red				
0023983	2 X 2.5	9.9 x 4.8	48.0	94
0023985	2 X 4.0	10.7 x 5.2	76.8	128
0023987	2 X 6.0	11.9 x 5.8	115.2	174
0023989	2 X 10.0	14.3 x 7.0	192.0	267

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil 100 m; Drum (500; 1000) m
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SOLAR XLS-R refer to page 148

Accessories

- EPIC® SOLAR 4 Thin M pre-assembled refer to page 640
- Universal strip stripping and cutting tool refer to page 906
- KS 20 cable shears refer to page 904
- EPIC® SOLAR 4 THIN F pre-assembled refer to page 640

ÖLFLEX® SOLAR V4A

Extra robust solar cables with high-grade steel protection braiding



Info

- Protected against martens, rodents and termites

Benefits

- High-grade stainless steel wire braiding (class V4A) provides highly effective protection against martens, rodents and even termites
- Robust against mechanical impacts
- Reduction of flame propagation as well as of toxic combustion gases in the event of fire

Application range

- For use in PV systems that are installed on the roofs of stables or barns situated in farmsteads or densely-forested areas
- Gable and flat roof photovoltaic systems
- Photovoltaic plants and solar parks

Product features

- Weather, abrasion and UV-resistant
- Halogen-free and flame-retardant
- Good heat pressure resistance

Approvals



- Flame-retardant according to IEC 60332.1.2
- Halogen-free according to EN 50267-2-1/-2
- Weather/UV-resistant acc. to HD 605/A1

Design

- Conductor: fine-wire tinned-copper strands
- Core insulation: Cross-linked polymer
- Outer sheath: special polymer
- Outer sheath colour: black
- Armouring: high-grade stainless steel wire braiding (V4A)

Technical data

- Core identification code**
Black
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Fixed installation: 5 x outer diameter
- Nominal voltage**
AC U_0/U : 600/1000 V
DC U_0/U : 900/1500 V
Max. permissible operating voltage: DC 1,8 kV (Conductor-conductor, non earthed system)
- Test voltage**
AC 6500 V
- Temperature range**
Fixed installation:
-40 °C to +100 °C max. conductor temperature

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR V4A stainless steel				
0025960	4.0	7.0	38.4	98
0025961	6.0	8.0	57.6	158

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: Coil 100 m; Drum (500; 1000) m
 Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® TORSION

Power and control cables for flexible use under torsional load - 0.6/1 kV



Benefits

- Cost-effective alternative to the halogen-free, highly flame-retardant and enhanced oil-resistant ÖLFLEX® TORSION FRNC version with improved characteristics in the event of a fire
- The special design reliably compensates for the permanent torsional movements inside the wind turbine between the nacelle and the tower
- The high flexibility and good dismantling and stripping properties enable easy space-saving cable installation and fast processing

Application range

- For fixed and flexible installations, as well as for applications with torsional movements (e.g. machinery, wind turbines)
- Very suitable for installation in the loop, between the rotating nacelle and the stationary windmill tower, to connect the generator to the control units
- As a torsionally moved cable for use in North America with UL WTTC Listing (Wind Turbine Tray Cable), we recommend ÖLFLEX® FORTIS, which complies with the NFPA 79 standard and UL 2277 and UL 6140 outline

Product features

- Torsion-resistant up to ±150°/m
- Flame-retardant according to IEC 60332-1-2, VW-1, FT1
- Flexible at cold temperatures (IEC 60811/VDE 0473-811), 90 °C compounds according to UL
- Oil-resistant according to IEC 60227-1 PVC/ST9, salt-water immersion test according to UL 1309

- UV-resistant according to ISO 4892-2-2006, method A, and ozone-resistant according to EN 50396, method B

Approvals



- Use of leading, European metric stranded conductors according to the IEC scale for conductor nominal cross-sections in mm² according to IEC 60228/VDE 0295, braided conductor class 6 (tinned): For converting to AWG, odd-numbered nominal AWG cross-sections must be excluded. The next lowest nominal AWG conductor cross-section in mm² must then be allocated to the metric nominal conductor cross-section in mm² (according to IEC 60228) (please refer to the technical catalogue appendix T16). This is to ensure that the normative current rating defined by the nominal AWG conductor cross-section does not exceed the physical/real current rating defined by the nominal IEC conductor cross-section that is actually used

Design

- Extra-fine wire conductor made of bare copper
- Core insulation made of special PVC compound: flexible at cold temperatures according to IEC 60811-1-4/VDE 0473-811-1-4, 90 °C according to UL
- Use of talcum
- Core connection optimised for high torsion requirements, twisted in layers
- Special PVC-based outer sheath: flexible at cold temperatures according to IEC 60811-1-4/VDE 0473-811-1-4, 90 °C according to UL
- Outer sheath colour: black



Info

- Torsion-resistant, high mechanical flexibility, flexible at cold temperatures/90 °C(UL)
- Can be used in the cable loop underneath the nacelle
- Salt-water test, UV/ozone-resistant

Technical data



Core identification code

Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers



Approvals

UL AWM (UL 758): Style 10012 + Style 20886
cUL AWM I A/B, cUL AWM II A/B (both according to CSA C22.2 No.210-05)



Based on

HD 21.13/VDE 0281-13 and VDE 0250-1
UL AWM Styles 10012 and 20886 as well as CSA AWM C22.2 No. 210-05



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

Extra-fine wire acc. to VDE 0295, class 6/
IEC 60228 class 6



Minimum bending radius

Flexible use: 10 x outer diameter
Fixed installation: 6 x outer diameter



Nominal voltage

According to IEC/VDE: U0/U 0.6/1 kV ac
According to UL/CSA: 1000 V



Test voltage

C/C: 4000 V



Protective conductor

G = with GN-YE protective conductor
X = without protective conductor



Temperature range

Flexible use: -35°C to +90°C (acc. UL)
Fixed installation: -40 °C to +90 °C (according to UL)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® TORSION				
1150465	12 G 0.75	12.4	86.4	222.43
1150466	14 G 0.75	13.0	100.8	272.59
1150467	18 G 0.75	14.6	129.6	304.28
1150468	25 G 0.75	17.8	180.0	450.97
1150469	41 G 0.75	22.4	295.2	701
1150470	50 G 0.75	24.2	360.0	835.1
1150479	12 G 1.0	13.2	115.2	258.63
1150480	16 G 1.0	14.8	153.6	368.93
1150485	3 G 1.5	9.0	43.2	122.5
1150486	4 G 1.5	9.7	57.6	146.48
1150487	5 G 1.5	10.6	72.0	172.26
1150488	7 G 1.5	12.6	100.8	238.27
1150489	12 G 1.5	15.3	172.8	365.37
1150490	19 G 1.5	18.3	273.6	530
1150491	25 G 1.5	22.8	360.0	790.84
1150492	32 G 1.5	24.5	460.8	942.4
1150495	3 G 2.5	10.4	72.0	170.45
1150496	4 G 2.5	11.3	96.0	227.87
1150497	5 G 2.5	12.4	120.0	244.65
1150498	7 G 2.5	15.0	168.0	352.26
1150499	12 G 2.5	18.9	288.0	540
1150500	16 G 2.5	20.8	384.0	760
1150501	19 G 2.5	23.9	456.0	879.61
1150502	25 G 2.5	26.8	600.0	1126.58
1150505	3 G 4	11.9	115.2	240.57

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1150506	4 G 4	13.0	153.6	297.57
1150507	5 G 4	14.3	192.0	352.77
1150508	3 G 6	12.9	172.8	322.03
1150509	4 G 6	14.4	230.4	384.49
1150510	5 G 6	16.0	288.0	466.84
1150511	3 G 10	16.6	288.0	530.15
1150512	4 G 10	18.4	384.0	631.48
1150513	5 G 10	20.5	480.0	768.13
1150514	3 G 16	19.2	460.8	794
1150515	4 G 16	22.2	614.4	1017.78
1150516	5 G 16	24.4	768.0	1147.35
1150517	3 G 25	24.5	720.0	1133
1150518	3 X 25	24.5	720.0	1133
1150519	4 G 25	26.9	960.0	1471.23
1150520	5 G 25	29.9	1,200.0	1815.1
1150521	3 G 35	27.1	1,008.0	1521
1150522	3 X 35	27.1	1,008.0	1521
1150523	4 G 35	30.1	1,344.0	1952
1150524	5 G 35	33.7	1,680.0	2438.71
1150525	3 G 50	32.1	1,440.0	2235
1150526	3 X 50	32.1	1,440.0	2235
1150527	4 G 50	35.7	1,920.0	2866
1150528	5 G 50	39.5	2,400.0	3583.23
1150529	3 G 70	37.0	2,016.0	3150
1150530	3 X 70	37.0	2,016.0	3150
1150531	4 G 70	41.4	2,688.0	4112

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® TORSION FRNC refer to page 155
- ÖLFLEX® FORTIS refer to page 72

ÖLFLEX® TORSION FRNC

Cold and oil-resistant cables for flexible applications under torsional load, halogen-free - 0.6/1 kV



Info

- Torsion-resistant and very flexible
- Improved characteristics in the event of a fire
- Certified for the USA and Canada



ÖLFLEX® TORSION D FRNC

Screened, cold and oil-resistant cables for flexible applications under torsional load, halogen-free - 0.6/1 kV



Info

- Copper-screened version



Benefits

- The special design reliably compensates for the permanent torsional movements inside the wind turbine between the nacelle and the tower
- The high flexibility and good dismantling and stripping properties enable easy space-saving cable installation and fast processing
- Sea water-resistant for onshore and offshore applications
- FRNC = Flame Retardant Non Corrosive
 - Reduction of flame-propagation and density and toxicity of smoke gases in the event of fire
 - Minimisation of damage to buildings and production facilities
 - Safety for staff and in areas with high density of people
- The copper wrapping of the screened D version protects against electromagnetic interference

Application range

- For fixed and flexible installations, as well as for applications with torsional movements (e.g. machinery, wind turbines)
- Very suitable for installation in the loop, between the rotating nacelle and the stationary windmill tower, to connect the generator to the control units
- As a torsionally moved cable for use in North America with UL WTTC Listing (Wind Turbine Tray Cable), we recommend ÖLFLEX® FORTIS, which complies with the NFPA 79 standard and UL 2277 and UL 6140 outline

Product features

- Torsion-resistant up to $\pm 150^\circ/m$
- Good weather, abrasion, temperature and UV-resistance
- Resistant to oils
- Halogen-free and highly flame-retardant
- Depending on the quantity, customised designs are also possible upon request

Approvals



- UL AWM Style 21288 / cUL AWM II A/B
- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - Low smoke density (IEC 61034-2)
 - Flame-retardant (IEC 60332-1-2)
 - No fire propagation (IEC 60332-3-24 and IEC 60332-3-25)
- Oil-resistant according to EN 60811-2-1 and UL OIL RES I and UL OIL RES II
- UV-resistant according to ISO 4892-2 and ozone-resistant according to EN 50396
- Use of leading, European metric stranded conductors according to the IEC scale for conductor nominal cross-sections in mm² according to IEC 60228/VDE 0295, braided conductor class 6 (tinned): For converting to AWG, odd-numbered nominal AWG cross-sections must be excluded. The next lowest nominal AWG conductor cross-section in mm² must then be allocated to the metric nominal conductor cross-section in mm² (according to IEC 60228) (please refer to the technical catalogue appendix T 16). This is to ensure that the normative current rating defined by the nominal AWG conductor cross-section does not exceed the physical/real current rating defined by the nominal IEC conductor cross-section that is actually used

Design

- Extra-fine wire conductor made of bare copper
- Core insulation: polyolefin compound, LSZH
- Core connection optimised for high torsion requirements, twisted in layers
- Optional screening (D): wrapped with braided tinned-copper wires
- Outer sheath: special compound, halogen-free, black (RAL 9005)

Technical data

Core identification code
Power and control cables:
Colour-coded in accordance with VDE 0293-308,
refer to Appendix T9
From 6 cores: black with white numbers
Paired signal cables: DIN 47100

Approvals
UL AWM Style 21288
cUL AWM II A/B

Specific insulation resistance
> 20 GOhm x cm

Conductor stranding
Extra-fine wire acc. to VDE 0295, class 6/
IEC 60228 class 6
(Refer to Appendix T 16 for the matching US conductor sizes in AWG standard)

Minimum bending radius
Flexible use: 10 x outer diameter
Fixed installation: 6 x outer diameter

Nominal voltage
According to IEC/VDE: U0/U 0.6/1 kV ac
Operating voltage in accordance with UL: 1000V

Test voltage
ÖLFLEX® TORSION FRNC
C/C: 4000 V
ÖLFLEX® TORSION D FRNC
C/C: 4000 V
C/S: 2000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexible use: -40°C to +90°C (UL +80°C)
Fixed installation: -40°C to +90°C (UL +80°C)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® TORSION FRNC				
1150199	12 G 0.75	12.4	86.4	237
1150377	14 G 0.75	13.0	100.8	291
1150201	18 G 0.75	14.6	129.6	323
1150204	25 G 0.75	17.8	180.0	480
1150208	50 G 0.75	24.2	360.0	886
1150373	12 G 1.0	13.2	115.2	274
1150378	16 G 1.0	14.8	153.6	392
1150271	3 G 1.5	9.0	43.2	131
1150272	4 G 1.5	9.7	57.6	156
1150273	5 G 1.5	10.6	72.0	183
1150275	7 G 1.5	12.6	100.8	253
1150279	12 G 1.5	15.3	172.8	386

Special applications

Wind energy

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1150280	18 G 1.5	18.3	259.2	563
1150374	25 G 1.5	22.8	360.0	837
1150375	32 G 1.5	24.5	460.8	994
1150311	3 G 2.5	10.4	72.0	181
1150312	4 G 2.5	11.3	96.0	242
1150313	5 G 2.5	12.4	120.0	258
1150315	7 G 2.5	15.0	168.0	372
1150319	12 G 2.5	18.9	288.0	567
1150322	19 G 2.5	23.9	456.0	925
1150376	25 G 2.5	26.8	600.0	1183
1150350	3 G 4	11.9	115.2	254
1150351	4 G 4	13.0	153.6	313
1150352	5 G 4	14.3	192.0	370
1150355	3 G 6	12.9	173.0	338
1150356	4 G 6	14.4	230.4	401
1150357	5 G 6	16.0	288.0	486
1150360	3 G 10	16.6	288.0	556.1
1150361	4 G 10	18.4	384.0	658
1150362	5 G 10	20.5	480.0	799
1150366	4 G 16	22.2	614.4	1061
1150367	5 G 16	24.4	768.0	1188
1150371	4 G 25	26.9	960.0	1526
1150372	5 G 25	29.9	1,200.0	1881
1150369	5 G 35	33.7	1,680.0	2520
1150379	5 G 50	39.5	2,400.0	3710
ÖLFLEX® TORSION D FRNC - screened				
1150111	4 x 2 x 0.5	11.9	71.0	205
1150115	12 x 2 x 0.5	18.3	188.0	518
1150121	4 x 2 x 0.75	12.7	90.0	232
1150125	12 x 2 x 0.75	19.8	258.0	603
1150221	18 G 0.75	15.2	180.0	402
1150228	50 G 0.75	24.9	470.0	1079

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

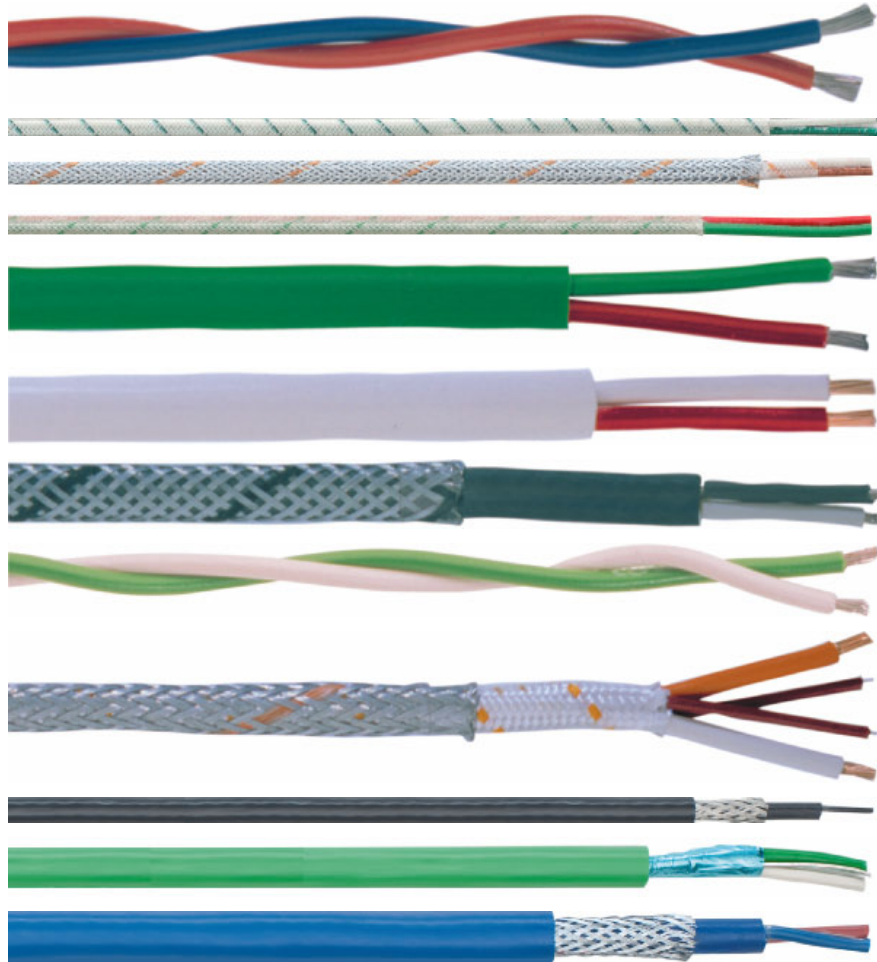
Extension- and compensating cables, paired

PVC, silicone or glass fibre-insulated



Info

- Available in many different designs



Technical data

- Based on**
Limiting deviation in accordance with DIN and IEC in accordance with class 2
- Conductor stranding**
1.5 mm²: approx. 48 x 0.20 mm
0.75 mm²: approx. 24 x 0.20 mm
0.5 mm²: approx. 16 x 0.20 mm
0.22 mm²: approx. 7 x 0.20 mm
- Minimum bending radius**
Without metal braiding:
12 x cable diameter
With metal braiding:
15 x cable diameter
- Temperature range**
(referring to insulation and sheath material)
PVC: -5°C to +70°C
Silicone: -25°C to +180°C
Glass fibre: -25°C to +200°C

Application range

- The thermocouple is used to measure temperature as a part of monitoring the manufacturing process, thus the sheath material should be selected with reference to the maximum ambient temperature at its junction.
- **Conductor materials (alloys):**
Fe/CuNi (LX, JX)
Conductor alloys are identical to thermocouple alloys
- **NiCr/Ni (KCA, KX)**
KCA version: compensating alloys, not identical to thermocouple alloys
KX version - conductor alloys are identical to thermocouple alloys
- **PtRh/Pt (RCB, SCB)**
Compensating alloys are not identical to thermocouple alloys

Approvals

- **Colour identity code**
DIN 43710
Negative conductor and outer sheath:
Fe/CuNi: blue
NiCr/Ni: green
PtRh/Pt: white
Positive conductor: always red
IEC 60 584
Positive conductor and outer sheath:
Fe/CuNi: black
NiCr/Ni: green
PtRh/Pt: orange
Negative conductor: always white

Design

- **Design abbreviations:**
PVC: Polyvinylchloride
SIL: Silicone rubber
GL: Glass fibre
C: Copper braiding screen
ST: Aluminium foil screen
S: Steel wire braiding

• **Design, for example PVC-PVC-S-PVC:**

- PVC core insulation
- PVC inner sheath
- Steel wire braiding
- PVC outer sheath

• **Examples shown (top to bottom):**

- Fe/CuNi DIN 2 x 1.5 PVC
- NiCr/Ni IEC 2 x 1.5 GL-GL
- PtRh/Pt IEC 2 x 1.5 GL-GL-S
- NiCr/Ni DIN 2 x 1.5 SIL-GL
- NiCr/Ni DIN 2 x 1.5 PVC-PVC
- PtRh/Pt DIN 2 x 1.5 SIL-SIL
- Fe/CuNi IEC 2 x 1.5 SIL-SIL-S
- NiCr/Ni IEC 2 x 1.5 SIL
- PtRh/Pt IEC 2 x 1.5 SIL-GL-S
- Fe/CuNi IEC 2 x 0.22 PVC-PVC-C-PVC
- NiCr/Ni IEC 2 x 1.5 PVC-ST-PVC
- Fe/CuNi DIN 2 x 1.5 PVC-PVC-S-PVC

Article number	Reference/article designation	Thermocouple	Design	Cable design	Number of cores and mm ² per conductor	Outer diameter (mm)	Outer dimensions, width x height (mm)	Weight (kg/km)
0.22 mm² extension and compensating cables								
0151051	KE 9-022 L	Fe/CuNi	DIN LX	PVC-PVC	2 x 0.22	4.0		22
0161051	KE 9-022 L	Fe/CuNi	IEC JX	PVC-PVC	2 x 0.22	4.0		22
0152051	KN 9-022 L	NiCr/Ni	DIN KCA	PVC-PVC	2 x 0.22	4.0		22
0162051	KN 9-022 L	NiCr/Ni	IEC KCA	PVC-PVC	2 x 0.22	4.0		22
0153051	KP 9-022 L	PtRh/Pt	DIN RCB, SCB	PVC-PVC	2 x 0.22	4.0		22
0163051	KP 9-022 L	PtRh/Pt	DIN RCB, SCB	PVC-PVC	2 x 0.22	4.0		22
0151052	KE 5-022 L-CY	Fe/CuNi	DIN LX	PVC-PVC-C-PVC	2 x 0.22	4.9		31
0161052	KE 5-022 L-CY	Fe/CuNi	IEC JX	PVC-PVC-C-PVC	2 x 0.22	4.9		31
0152052	KN 5-022 L-CY	NiCr/Ni	DIN KCA	PVC-PVC-C-PVC	2 x 0.22	4.9		31
0162052	KN 5-022 L-CY	NiCr/Ni	IEC KCA	PVC-PVC-C-PVC	2 x 0.22	4.9		31
0153052	KP 5-022 L-CY	PtRh/Pt	DIN RCB, SCB	PVC-PVC-C-PVC	2 x 0.22	4.9		31
0163052	KP 5-022 L-CY	PtRh/Pt	IEC RCB, SCB	PVC-PVC-C-PVC	2 x 0.22	4.9		31
0.5 mm² extension and compensating cables								
0151030	KE 91 L	Fe/CuNi	DIN LX	PVC-PVC	2 x 0.5	5.4		45
0161030	KE 91 L	Fe/CuNi	IEC JX	PVC-PVC	2 x 0.5	5.4		45

Special applications

Temperature measurement (extension and compensating cables)

Article number	Reference/article designation	Thermocouple	Design	Cable design	Number of cores and mm ² per conductor	Outer diameter (mm)	Outer dimensions, width x height (mm)	Weight (kg/km)
0152040	KN 91 L	NiCr/Ni	DIN KCA	PVC-PVC	2 x 0.5	5.4		45
0162040	KN 91 L	NiCr/Ni	IEC KCA	PVC-PVC	2 x 0.5	5.4		45
0151040	KE 41 L-SIL	Fe/CuNi	DIN LX	SIL-SIL-S oval	2 x 0.5		6.4 x 4.4	51
0161040	KE 41 L-SIL	Fe/CuNi	IEC JX	SIL-SIL-S oval	2 x 0.5		6.4 x 4.4	51
0152030	KN 41 L-SIL	NiCr/Ni	DIN KCA	SIL-SIL-S oval	2 x 0.5		6.4 x 4.4	51
0162030	KN 41 L-SIL	NiCr/Ni	IEC KCA	SIL-SIL-S oval	2 x 0.5		6.4 x 4.4	51
0.75 mm² extension and compensating cables								
0151035	KE 92 L	Fe/CuNi	DIN LX	PVC-PVC	2 x 0.75	6.0		56
0161035	KE 92 L	Fe/CuNi	IEC JX	PVC-PVC	2 x 0.75	6.0		56
0152045	KN 92 L	NiCr/Ni	DIN KCA	PVC-PVC	2 x 0.75	6.0		56
0162045	KN 92 L	NiCr/Ni	IEC KCA	PVC-PVC	2 x 0.75	6.0		56
0151050	KE 42 L-SIL	Fe/CuNi	DIN LX	SIL-SIL-S oval	2 x 0.75		6.4 x 4.4	58
0161050	KE 42 L-SIL	Fe/CuNi	IEC JX	SIL-SIL-S oval	2 x 0.75		6.4 x 4.4	58
0152035	KN 42 L-SIL	NiCr/Ni	DIN KCA	SIL-SIL-S oval	2 x 0.75		6.4 x 4.4	58
0162035	KN 42 L-SIL	NiCr/Ni	IEC KCA	SIL-SIL-S oval	2 x 0.75		6.4 x 4.4	58
PVC-insulated versions 1.5 mm²								
0151001	KE 1 L	Fe/CuNi	DIN LX	PVC	2 x 1.5	5.4		40
0161001	KE 1 L	Fe/CuNi	IEC JX	PVC	2 x 1.5	5.4		40
0152001	KN 1 L	NiCr/Ni	DIN KCA	PVC	2 x 1.5	5.4		40
0162001	KN 1 L	NiCr/Ni	IEC KCA	PVC	2 x 1.5	5.4		40
0151010	KE 9 L	Fe/CuNi	DIN LX	PVC-PVC round	2 x 1.5	7.1		79
0161010	KE 9 L	Fe/CuNi	IEC JX	PVC-PVC round	2 x 1.5	7.1		79
0152010	KN 9 L	NiCr/Ni	DIN KCA	PVC-PVC round	2 x 1.5	7.1		79
0162010	KN 9 L	NiCr/Ni	IEC KCA	PVC-PVC round	2 x 1.5	7.1		79
0154010	KXN 9 L	NiCr/Ni	DIN KX	PVC-PVC round	2 x 1.5	7.1		79
0164010	KXN 9 L	NiCr/Ni	IEC KX	PVC-PVC round	2 x 1.5	7.1		79
0153010	KP 9 L	PtRh/Pt	DIN RCB, SCB	PVC-PVC round	2 x 1.5	7.1		79
0163010	KP 9 L	PtRh/Pt	IEC RCB, SCB	PVC-PVC round	2 x 1.5	7.1		79
0151017	KE 12 L	Fe/CuNi	DIN LX	PVC-PVC oval	2 x 1.5		7.2 x 4.4	69
0161017	KE 12 L	Fe/CuNi	IEC JX	PVC-PVC oval	2 x 1.5		7.2 x 4.4	69
0152017	KN 12 L	NiCr/Ni	DIN KCA	PVC-PVC oval	2 x 1.5		7.2 x 4.4	69
0162017	KN 12 L	NiCr/Ni	IEC KCA	PVC-PVC oval	2 x 1.5		7.2 x 4.4	69
0154011	KE 20 L	Fe/CuNi	DIN LX	PVC-ST-PVC	2 x 1.5	7.6		85
0164011	KE 20 L	Fe/CuNi	IEC JX	PVC-ST-PVC	2 x 1.5	7.6		85
0154012	KN 20 L	NiCr/Ni	DIN KCA	PVC-ST-PVC	2 x 1.5	7.6		85
0164012	KN 20 L	NiCr/Ni	IEC KCA	PVC-ST-PVC	2 x 1.5	7.6		85
0154013	KXN 20 L	NiCr/Ni	DIN KX	PVC-ST-PVC	2 x 1.5	7.6		85
0164013	KXN 20 L	NiCr/Ni	IEC KX	PVC-ST-PVC	2 x 1.5	7.6		85
0154014	KP 20 L	PtRh/Pt	DIN RCB, SCB	PVC-ST-PVC	2 x 1.5	7.6		85
0164014	KP 20 L	PtRh/Pt	IEC RCB, SCB	PVC-ST-PVC	2 x 1.5	7.6		85
0151011	KE 9 L-S	Fe/CuNi	DIN LX	PVC-PVC-S	2 x 1.5	8.0		140
0161011	KE 9 L-S	Fe/CuNi	IEC JX	PVC-PVC-S	2 x 1.5	8.0		140
0152011	KN 9 L-S	NiCr/Ni	DIN KCA	PVC-PVC-S	2 x 1.5	8.0		140
0162011	KN 9 L-S	NiCr/Ni	IEC KCA	PVC-PVC-S	2 x 1.5	8.0		140
0157514	KE 9 L-SY	Fe/CuNi	DIN LX	PVC-PVC-S-PVC	2 x 1.5	10.3		160
0167514	KE 9 L-SY	Fe/CuNi	IEC JX	PVC-PVC-S-PVC	2 x 1.5	10.3		160
0157513	KN 9 L-SY	NiCr/Ni	DIN KCA	PVC-PVC-S-PVC	2 x 1.5	10.3		160
0167513	KN 9 L-SY	NiCr/Ni	IEC KCA	PVC-PVC-S-PVC	2 x 1.5	10.3		160
0157515	KP 9 L-SY	PtRh/Pt	DIN RCB, SCB	PVC-PVC-S-PVC	2 x 1.5	10.3		160
0167515	KP 9 L-SY	PtRh/Pt	IEC RCB, SCB	PVC-PVC-S-PVC	2 x 1.5	10.3		160
Silicone-insulated versions 1.5 mm²								
0151003	KE 1 L-SIL	Fe/CuNi	DIN LX	SIL	2 x 1.5	5.4		40
0161003	KE 1 L-SIL	Fe/CuNi	IEC JX	SIL	2 x 1.5	5.4		40
0152003	KN 1 L-SIL	NiCr/Ni	DIN KCA	SIL	2 x 1.5	5.4		40
0162003	KN 1 L-SIL	NiCr/Ni	IEC KCA	SIL	2 x 1.5	5.4		40
0151022	KE 15 L-SIL	Fe/CuNi	DIN LX	SIL-SIL round	2 x 1.5	7.0		76
0161022	KE 15 L-SIL	Fe/CuNi	IEC JX	SIL-SIL round	2 x 1.5	7.0		76
0152022	KN 15 L-SIL	NiCr/Ni	DIN KCA	SIL-SIL round	2 x 1.5	7.0		76
0162022	KN 15 L-SIL	NiCr/Ni	IEC KCA	SIL-SIL round	2 x 1.5	7.0		76
0153022	KP 15 L-SIL	PtRh/Pt	DIN RCB, SCB	SIL-SIL round	2 x 1.5	7.0		76
0163022	KP 15 L-SIL	PtRh/Pt	IEC RCB, SCB	SIL-SIL round	2 x 1.5	7.0		76
0151023	KE 15 L-SIL-S	Fe/CuNi	DIN LX	SIL-SIL-S round	2 x 1.5	7.8		105
0161023	KE 15 L-SIL-S	Fe/CuNi	IEC JX	SIL-SIL-S round	2 x 1.5	7.8		105
0152023	KN 15 L-SIL-S	NiCr/Ni	DIN KCA	SIL-SIL-S round	2 x 1.5	7.8		105
0162023	KN 15 L-SIL-S	NiCr/Ni	IEC KCA	SIL-SIL-S round	2 x 1.5	7.8		105
0153023	KP 15 L-SIL-S	PtRh/Pt	DIN RCB, SCB	SIL-SIL-S round	2 x 1.5	7.8		105
0163023	KP 15 L-SIL-S	PtRh/Pt	IEC RCB, SCB	SIL-SIL-S round	2 x 1.5	7.8		105
0151007	KE 4 L-SIL-S	Fe/CuNi	DIN LX	SIL-SIL-S oval	2 x 1.5		8.0 x 5.2	85
0161007	KE 4 L-SIL-S	Fe/CuNi	IEC JX	SIL-SIL-S oval	2 x 1.5		8.0 x 5.2	85
0152007	KN 4 L-SIL-S	NiCr/Ni	DIN KCA	SIL-SIL-S oval	2 x 1.5		8.0 x 5.2	85
0162007	KN 4 L-SIL-S	NiCr/Ni	IEC KCA	SIL-SIL-S oval	2 x 1.5		8.0 x 5.2	85
0153007	KP 4 L-SIL-S	PtRh/Pt	DIN RCB, SCB	SIL-SIL-S oval	2 x 1.5		8.0 x 5.2	85
0163007	KP 4 L-SIL-S	PtRh/Pt	IEC RCB, SCB	SIL-SIL-S oval	2 x 1.5		8.0 x 5.2	85
0151019	KE 13 L-SIL	Fe/CuNi	DIN LX	SIL-GL oval	2 x 1.5		6.0 x 3.3	50
0161019	KE 13 L-SIL	Fe/CuNi	IEC JX	SIL-GL oval	2 x 1.5		6.0 x 3.3	50
0152019	KN 13 L-SIL	NiCr/Ni	DIN KCA	SIL-GL oval	2 x 1.5		6.0 x 3.3	50
0162019	KN 13 L-SIL	NiCr/Ni	IEC KCA	SIL-GL oval	2 x 1.5		6.0 x 3.3	50
0153019	KP 13 L-SIL	PtRh/Pt	DIN RCB, SCB	SIL-GL oval	2 x 1.5		6.0 x 3.3	50
0163019	KP 13 L-SIL	PtRh/Pt	IEC RCB, SCB	SIL-GL oval	2 x 1.5		6.0 x 3.3	50
0151015	KE 11 L-SIL-S	Fe/CuNi	DIN LX	SIL-GL-S	2 x 1.5	6.7		82
0161015	KE 11 L-SIL-S	Fe/CuNi	IEC JX	SIL-GL-S	2 x 1.5	6.7		82
0152015	KN 11 L-SIL-S	NiCr/Ni	DIN KCA	SIL-GL-S	2 x 1.5	6.7		82
0162015	KN 11 L-SIL-S	NiCr/Ni	IEC KCA	SIL-GL-S	2 x 1.5	6.7		82
0153015	KP 11 L-SIL-S	PtRh/Pt	DIN RCB, SCB	SIL-GL-S	2 x 1.5	6.7		82
0163015	KP 11 L-SIL-S	PtRh/Pt	IEC RCB, SCB	SIL-GL-S	2 x 1.5	6.7		82
Glass fibre-insulated versions 1.5 mm²								
0151005	KE 3 L	Fe/CuNi	DIN LX	GL-GL oval	2 x 1.5		5.1 x 2.7	64
0161005	KE 3 L	Fe/CuNi	IEC JX	GL-GL oval	2 x 1.5		5.1 x 2.7	64
0152005	KN 3 L	NiCr/Ni	DIN KCA	GL-GL oval	2 x 1.5		5.1 x 2.7	64
0162005	KN 3 L	NiCr/Ni	IEC KCA	GL-GL oval	2 x 1.5		5.1 x 2.7	64
0153005	KP 3 L	PtRh/Pt	DIN RCB, SCB	GL-GL oval	2 x 1.5		5.1 x 2.7	64
0163005	KP 3 L	PtRh/Pt	IEC RCB, SCB	GL-GL oval	2 x 1.5		5.1 x 2.7	64
0151006	KE 4 L-S	Fe/CuNi	DIN LX	GL-GL-S oval	2 x 1.5		5.9 x 3.7	87
0161006	KE 4 L-S	Fe/CuNi	IEC JX	GL-GL-S oval	2 x 1.5		5.9 x 3.7	87
0152006	KN 4 L-S	NiCr/Ni	DIN KCA	GL-GL-S oval	2 x 1.5		5.9 x 3.7	87
0162006	KN 4 L-S	NiCr/Ni	IEC KCA	GL-GL-S oval	2 x 1.5		5.9 x 3.7	87
0153006	KP 4 L-S	PtRh/Pt	DIN RCB, SCB	GL-GL-S oval	2 x 1.5		5.9 x 3.7	87
0163006	KP 4 L-S	PtRh/Pt	IEC RCB, SCB	GL-GL-S oval	2 x 1.5		5.9 x 3.7	87

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

Extension- and compensating cables, multi-paired PVC insulated - with and without steel wire armouring or foil screen



Info

- **Version SY** - Armoured against mechanical loads
- **Version ST** - Screened against electromagnetic interference



Approvals



Design

- **Version Y:**
 - Fine-wire conductor alloy
 - PVC core insulation
 - Cores twisted into layers
 - PVC outer sheath
- **Version SY:**
 - Design as version Y
 - Additional galvanised steel wire braiding
 - PVC outer sheath
- **Version ST:**
 - Design as version Y
 - Cores twisted in pairs, pairs twisted in layers
 - Aluminium foil screening + drain wire
 - PVC outer sheath

- **Design, for example PVC-PVC-S-PVC:**
 - PVC core insulation
 - PVC inner sheath
 - Steel wire braiding
 - PVC outer sheath
- **Design, for example PVC-ST-PVC:**
 - PVC core insulation
 - Static foil screen
 - PVC outer sheath
- **Colour identity code**
DIN 43710
 Negative conductor and outer sheath:
 Fe/CuNi: blue
 NiCr/Ni: green
 PtRh/Pt: white
 Positive conductor: always red
IEC 60 584
 Positive conductor and outer sheath:
 Fe/CuNi: black
 NiCr/Ni: green
 PtRh/Pt: orange
 Negative conductor: always white
- **Extension-conductor** alloys are identified with **X**, e.g. JX (Fe/CuNi)
Compensating-conductor alloys are identified with **C**, e.g. KCA (NiCr/Ni)

Technical data

- Core identification code**
From 4 cores in pairs with consecutively marked numbers (1-1, 2-2, 3-3, 4-4...)
- Based on**
Limiting deviation in accordance with DIN and IEC in accordance with class 2
- Conductor stranding**
48 x 0.20 mm
- Minimum bending radius**
For flexible use:
12.5 x outer diameter
Type SY with steel braid:
15 x outer diameter
Type ST with foil screen:
15 x outer diameter
- Temperature range**
(referring to insulation and sheath material)
Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Thermocouple	Design	Cable design	Number of cores and mm ² per conductor	Outer diameter (mm)	Weight (kg/km)
Type Y without steel wire braiding						
0155001	Fe/CuNi	DIN-LX	PVC-PVC	4 x 1.5	8.2	469
0165001	Fe/CuNi	IEC-JX	PVC-PVC	4 x 1.5	8.2	130
0156001	NiCr/Ni	DIN-KCA	PVC-PVC	4 x 1.5	8.2	257
0166001	NiCr/Ni	IEC-KCA	PVC-PVC	4 x 1.5	8.2	130
0157001	PtRh/Pt	DIN-RCB/SCB	PVC-PVC	4 x 1.5	8.2	130
0167001	PtRh/Pt	IEC-RCB/SCB	PVC-PVC	4 x 1.5	8.2	130
0155002	Fe/CuNi	DIN-LX	PVC-PVC	6 x 1.5	10.2	847
0165002	Fe/CuNi	IEC-JX	PVC-PVC	6 x 1.5	10.2	200
0156002	NiCr/Ni	DIN-KCA	PVC-PVC	6 x 1.5	10.2	469
0166002	NiCr/Ni	IEC-KCA	PVC-PVC	6 x 1.5	10.2	200
0157002	PtRh/Pt	DIN-RCB/SCB	PVC-PVC	6 x 1.5	10.2	200
0167002	PtRh/Pt	IEC-RCB/SCB	PVC-PVC	6 x 1.5	10.2	200
0155003	Fe/CuNi	DIN-LX	PVC-PVC	8 x 1.5	11.2	145
0165003	Fe/CuNi	IEC-JX	PVC-PVC	8 x 1.5	11.2	238
0156003	NiCr/Ni	DIN-KCA	PVC-PVC	8 x 1.5	11.2	238
0166003	NiCr/Ni	IEC-KCA	PVC-PVC	8 x 1.5	11.2	238
0155005	Fe/CuNi	DIN-LX	PVC-PVC	12 x 1.5	13.3	573
0165005	Fe/CuNi	IEC-JX	PVC-PVC	12 x 1.5	13.3	335
0155007	Fe/CuNi	DIN-LX	PVC-PVC	16 x 1.5	15.0	145
0165007	Fe/CuNi	IEC-JX	PVC-PVC	16 x 1.5	15.0	447
0156007	NiCr/Ni	DIN-KCA	PVC-PVC	16 x 1.5	15.0	573
0166007	NiCr/Ni	IEC-KCA	PVC-PVC	16 x 1.5	15.0	447
0155010	Fe/CuNi	DIN-LX	PVC-PVC	24 x 1.5	19.0	257
0165010	Fe/CuNi	IEC-JX	PVC-PVC	24 x 1.5	19.0	555
0156010	NiCr/Ni	DIN-KCA	PVC-PVC	24 x 1.5	19.0	145
0166010	NiCr/Ni	IEC-KCA	PVC-PVC	24 x 1.5	19.0	555
Type SY with steel wire braiding						
0155501	Fe/CuNi	DIN-LX	PVC-PVC-S-PVC	4 x 1.5	11.4	145
0165501	Fe/CuNi	IEC-JX	PVC-PVC-S-PVC	4 x 1.5	11.4	240
0156501	NiCr/Ni	DIN-KCA	PVC-PVC-S-PVC	4 x 1.5	11.4	240
0166501	NiCr/Ni	IEC-KCA	PVC-PVC-S-PVC	4 x 1.5	11.4	240
0157501	PtRh/Pt	DIN-RCB/SCB	PVC-PVC-S-PVC	4 x 1.5	11.4	240
0167501	PtRh/Pt	IEC-RCB/SCB	PVC-PVC-S-PVC	4 x 1.5	11.4	240
0155502	Fe/CuNi	DIN-LX	PVC-PVC-S-PVC	6 x 1.5	13.0	257
0165502	Fe/CuNi	IEC-JX	PVC-PVC-S-PVC	6 x 1.5	13.0	355
0156502	NiCr/Ni	DIN-KCA	PVC-PVC-S-PVC	6 x 1.5	13.0	355
0166502	NiCr/Ni	IEC-KCA	PVC-PVC-S-PVC	6 x 1.5	13.0	355
0157502	PtRh/Pt	DIN-RCB/SCB	PVC-PVC-S-PVC	6 x 1.5	13.0	355
0167502	PtRh/Pt	IEC-RCB/SCB	PVC-PVC-S-PVC	6 x 1.5	13.0	355
0155503	Fe/CuNi	DIN-LX	PVC-PVC-S-PVC	8 x 1.5	13.8	469

Special applications

Temperature measurement (extension and compensating cables)

Article number	Thermocouple	Design	Cable design	Number of cores and mm ² per conductor	Outer diameter (mm)	Weight (kg/km)
0165503	Fe/CuNi	IEC-JX	PVC-PVC-S-PVC	8 x 1.5	13.8	410
0156503	NiCr/Ni	DIN-KCA	PVC-PVC-S-PVC	8 x 1.5	13.8	410
0166503	NiCr/Ni	IEC-KCA	PVC-PVC-S-PVC	8 x 1.5	13.8	410
0155505	Fe/CuNi	DIN-LX	PVC-PVC-S-PVC	12 x 1.5	17.9	257
0165505	Fe/CuNi	IEC-JX	PVC-PVC-S-PVC	12 x 1.5	17.9	550
0156505	NiCr/Ni	DIN-KCA	PVC-PVC-S-PVC	12 x 1.5	17.9	550
0166505	NiCr/Ni	IEC-KCA	PVC-PVC-S-PVC	12 x 1.5	17.9	550
0155507	Fe/CuNi	DIN-LX	PVC-PVC-S-PVC	16 x 1.5	19.4	469
0165507	Fe/CuNi	IEC-JX	PVC-PVC-S-PVC	16 x 1.5	19.4	730
0155510	Fe/CuNi	DIN-LX	PVC-PVC-S-PVC	24 x 1.5	23.8	573
0165510	Fe/CuNi	IEC-JX	PVC-PVC-S-PVC	24 x 1.5	23.8	847
Type ST with static overall screening						
0158500	Fe/CuNi	DIN-LX	PVC-ST-PVC	2 x 2 x 1.5	11.4	145
0168500	Fe/CuNi	IEC-JX	PVC-ST-PVC	2 x 2 x 1.5	11.4	145
0158501	NiCr/Ni	DIN-KCA	PVC-ST-PVC	2 x 2 x 1.5	11.4	145
0168501	NiCr/Ni	IEC-KCA	PVC-ST-PVC	2 x 2 x 1.5	11.4	145
0158503	Fe/CuNi	DIN-LX	PVC-ST-PVC	4 x 2 x 1.5	13.7	257
0168503	Fe/CuNi	IEC-JX	PVC-ST-PVC	4 x 2 x 1.5	13.7	257
0158504	NiCr/Ni	DIN-KCA	PVC-ST-PVC	4 x 2 x 1.5	13.7	257
0168504	NiCr/Ni	IEC-KCA	PVC-ST-PVC	4 x 2 x 1.5	13.7	257
0158506	Fe/CuNi	DIN-LX	PVC-ST-PVC	8 x 2 x 1.5	18.3	469
0168506	Fe/CuNi	IEC-JX	PVC-ST-PVC	8 x 2 x 1.5	18.3	469
0158507	NiCr/Ni	DIN-KCA	PVC-ST-PVC	8 x 2 x 1.5	18.3	469
0168507	NiCr/Ni	IEC-KCA	PVC-ST-PVC	8 x 2 x 1.5	18.3	469
0158509	Fe/CuNi	DIN-LX	PVC-ST-PVC	12 x 2 x 1.5	22.2	573
0168509	Fe/CuNi	IEC-JX	PVC-ST-PVC	12 x 2 x 1.5	22.2	573
0158510	NiCr/Ni	DIN-KCA	PVC-ST-PVC	12 x 2 x 1.5	22.2	573
0168510	NiCr/Ni	IEC-KCA	PVC-ST-PVC	12 x 2 x 1.5	22.2	573

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

SILVYN®

FLEXIMARK®

ACCESSORIES

APPENDIX

ÖLFLEX® CRANE NSHTÖU

Reelable cables for low and medium mechanical stress



Info

- Robust and efficient
- Suitable for outdoor use
- Integrated sheath supporting braid



Benefits

- Can be used as hawser, drum and towing cable as well as for energy supply chains
- Integrated supporting braid prevents undesirable cable twists, and the formation of so-called corkscrew effects

Application range

- For use in hoists, transport and conveyor systems
- Reeling/unreeling during operation without fixing
- In dry or damp interiors, outdoors, or in industrial water
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX(R) LIFT cables can be found in the appendix, selection table A3
- The assembly and handling guidelines for ÖLFLEX® CRANE cables can be found in the catalogue appendix, technical table T4; for ÖLFLEX(R) LIFT cables please see the catalogue appendix, technical table T5

Product features

- Flame-retardant according to IEC 60332.1.2
- Oil-resistant according to EN 60811-2-1
- Good chemical, thermal and mechanical-resistance
- For connecting mobile equipment in hazardous areas acc. to DIN VDE 0165

Approvals



Design

- Strands of tinned-copper wires
- Core insulation: rubber compound type 3GI3
- Support braid integrated in the outer sheath
- Outer sheath: rubber compound, type 5GM3

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Approvals**
VDE 0250 Part 814 NSHTÖU
- Specific insulation resistance**
> 10 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
Flexible use for reeling applications:
Cables with outer diameter < 21.5 mm
5 x outer diameter
Cables with outer diameter > 21.5 mm
6.25 x outer diameter
Flexible use with deflection pulleys:
7.5 x outer diameter
- Nominal voltage**
U₀/U: 600/1000 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Current rating**
VDE 0298 Part 4
- Temperature range**
Max. cond. temperature: +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE NSHTÖU				
0043006	3 G 1.5	12.2	43.2	190
00430053	4 G 1.5	14.8	57.6	220
00430073	5 G 1.5	15.7	72.0	260
0043008	7 G 1.5	18.2	100.8	380
0043009	12 G 1.5	23.9	172.8	720
0043010	18 G 1.5	23.9	259.2	770
0043011	24 G 1.5	27.1	345.6	1000
0043012	30 G 1.5	30.2	432.0	1320
0043013	3 G 2.5	13.5	72.0	250
00430303	4 G 2.5	16.9	96.0	330
00430143	5 G 2.5	18.0	120.0	390
0043015	7 G 2.5	20.6	168.0	510
0043016	12 G 2.5	27.4	288.0	970
0043017	18 G 2.5	27.4	432.0	1100

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0043018	24 G 2.5	31.6	576.0	1450
0043019	30 G 2.5	36.3	720.0	1950
00430203	4 G 4	18.4	153.6	440
00430333	5 G 4	19.6	192.0	520
00430213	4 G 6	19.8	230.4	530
00430343	5 G 6	21.7	288.0	690
00430223	4 G 10	23.4	384.0	830
00430003	5 G 10	25.2	480.0	1000
00430233	4 G 16	25.5	614.4	1170
00430323	5 G 16	27.5	768.0	1400
00430243	4 G 25	32.6	960.0	1830
00430253	4 G 35	34.8	1,344.0	2280
00430263	4 G 50	40.6	1,920.0	3220
00430283	4 G 70	44.8	2,688.0	4200
00430293	4 G 95	51.2	3,648.0	5530

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CRANE VS (N)SHTÖU refer to page 162
- ÖLFLEX® CRANE PUR refer to page 163

Accessories

- STAR STRIP stripping tool refer to page 906
- Cable shears KT 4 and KT 5 refer to page 904

ÖLFLEX® CRANE VS (N)SHTÖU

Reelable cables for medium to high mechanical stress



Info

- Reinforced outer sheath design
- Central and tear-resistant supporting element
- Suitable for extreme tensile stress

Benefits

- The central supporting element absorbs the tensile loads that occur, thereby allowing reeling, unreeling and deflection for free-hanging cables even over large distances.
- Reeling, unreeling and guiding operations also impose tensile stresses on the cables
- Integrated supporting braid prevents undesirable cable twists, and the formation of so-called corkscrew effects

Application range

- For use in hoists, transport and conveyor systems
- Cables are reeled, unreeling, and guided by roller trains
- In dry or damp interiors, outdoors, or in industrial water
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX(R) LIFT cables can be found in the appendix, selection table A3
- The assembly and handling guidelines for ÖLFLEX® CRANE cables can be found in the catalogue appendix, technical table T4; for ÖLFLEX(R) LIFT cables please see the catalogue appendix, technical table T5

Product features

- Flame-retardant according to IEC 60332.1.2
- Oil-resistant according to EN 60811-2-1
- Good chemical, thermal and mechanical-resistance
- For connecting mobile equipment in hazardous areas acc. to DIN VDE 0165

Approvals



Design

- Strands of tinned-copper wires
- Core insulation: rubber compound type 3GI3
- Central supporting element
- Support braid integrated in the outer sheath
- Outer sheath: rubber compound, type 5GM5

Technical data

Core identification code
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers

Specific insulation resistance
> 10 GOhm x cm

Conductor stranding
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5

Minimum bending radius
Flexible use: 7.5 x outer diameter

Nominal voltage
U₀/U: 600/1000 V

Test voltage
3000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Current rating
VDE 298 Part 4

Temperature range
Flexible use: -25°C to +60°C
Max. cond. temperature: +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Tensile strength (N)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE VS (N)SHTÖU					
0044008	7 G 1.5	18.8	2,000	100.8	430
0044009	12 G 1.5	25.3	2,000	172.8	820
0044010	18 G 1.5	25.3	2,000	259.2	930
0044011	24 G 1.5	30.1	2,000	345.6	1260
0044036	36 G 1.5	34.0	2,000	518.4	1650
0044015	7 G 2.5	21.6	2,000	168.0	630
0044016	12 G 2.5	29.4	2,000	288.0	1150
00440333	5 G 4	19.6	2,000	192.0	510
00440223	4 G 10	23.4	2,000	384.0	830
00440233	4 G 16	25.5	2,000	614.4	1170
00440323	5 G 16	27.5	2,400	768.0	1400
00440243	4 G 25	32.6	3,000	960.0	1850
00440253	4 G 35	34.8	4,000	1,344.0	2250
00440263	4 G 50	40.6	6,000	1,920.0	3200
00440283	4 G 70	44.8	8,000	2,688.0	4200
00440293	4 G 95	51.2	11,000	3,648.0	5550

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CRANE NSHTÖU refer to page 161
- ÖLFLEX® CRANE PUR refer to page 163

Accessories

- EASY STRIP 2 stripping and cutting tool refer to page 905
- V 1311 pressing pliers, hydraulic refer to page 930
- STAR STRIP stripping tool refer to page 906
- Cable shears KT 4 and KT 5 refer to page 904

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® CRANE PUR

Reelable polyurethane cables for low, medium and high mechanical stress



Info

- For various applications
- Lightweight due to minimised diameters
- Halogen-free

Benefits

- Designed with a smaller outer diameter to save space and weight
- Cost-saving due to the use of smaller drums, guide rollers, as well as drive engines when possible
- Reeling, unreeling and guiding operations also impose tensile stresses on the cables
- The central supporting element absorbs the tensile loads that occur, thereby allowing reeling, unreeling and deflection for free-hanging cables even over large distances.
- Integrated supporting braid prevents undesirable cable twists, and the formation of so-called corkscrew effects

Application range

- For use in hoists, transport and conveyor systems
- Cables are reeled, unreeling, and guided by roller trains
- In dry or damp interiors, outdoors, or in industrial water
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX(R) LIFT cables can be found in the appendix, selection table A3
- The assembly and handling guidelines for ÖLFLEX® CRANE cables can be found in the catalogue appendix, technical table T4; for ÖLFLEX(R) LIFT cables please see the catalogue appendix, technical table T5

Product features

- Halogen-free and flame-retardant (IEC 60332.1.2)
- Oil-resistant according to EN 60811-2-1
- Good chemical, thermal and mechanical-resistance
- For connecting mobile equipment in hazardous areas acc. to DIN VDE 0165

Approvals



Design

- Strands of bare copper wires
- Core insulation: TPE compound
- Central supporting element
- Support braid integrated in the outer sheath
- Outer sheath: PUR compound, halogen-free

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Specific insulation resistance**
> 10 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
Flexible use: 7.5 x outer diameter
- Nominal voltage**
U₀/U: 600/1000 V
- Test voltage**
3500 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Current rating**
VDE 298 Part 4
- Temperature range**
Flexible use: -40°C
Max. cond. temperature: +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Tensile strength (N)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE PUR					
0045207	4 G 1.5	10.9	500	57.6	169
0045209	5 G 1.5	11.6	1,000	72.0	197
0045210	7 G 1.5	12.9	2,500	100.8	239
0045211	12 G 1.5	17.6	2,500	172.8	401
0045212	18 G 1.5	17.5	2,500	259.2	507
0045213	24 G 1.5	20.7	2,500	345.6	673
0045215	30 G 1.5	32.5	3,000	432.0	1530
0045214	36 G 1.5	31.4	3,000	518.4	1011
0045216	4 G 2.5	12.2	500	96.0	227
0045218	5 G 2.5	13.2	2,000	120.0	274
0045220	7 G 2.5	15.4	3,000	168.0	358
0045221	12 G 2.5	21.6	3,000	288.0	619
0045222	18 G 2.5	21.5	3,000	432.0	793
0045223	24 G 2.5	25.5	3,000	576.0	1123
0045224	30 G 2.5	34.7	3,000	720.0	1641
0045225	4 G 4	14.3	1,000	153.6	341
0045227	5 G 4	15.5	2,000	192.0	411
0045228	4 G 6	16.6	1,500	230.4	457
0045229	5 G 6	17.7	2,000	288.0	538
0045230	4 G 10	19.2	2,000	384.0	674
0045237	5 G 10	21.6	2,500	480.0	825
0045231	4 G 16	22.2	2,500	614.4	966
0045238	5 G 16	25.6	3,500	768.0	1222
0045232	4 G 25	27.6	3,500	960.0	1506
0045233	4 G 35	31.0	4,500	1,344.0	2004
0045234	4 G 50	36.1	6,000	1,920.0	2838
0045240	3x25+3G6	25.7	2,000	892.8	1380
0045241	3x35+3G6	27.6	2,500	1,180.8	1695
0045242	3x50+3G10	32.1	3,500	1,728.0	2307
0045235				403.2	

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CRANE NSHTÖU refer to page 161
- ÖLFLEX® CRANE VS (N)SHTÖU refer to page 162

Accessories

- EASY STRIP 2 stripping and cutting tool refer to page 905
- Cable shears KT 4 and KT 5 refer to page 904

ÖLFLEX® CRANE

Highly flexible and weather-proof rubber cables with support element



Info

- Suitable for outdoor use
- Integrated supporting element
- Also suitable for power chains and cable trolley systems

Benefits

- Weather-resistant for harsh environmental conditions
- Very flexible due to extra-fine wire conductor design
- Cables up to a max. 24 cores can also be used in power chains

Application range

- Machinery and equipment that are permanently exposed to the weather; conveying and hoisting equipment; construction machinery; shipyard machinery
- Suitable for use in special conditions such as industrial or sea water
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX(R) LIFT cables can be found in the appendix, selection table A3
- The assembly and handling guidelines for ÖLFLEX® CRANE cables can be found in the catalogue appendix, technical table T4; for ÖLFLEX(R) LIFT cables please see the catalogue appendix, technical table T5
- For highly flexible applications, please follow the assembly guidelines for ÖLFLEX® FD cables in power chains; see appendix T3

Product features

- Flame-retardant according to IEC 60332.1.2
- Not suitable for use on guide pulleys or drums under tensile load
- Refer to the article table for the tensile strength of the support element
- The cable should be installed in a way that the supporting element can absorb the tensile forces
- The mobility of the cores must not be affected by the clamps

Approvals



Design

- Strands of bare copper wires
- Core insulation: rubber compound
- Special supporting element as strain relief
- Outer sheath: rubber compound, type EM2

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Based on**
VDE 0250
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
0.15 mm wire diameter at 1.0 mm²
0.20 mm wire diameter from 1.5 mm²
- Minimum bending radius**
Flexible use: 12.5 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexible use: -25°C to +80°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Tensile strength (N)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE					
0039001	2 X 1.0	7.4	300	20.0	89
0039002	3 G 1.0	8.3	300	30.0	106
00390033	4 G 1.0	8.9	300	40.0	127
00390043	5 G 1.0	10.4	300	48.0	149
0039107	7 G 1.0	12.9	300	69.0	206
0039109	9 G 1.0	14.4	300	91.0	281
0039054	12 G 1.0	18.5	360	124.0	422
0039116	16 G 1.0	17.9	480	165.0	407
0039055	18 G 1.0	19.2	540	185.0	451
0039120	20 G 1.0	20.5	600	206.0	530
0039056	24 G 1.0	22.1	720	247.0	646
0039057	36 G 1.0	26.1	1,080	371.0	863
0039148	48 G 1.0	29.6	1,440	461.0	1222
0039017	2 X 1.5	8.0	300	30.0	108
0039018	3 G 1.5	8.7	300	44.0	128
00390193	4 G 1.5	9.9	300	59.0	158
00390203	5 G 1.5	10.9	300	74.0	188
0039061	7 G 1.5	14.0	315	103.0	260
0039208	8 G 1.5	15.2	360	122.0	300
0039209	9 G 1.5	15.9	405	138.0	375
0039210	10 G 1.5	17.0	450	153.0	427

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Tensile strength (N)	Copper index (kg/km)	Weight (kg/km)
0039058	12 G 1.5	19.9	540	185.0	557
0039059	18 G 1.5	20.9	810	277.0	608
0039060	24 G 1.5	23.4	1,080	370.0	825
0039034	2 X 2.5	9.7	300	49.0	145
0039035	3 G 2.5	10.2	300	74.0	173
00390363	4 G 2.5	11.6	300	98.0	219
00390373	5 G 2.5	12.4	375	120.0	259
0039307	7 G 2.5	16.6	525	171.0	378
0039309	9 G 2.5	18.9	675	229.0	518
0039312	12 G 2.5	23.3	900	308.0	770
0039316	16 G 2.5	22.8	1,200	411.0	749
0039318	18 G 2.5	24.4	1,350	432.0	837
0039324	24 G 2.5	28.5	1,800	576.0	1184
0039336	36 G 2.5	33.2	2,700	864.0	1634
00390463	4 G 4	15.2	480	157.0	307
00390473	5 G 4	16.8	600	197.0	394
00390483	4 G 6	16.8	720	236.0	409
00390493	5 G 6	19.2	900	295.0	528
00390503	4 G 10	21.8	1,200	393.0	698
00390513	5 G 10	24.6	1,500	491.0	853
00390523	4 G 16	25.4	1,920	629.0	974
00390533	5 G 16	28.0	2,400	787.0	1226

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CRANE NSHTÖU refer to page 161
- ÖLFLEX® CRANE VS (N)SHTÖU refer to page 162

Accessories

- SKINTOP® CLICK / CLICK-R refer to page 654

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

ÖLFLEX® CRANE 2S

Flexible at cold temperatures, PVC cables with external steel supporting elements



Info

- Double tensile strength safety



Benefits

- Two steel support elements that are integrated into the outer sheath on opposite sides absorb the tensile forces during operation
- Tensile strength of 2100 N per supporting element

Application range

- For connecting movable control panels and consoles
- As a self-supporting shaft cable; in high rack systems
- Suitable for outdoor applications
- Do not use for lift applications!
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX(R) LIFT cables can be found in the appendix, selection table A3

Product features

- Flame-retardant according to IEC 60332.1.2
- Flexible at low temperatures

Approvals



Design

- Strands of bare copper wires
- Special PVC-based core insulation
- Special textile wrapping to improve sliding movement between the sheath and cores
- Special PVC-based outer sheath
- Opposing, integrated steel supporting elements

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
VDE 0250
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
Flexible use: 20 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexible use: -15 °C to +70 °C

Article number	Number of cores and mm ² per conductor	Cable Ø (mm)	Distance between strain wires (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE 2S					
0027503	8 G 1.5	14.7	20	115.0	372.5
0027504	12 G 1.5	16.2	21	173.0	439
0027505	20 G 1.5	20.1	25	288.0	674

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EASY STRIP 2 stripping and cutting tool refer to page 905

ÖLFLEX® LIFT

Flexible at cold temperatures, PVC lift cables with supporting element



Info

- High operating efficiency
- Suspension length up to 90 m
- VDE-tested and registered

Benefits

- Special cable design for a long service life
- Attractive price and maximum operational efficiency
- Very flexible due to extra-fine wire conductor design

Application range

- Lift cable that ensures the electrical integrity in various areas of lift construction
- Suitable for use in outdoor lifts
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX(R) LIFT cables can be found in the appendix, selection table A3
- The assembly and handling guidelines for ÖLFLEX® CRANE cables can be found in the catalogue appendix, technical table T4; for ÖLFLEX(R) LIFT cables please see the catalogue appendix, technical table T5

Product features

- Flame-retardant according to IEC 60332.1.2
- Good weather-resistance

Approvals



- VDE register no. 7039

Design

- Strands of bare copper wires
- Special PVC-based core insulation
- Supporting element made of hemp or aramid
- Fleece-wrapping between cores and sheath
- Special PVC-based outer sheath

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Suspension length**
refer to article table
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
Flexible use: 20 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexible use: -15°C to +70°C
- VDE-tested**
VDE register no. 7039

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Max. suspension length (m)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® LIFT					
0027020	7 G 1.0	11.5	80	68.0	178
0027022	12 G 1.0	16.3	80	116.0	332
0027024	18 G 1.0	16.4	70	173.0	405
0027027	24 G 1.0	19.4	60	231.0	533.25
0027029	36 G 1.0	25.1	90	346.0	887

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® LIFT T refer to page 167
- ÖLFLEX® LIFT S refer to page 168

Accessories

- Round cable wedged clamps refer to page 973
- Cable shears KT 4 and KT 5 refer to page 904

ÖLFLEX® LIFT T

Flexible at cold temperatures, PVC lift cables with textile braiding and supporting element



Info

- Robust cable design
- Suspension length up to 110 m
- VDE-tested and registered



Benefits

- Special cable design for a long service life
- Able to withstand mechanical stress at high suspension lengths
- Very flexible due to extra-fine wire conductor design

Application range

- Lift cable that ensures the electrical integrity in various areas of lift construction
- Suitable for use in outdoor lifts
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX(R) LIFT cables can be found in the appendix, selection table A3
- The assembly and handling guidelines for ÖLFLEX® CRANE cables can be found in the catalogue appendix, technical table T4; for ÖLFLEX(R) LIFT cables please see the catalogue appendix, technical table T5

Product features

- Flame-retardant according to IEC 60332.1.2
- Good weather-resistance
- Flexible at low temperatures

Approvals

- VDE register no. 7040

Design

- Strands of bare copper wires
- Special PVC-based core insulation
- Supporting element made of hemp or aramid
- Fleece-wrapping between cores and sheath
- Support braid made of textile fibre blend
- Special PVC-based outer sheath

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Suspension length**
refer to article table
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
Flexible use: 20 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexible use: -15°C to +70°C
- VDE-tested**
VDE register no. 7040

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Max. suspension length (m)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® LIFT T					
0027506	12 G 0.75	18.1	110	86.0	360
0027507	18 G 0.75	18.3	110	130.0	460
0027508	24 G 0.75	21.0	80	173.0	530
0027001	7 G 1.0	14.5	80	67.0	225
0027002	12 G 1.0	19.2	80	115.0	410
0027008	18 G 1.0	19.5	70	173.0	475
0027004	20 G 1.0	20.3	70	192.0	525
0027005	24 G 1.0	22.1	60	230.0	600
0027007	36 G 1.0	28.6	90	346.0	950
0027006	28 G 1,0 + 2 x (0,5) C	25.2	90	293.0	765

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® LIFT refer to page 166
- ÖLFLEX® LIFT S refer to page 168

Accessories

- Round cable wedged clamps refer to page 973
- Cable shears KT 4 and KT 5 refer to page 904

ÖLFLEX® LIFT S

Flexible at cold temperatures, PVC lift cables with textile braiding and steel supporting element



Info

- Robust cable design
- Suspension length up to 150 m

Benefits

- Special cable design for a long service life
- Practical experience and long-term tests proved that the cable can withstand extreme stress
- High suspension lengths due to the steel wire supporting element
- Very flexible due to extra-fine wire conductor design

Application range

- Lift cable that ensures the electrical integrity in various areas of lift construction
- Suitable for use in outdoor lifts
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX(R) LIFT cables can be found in the appendix, selection table A3
- The assembly and handling guidelines for ÖLFLEX® CRANE cables can be found in the catalogue appendix, technical table T4; for ÖLFLEX(R) LIFT cables please see the catalogue appendix, technical table T5

Product features

- Flame-retardant according to IEC 60332.1.2
- Good weather-resistance
- Flexible at low temperatures

Approvals



Design

- Strands of bare copper wires
- Special PVC-based core insulation
- Steel support element
- Fleece-wrapping between cores and sheath
- Support braid made of textile fibre blend
- Special PVC-based outer sheath

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Suspension length**
refer to article table
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Minimum bending radius**
Flexible use: 20 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexible use: -15°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Max. suspension length (m)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® LIFT S					
0027009	24 G 1.0	22.1	150	230.0	680
0027010	36 G 1.0	28.6	150	346.0	1092

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® LIFT refer to page 166
- ÖLFLEX® LIFT T refer to page 167

Accessories

- Round cable wedged clamps refer to page 973
- STAR STRIP stripping tool refer to page 906

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® CRANE F

Weather-resistant flat rubber cables



Info

- For outdoor cable trolley application
- Space-saving installation
- Also suitable for power chains and lift applications



Benefits

- Weather-resistant for harsh environmental conditions
- Flat cables need less space than round cables
- Smaller bending radii is possible

Application range

- In crane systems on building sites and shipyards for fixed installation, or for flexible use in cable trolley systems
- Sewage treatment plants, steelworks and high rack facilities
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX(R) LIFT cables can be found in the appendix, selection table A3

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Strands of bare or tinned-copper wires
- Core insulation: rubber compound
- Outer sheath: special rubber compound

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Based on**
VDE 0250 (NGFLGÖU)
- Specific insulation resistance**
> 10 GOhm x cm
- Conductor stranding**
Copper conductor according to VDE 0295 / IEC 60228
up to 25 mm²: extra-fine wire, class 6
from 35 mm²: fine wire, class 5
- Minimum bending radius**
Flexible use: 10 x cable thickness
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexible use: -25 °C to +90 °C

Article number	Number of cores and mm ² per conductor	Outer dimensions, width x height (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE F				
0041041	4 G 1.5	17.5 x 6.2	58.0	200
0041042	5 G 1.5	21.5 x 6.2	72.0	240
0041043	7 G 1.5	29.0 x 6.2	101.0	360
0041044	8 G 1.5	31.5 x 6.2	115.0	370
0041045	10 G 1.5	40.0 x 6.5	144.0	520
0041046	12 G 1.5	47.0 x 6.5	173.0	620
0041047	4 G 2.5	21.0 x 7.5	96.0	280
0041048	5 G 2.5	27.0 x 7.5	120.0	400
0041049	7 G 2.5	35.0 x 7.5	168.0	520
0041050	8 G 2.5	39.0 x 7.5	192.0	550
0041051	12 G 2.5	56.0 x 8.0	288.0	800
0041052	4 G 4	26.0 x 9.0	154.0	410
0041053	7 G 4	42.0 x 9.0	269.0	700
0041054	4 G 6	29.0 x 9.5	230.0	600
0041055	5 G 6	35.0 x 9.5	288.0	650
0041056	7 G 6	42.0 x 9.5	403.0	850
0041057	4 G 10	33.0 x 11.0	384.0	800
0041058	5 G 10	44.0 x 11.0	480.0	1000
0041059	4 G 16	38.0 x 13.0	614.0	1150
0041060	4 G 25	49.5 x 15.0	960.0	1700
0041061	4 G 35	55.0 x 17.0	1,344.0	2360
0041062	4 G 50	63.0 x 19.0	1,920.0	3000
0041063	4 G 70	71.0 x 22.0	2,688.0	4000

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® LIFT F refer to page 171

Accessories

- Cable trolley systems refer to page 970
- flat cable wedge clamps refer to page 973

ÖLFLEX® CRANE CF

Weather-resistant flat rubber cables with copper screening



Info

- For outdoor cable trolley application
- EMC-compliant

Benefits

- Weather-resistant for harsh environmental conditions
- Flat cables need less space than round cables
- Smaller bending radii is possible
- Copper braiding screens the cable against electromagnetic interference

Application range

- In crane systems on building sites and shipyards for fixed installation, or for flexible use in cable trolley systems
- Sewage treatment plants, steelworks and high rack facilities
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX® LIFT cables can be found in the appendix, selection table A3

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Strands of bare or tinned-copper wires
- Core insulation: rubber compound
- Individual core screening consist of
 - plastic foil wrapping
 - tin-plated copper braiding
 - plastic foil wrapping
- Outer sheath: special rubber compound

Technical data



Core identification code

Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers



Based on

VDE 0250 NGFLGOEU (unscreened)



Specific insulation resistance

> 10 GOhm x cm



Conductor stranding

Copper conductor according to VDE 0295 / IEC 60228
up to 25 mm²: extra-fine wire, class 6
from 35 mm²: fine wire, class 5



Minimum bending radius

Flexible use: 10 x cable thickness



Nominal voltage

U_p/U: 300/500 V



Test voltage

2000 V



Protective conductor

G = with GN-YE protective conductor
X = without protective conductor



Temperature range

Flexible use: -25°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer dimensions, width x height (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE CF				
0041075	4 G 1.5	18.5 x 6.5	79.0	220
0041076	8 G 1.5	36.0 x 7.5	155.0	470
0041077	12 G 1.5	54.5 x 8.5	238.0	745
0041078	4 G 2.5	22.5 x 7.5	141.0	320
0041079	12 G 2.5	69.5 x 9.5	499.0	1180
0041080	4 G 4	29.0 x 10.5	219.0	505
0041081	4 G 6	31.0 x 10.5	302.0	605
0041082	4 G 10	36.0 x 11.5	472.0	840
0041083	4 G 16	41.5 x 13.5	687.0	1180
0041084	4 G 25	47.0 x 15.0	1,114.0	1605
0041085	4 G 35	55.0 x 17.0	1,482.0	2520
0041086	4 G 50	66.0 x 20.5	2,238.0	3000

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CRANE F refer to page 169
- ÖLFLEX® LIFT F refer to page 171

Accessories

- Cable trolley systems refer to page 970
- flat cable wedge clamps refer to page 973

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

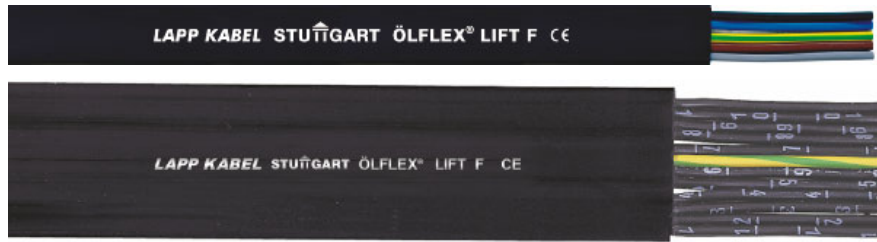
ÖLFLEX® LIFT F

Flexible at cold temperatures, PVC flat cables



Info

- For cable trolley application
- Space-saving installation
- Also suitable for power chains and lift applications



Benefits

- Flat cables need less space than round cables
- Smaller bending radii is possible

Application range

- For hoisting equipment and conveyor systems
- Indoor cranes and high-rack facilities
- As supply line for moving machine parts
- According to VDE definition, this can also be used as a lift control cable with up to 35 m suspension length, and a maximum speed of travel at 1.6 m/s
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX® LIFT cables can be found in the appendix, selection table A3

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



- Meets the requirements of the harmonised PVC flat cable H07VVH6-F

Design

- Strands of bare copper wires
- Core insulation: Based on PVC
- PVC-based outer sheath

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Based on**
EN 50214/VDE 0283-2 (H05VVH6-F or H07VVH6-F)
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
U0/U 300/500 V versions, fine wire according to VDE 0295 Class 5 or IEC 60228 Cl. 5
U0/U 450/750 V versions, extra-fine wire according to VDE 0295 Class 6 or IEC 60228 Cl. 6
- Minimum bending radius**
Flexible use: 10 x cable thickness
- Nominal voltage**
Up to 1.0 mm²: U₀/U: 300/500 V
From 1.5 mm²: U₀/U: 450/750 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexible use:
0 °C to +70 °C (up to 1.0 mm²)
-15 °C to +70 °C (as from 1.5 mm²)

Article number	Number of cores and mm ² per conductor	Outer dimensions, width x height (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® LIFT F				
Nominal voltage U₀/U: 300/500 V, temperature range: 0°C to +70°C				
0042020	12 G 1.0	35.0 x 4.3	115.0	392
0042021	16 G 1.0	46.0 x 4.3	154.0	521
0042022	20 G 1.0	57.0 x 4.3	192.0	645
0042023	24 G 1.0	68.0 x 4.3	230.0	772
Nominal voltage U₀/U: 450/750 V, temperature range: -15°C to +70°C				
00420013	4 G 1.5	15.0 x 5.0	58.0	132
00420023	5 G 1.5	19.0 x 5.0	72.0	170
0042003	7 G 1.5	26.5 x 5.0	101.0	236
0042004	8 G 1.5	28.5 x 5.0	115.0	266
0042005	10 G 1.5	35.5 x 5.0	144.0	333
0042006	12 G 1.5	41.5 x 5.0	173.0	422
00420073	4 G 2.5	18.4 x 5.7	96.0	206
00420083	5 G 2.5	23.4 x 5.7	120.0	257
0042009	7 G 2.5	32.0 x 5.7	168.0	345
0042010	8 G 2.5	34.5 x 5.7	192.0	390
0042050	12 G 2.5	51.5 x 5.7	288.0	580
00420113	4 G 4	20.4 x 6.6	154.0	343
0042012	7 G 4	36.6 x 6.6	269.0	589
00420133	4 G 6	23.2 x 7.3	230.0	425
00420143	4 G 10	28.0 x 9.0	384.0	709
00420153	4 G 16	34.0 x 10.5	614.0	1015
00420163	4 G 25	42.0 x 12.7	960.0	1366

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CRANE F refer to page 169

Accessories

- Cable trolley systems refer to page 970
- flat cable wedge clamps refer to page 973

Expanded ambient temperatures

PVC cables (-20°C to +90°C)

ÖLFLEX® HEAT 105 MC

Colour-coded connection cables made of high heat-resistant PVC



Benefits

- Possible to operate at higher peak temperature (almost 30% more) compared to conventional PVC cables

Application range

- For the connection of motors, transformers, reels, plants, machines, appliances, switch cabinets and other installations with a higher operating or ambient temperature

Product features

- Flame-retardant according to IEC 60332.1.2
- Resistant to acids, alkalis and certain oils at room temperature
- Good UV-resistance

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: PVC, high heat-resistance
- Cores twisted in layers
- Outer sheath: PVC, heat-resistant, black (RAL 9005)

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 7 cores: ÖLFLEX® colour code, refer to Appendix T7
- Based on**
VDE 0281 or 0250
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5 / IEC 60228 class 5 from 0.5 mm²
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
2500 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Fixed installation: -20°C to +90°C
Short-term: +105 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 105 MC				
0026001	2 X 0.75	6.2	14.4	53
0026002	3 G 0.75	6.5	21.6	62
00260033	4 G 0.75	7.1	28.8	76
00260043	5 G 0.75	8.0	36.0	95
0026005	7 G 0.75	9.7	50.0	113
0026006	2 X 1	6.5	19.2	61
0026007	3 G 1	6.9	29.0	74
00260083	4 G 1	7.7	38.4	89
00260093	5 G 1	8.4	48.0	110
0026010	7 G 1	10.2	67.0	130
0026011	2 X 1.5	7.5	29.0	78
0026012	3 G 1.5	8.1	43.2	98
00260133	4 G 1.5	8.9	57.6	122
00260143	5 G 1.5	10.0	72.0	144
0026015	7 G 1.5	12.3	101.0	180

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

ÖLFLEX® HEAT 145 MC

Electron beam cross-linked cables for more demanding application requirements



Info

- Improved characteristics in the event of a fire
- Voltage class from 1.5 mm² 450/750 V
- Please note: Discontinued product!



Benefits

- For safety in areas with high density of people
- Reduction of flame propagation and density and toxicity of smoke gases in event of fire
- Minimises damage to buildings and equipment caused by the formation of toxic acid fumes in fires
- Certified for maritime applications

Application range

- For the wiring and connection of lighting, heating appliances, control cabinets, and distributors in mechanical and plant engineering
- For use in traffic regulation systems and outdoors

Product features

- Halogen-free according to IEC 60754-1
- Flame-retardant according to IEC 60332-1-2
- No flame propagation according to IEC 60332-3-24 or IEC 60332-3-25
- Good moisture, ozone and UV-resistance
- Abrasion and notch-resistant

Approvals



Design

- Fine-wire, tinned-copper conductor
- Electron beam cross-linked polyolefin copolymer insulation
- Cores twisted in layers
- Outer sheath: electron beam cross-linked polyolefin copolymer, black

Technical data

Core identification code
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 7 cores:
black with white numbers (with gn/ye)

Approvals
GL (Germanischer Lloyd)

Conductor stranding
Fine wire according to VDE 0295, class 5 / IEC 60228 class 5 from 0.5 mm²

Minimum bending radius
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
Up to 1.0mm² U₀/U 300/500 V
From 1.5mm² U₀/U 450/750 V
0.6/1kV from 1.5 mm² in the case of fixed and protected installation

Test voltage
3500 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Fixed installation:
-55 °C to +125 °C
Short-term: up to +145 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 145 MC 300/500 V				
0026805	2 X 0.75	5.9	14.4	40
0026806	3 G 0.75	6.2	21.6	53
00268073	4 G 0.75	6.9	28.8	69
00268083	5 G 0.75	7.7	36.0	86
0026815	2 X 1	6.3	19.2	50
0026816	3 G 1	6.8	28.8	67
00268173	4 G 1	7.4	38.4	87
00268183	5 G 1	8.3	48.0	107
0026819	7 G 1	9.9	67.2	152
ÖLFLEX® HEAT 145 MC 450/750 V				
0026825	2 X 1.5	7.6	28.8	71
0026826	3 G 1.5	8.1	43.2	96
00268273	4 G 1.5	8.8	57.6	123
00268293	5 G 1.5	9.8	72.0	156
0026830	7 G 1.5	12.0	101.0	224
0026831	10 G 1.5	14.6	144.0	322
0026832	12 G 1.5	14.6	173.0	316
0026833	16 G 1.5	16.2	230.0	415
0026837	25 G 1.5	21.1	360.0	731
0026838	2 X 2.5	9.0	48.0	102
0026839	3 G 2.5	9.8	72.0	145
00268403	4 G 2.5	10.8	96.0	189
00268413	5 G 2.5	12.0	120.0	235
0026842	7 G 2.5	14.6	168.0	344
00268503	4 G 4	12.2	153.6	276
00268513	5 G 4	13.5	192.0	334
00268563	5 G 6	15.4	288.0	494

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® TRAFFIC 3GKW flex refer to page 141

Expanded ambient temperatures

Cross-linked cables (-55 °C to +125 °C)

ÖLFLEX® HEAT 145 C MC

Electron beam cross-linked cables for more demanding application requirements



Info

- Improved characteristics in the event of a fire
- Screened to comply with EMC
- Please note: Discontinued product!

Benefits

- For safety in areas with high density of people
- Reduction of flame propagation and density and toxicity of smoke gases in event of fire
- Minimises damage to buildings and equipment caused by the formation of toxic acid fumes in fires
- Certified for maritime applications
- Copper braiding screens the cable against electromagnetic interference

Application range

- For the wiring and connection of lighting, heating appliances, control cabinets, and distributors in mechanical and plant engineering
- For use in traffic regulation systems and outdoors

Product features

- Halogen-free according to IEC 60754-1
- Flame-retardant according to IEC 60332-1-2
- No flame propagation according to IEC 60332-3-24 or IEC 60332-3-25
- Good moisture, ozone and UV-resistance
- Abrasion and notch-resistant

Approvals



Design

- Fine-wire, tinned-copper conductor
- Electron beam cross-linked polyolefin copolymer insulation
- Cores twisted in layers
- Tinned-copper braiding
- Outer sheath: electron beam cross-linked polyolefin copolymer, black

Technical data

- Core identification code**
Black with white numbers (without gn/ye)
- Approvals**
GL (Germanischer Lloyd)
- Specific insulation resistance**
>2 TOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5 / IEC 60228 class 5 from 0.5 mm²
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 5 x outer diameter
- Nominal voltage**
Up to 1.0mm² U₀/U 300/500 V
From 1.5mm² U₀/U 450/750 V
0.6/1kV from 1.5 mm² in the case of fixed and protected installation
- Test voltage**
C/C 3500 V
C/S 2500 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Fixed installation:
-55 °C to +125 °C
Short-term: up to +145 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 145 C MC screened 300/500 V				
0026908	2 X 0.75	6.9	38.0	79
0026909	3 X 0.75	6.9	50.0	96
0026910	4 X 0.75	7.6	58.0	116
0026911	5 X 0.75	8.3	70.0	139
0026912	7 X 0.75	9.9	84.9	186
0026916	2 X 1	7.0	43.3	90
0026917	3 X 1	7.4	56.0	104
0026918	4 X 1	8.1	66.0	129
0026919	5 X 1	8.9	95.0	153
0026920	7 X 1	10.5	109.0	211
ÖLFLEX® HEAT 145 C MC screened 450/750 V				
0026924	2 X 1.5	8.2	58.0	114
0026925	3 X 1.5	8.7	71.0	132
0026926	4 X 1.5	9.4	86.0	163
0026927	5 X 1.5	10.5	104.0	200
0026928	7 X 1.5	12.6	136.0	273
0026932	2 X 2.5	9.8	96.0	157
0026933	3 X 2.5	10.4	146.0	198
0026934	4 X 2.5	11.5	150.0	236
0026935	5 X 2.5	12.6	200.0	287
0026938	4 X 4	12.8	220.0	317
0026939	5 X 4	14.3	259.0	376

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® TRAFFIC 3GKW C-flex refer to page 142

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-SC refer to page 719
- SKINTOP® MS-M BRUSH refer to page 669

ÖLFLEX® HEAT 180 SiHF

Silicone cables with extended temperature range



Info

- The classic for multi-functional use



Benefits

- Flexibility simplifies installation where space is limited
- Possesses insulating properties after combustion due to remaining SiO₂ ash on the conductor

Application range

- Areas with high ambient temperatures where insulating and sheath materials of conventional cables will embrittle after a short while
- Typical fields of application
 - Steel, cement, ceramic and iron works
 - Bakery equipment and industrial furnaces
 - Electric motor industry
 - Sauna/solarium construction
 - Thermal and heating elements
 - Lighting technology
 - Ventilator engineering
 - Air-conditioning technology
 - Galvanisation technology

Product features

- Halogen-free and flame-retardant (IEC 60332.1.2)
- Resistant to oils, alcohols, vegetable and animal fats, and chemical substances

Approvals



Design

- Fine-wire, tinned-copper conductor
- Silicone-based core insulation
- Cores twisted in layers
- Silicone-based outer sheath, colour red-brown

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Specific insulation resistance**
>200 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
-50 °C to +180 °C
(adequate ventilation required)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 180 SiHF				
0046001	2 X 0.75	6.4	14.4	59
0046002	3 G 0.75	6.8	21.6	70
00460033	4 G 0.75	7.6	28.8	89
00460043	5 G 0.75	8.5	36.0	112
0046005	6 G 0.75	9.2	43.2	131
0046006	7 G 0.75	9.2	50.4	136
0046007	2 X 1	6.6	19.2	66
0046008	3 G 1	7.0	29.0	79
00460093	4 G 1	7.9	38.4	101
00460103	5 G 1	8.8	48.0	127
0046012	7 G 1	9.5	67.0	156
0046013	2 X 1.5	7.6	29.0	90
0046014	3 G 1.5	8.0	43.0	109
00460153	4 G 1.5	8.8	58.0	134
00460163	5 G 1.5	9.6	72.0	163
0046018	7 G 1.5	10.4	101.0	202
0046039	12 G 1.5	14.0	173.0	361
0046040	16 G 1.5	16.2	230.4	478
0046041	20 G 1.5	17.5	288.0	574

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0046042	24 G 1.5	19.8	345.6	720
0046019	2 X 2.5	8.8	48.0	128
0046020	3 G 2.5	9.7	72.0	167
00460213	4 G 2.5	10.6	96.0	206
00460223	5 G 2.5	11.6	120.0	251
0046024	7 G 2.5	12.6	168.0	313
0046025	2 X 4	10.8	76.8	196
0046026	3 G 4	11.5	115.0	241
00460273	4 G 4	12.6	154.0	300
00460283	5 G 4	14.0	192.0	374
0046030	7 G 4	15.6	269.0	486
0046031	2 X 6	12.4	116.0	268
0046032	3 G 6	13.2	173.0	333
00460333	4 G 6	14.7	230.0	425
00460343	5 G 6	16.6	288.0	538
0046036	7 G 6	18.6	403.0	705
00460373	4 G 10	19.4	384.0	707
00460453	5 G 10	21.6	480.0	878
00460383	4 G 16	21.4	614.0	1004

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® HEAT 180 H05SS-F EWKF refer to page 176
- ÖLFLEX® HEAT 180 EWKF refer to page 179

Expanded ambient temperatures

Silicone cables (-50°C to +180°C)

ÖLFLEX® HEAT 180 H05SS-F EWKF

Europe-wide standardised silicone connection cables with increased mechanical performance



Info

- International use in combination with proven EWKF quality

Benefits

- Europe-wide use due to harmonisation
- Notch and tear-resistant silicone compounds reduce damage due to mechanical stress
- For harsh environments, more durable than conventional H05SS-F standardised cables
- Flexibility simplifies installation where space is limited
- Possesses insulating properties after combustion due to remaining SiO₂ ash on the conductor

Application range

- Areas with high ambient temperatures and very high mechanical stress
- Typical fields of application
 - Steel, cement, ceramic and iron works
 - Bakery equipment and industrial furnaces
 - Electric motor industry
 - Sauna/solarium construction
 - Thermal and heating elements
 - Lighting technology
 - Ventilator engineering
 - Air-conditioning technology
 - Galvanisation technology

Product features

- Halogen-free and flame-retardant (IEC 60332.1.2)
- Good hydrolysis and UV-resistance
- Resistant to oils, alcohols, vegetable and animal fats, and chemical substances
- **EWKF:** Increased initial tear propagation and notch resistance

Approvals



- HD 22.15 S2 (H05SS-F)

Design

- Fine-wire, tinned-copper conductor
- Core insulation: based on EWKF silicone
- Cores twisted together
- Outer sheath: silicone-based EWKF, notch-resistant, black (RAL 9005)

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9
- Approvals**
HD 22.15 S2 (H05SS-F)
- Specific insulation resistance**
>200 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
-50 °C to +180 °C
(adequate ventilation required)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 180 H05SS-F EWKF				
0046900	2 X 0.75	6.4	14.4	54
0046901	3 G 0.75	7.0	21.6	67
00469023	4 G 0.75	7.6	28.8	87
00469033	5 G 0.75	8.5	36.0	105
0046904	2 X 1	6.8	19.2	63
0046905	3 G 1	7.2	28.8	81
00469063	4 G 1	7.9	38.4	98
00469073	5 G 1	8.8	48.0	121
0046908	2 X 1.5	8.4	28.8	84
0046909	3 G 1.5	8.9	43.2	103
00469103	4 G 1.5	9.9	57.6	128
00469113	5 G 1.5	10.9	72.0	154
0046912	2 X 2.5	9.8	48.0	141
0046913	3 G 2.5	10.4	72.0	158
00469143	4 G 2.5	11.6	96.0	195
00469153	5 G 2.5	12.9	120.0	241
0046916	3 G 4	12.3	115.2	239
00469173	4 G 4	13.7	153.6	312
0046919	3 G 6	14.0	172.8	345
00469203	4 G 6	15.6	230.4	451

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® HEAT 180 EWKF refer to page 179
- ÖLFLEX® HEAT 180 EWKF C refer to page 180

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SILVYN® SKINTOP® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® HEAT 180 MS

Certified silicone cables for North America (AWM recognized)



Info

- MS = Multi-Standard
For use in the USA and Canada
- UL AWM Style 4476 (150°C/600V)



Benefits

- Certified for the USA and Canada for export-oriented appliance and apparatus manufacturers
- Thicker cable design meets the requirements of the FT-1 flame test and also approved for the external interconnection of apparatuses and appliances
- Flexibility simplifies installation where space is limited
- Possesses insulating properties after combustion due to remaining SiO₂ ash on the conductor

Application range

- Areas with high ambient temperatures where insulating and sheath materials of conventional cables will embrittle after a short while
- Typical fields of application
 - Steel, cement, ceramic and iron works
 - Bakery equipment and industrial furnaces
 - Electric motor industry
 - Sauna/solarium construction
 - Thermal and heating elements
 - Lighting technology
 - Ventilator engineering
 - Air-conditioning technology
 - Galvanisation technology

Product features

- Metric flexible conductor design
- Halogen-free and flame-retardant (IEC 60332.1.2)
- Good hydrolysis and UV-resistance
- Resistant to oils, alcohols, vegetable and animal fats, and chemical substances

Approvals



- UL AWM 4476 and cUL AWM II A/B
- Special product with AWM rating 200°C/600 Vis available upon request
- Multi-core type AWM cables (Appliance Wiring Material) shall be permitted for industrial machinery (USA) only when part of a listed assembly suitable for the intended use. NFPA 79 Edition 2007 § 12.2.7.3

Design

- Fine-wire, tinned-copper conductor
- Silicone-based core insulation
- Cores twisted together
- Silicone-based outer sheath, colour black (RAL 9005)

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Approvals**
UL AWM Style 4476 (Construction B)
cUL AWM II A/B (Canada)
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
(Refer to Appendix T16 for the matching US conductor sizes in AWG standard)
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
Working voltage UL: 600 V
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
According to VDE: -50 °C to +180 °C
Normatively acc. to UL Style: up to +150 °C (adequate ventilation required)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 180 MS				
0046600	2 X 0.5	7.4	9.8	72
0046601	3 G 0.5	7.8	14.7	83
00466023	4 G 0.5	8.5	19.6	99
00466033	5 G 0.5	9.2	24.5	119
0046604	7 G 0.5	9.9	34.3	142
0046612	2 X 1	8.2	19.2	93
0046613	3 G 1	8.7	28.8	110
00466143	4 G 1	9.4	38.4	133
00466153	5 G 1	10.3	48.0	160
0046616	7 G 1	11.1	67.2	195
0046617	12 G 1	14.9	115.2	345
0046618	2 X 1.5	8.8	28.8	113
0046619	3 G 1.5	9.3	43.2	135
00466203	4 G 1.5	10.1	57.6	165
00466213	5 G 1.5	11.1	72.0	200
0046622	7 G 1.5	12.0	100.8	246
0046623	12 G 1.5	16.1	172.8	437
0046625	18 G 1.5	18.8	259.2	613
0046626	25 G 1.5	22.9	360.0	904
0046628	2 X 2.5	9.6	48.0	146
0046629	3 G 2.5	10.2	72.0	178
00466303	4 G 2.5	11.1	96.0	220
00466313	5 G 2.5	12.2	120.0	269
0046633	3 G 4	11.5	115.2	246
00466343	4 G 4	12.6	153.6	307
00466353	5 G 4	14.2	192.0	389
0046636	3 G 6	14.9	172.8	396
00466373	4 G 6	16.4	230.4	495
00466383	5 G 6	18.0	288.0	608

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® HEAT 180 C MS refer to page 178

Expanded ambient temperatures

Silicone cables (-50°C to +180°C)

ÖLFLEX® HEAT 180 C MS

Screened and approved silicone cables for North America (AWM recognized)



Info

- MS = Multi-Standard
- For use in the USA and Canada
- UL AWM Style 4476 (150°C/600V)
- EMC compliant copper screening

Benefits

- Certified for the USA and Canada for export-oriented appliance and apparatus manufacturers
- Thicker cable design meets the requirements of the FT-1 flame test and also approved for the external interconnection of apparatuses and appliances
- Flexibility simplifies installation where space is limited
- Copper braiding screens the cable against electromagnetic interference

Application range

- Areas with high ambient temperatures where insulating and sheath materials of conventional cables will embrittle after a short while
- Typical fields of application
 - Steel, cement, ceramic and iron works
 - Bakery equipment and industrial furnaces
 - Electric motor industry
 - Sauna/solarium construction
 - Thermal and heating elements
 - Lighting technology
 - Ventilator engineering
 - Air-conditioning technology
 - Galvanisation technology

Product features

- Metric flexible conductor design
- Halogen-free and flame-retardant (IEC 60332.1.2)
- Good hydrolysis and UV-resistance
- Resistant to oils, alcohols, vegetable and animal fats, and chemical substances

Approvals



- UL AWM 4476 and cUL AWM II A/B
- Special product with AWM rating 200°C/600 Vis available upon request
- Multi-core type AWM cables (Appliance Wiring Material) shall be permitted for industrial machinery (USA) only when part of a listed assembly suitable for the intended use. NFPA 79 Edition 2007 §12.2.7.3

Design

- Fine-wire, tinned-copper conductor
- Silicone-based core insulation
- Cores twisted together
- Tinned-copper screen braiding, interleaved plastic foil wrapping
- Silicone-based outer sheath, colour black (RAL 9005)

Technical data

Core identification code
Colours according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers

Approvals
UL AWM Style 4476 (Construction B)
cUL AWM II A/B (Canada)

Specific insulation resistance
>200 GOhm x cm

Conductor stranding
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
(Refer to Appendix T16 for the matching US conductor sizes in AWG standard)

Minimum bending radius
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter

Nominal voltage
U_v/U: 300/500 V
Working voltage UL: 600 V

Test voltage
2000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
According to VDE: -50 °C to +180 °C
Normatively acc. to UL Style: up to +150 °C (adequate ventilation required)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 180 C MS				
0046701	3 G 0.5	8.6	43.4	100
0046702	4 G 0.5	9.3	55.4	122
0046703	5 G 0.5	10.0	60.2	137
0046708	2 X 1	9.0	48.2	104
0046709	3 G 1	9.5	65.0	131
0046710	4 G 1	10.2	74.6	152
0046711	5 G 1	11.0	91.5	181
0046712	7 G 1	11.9	117.9	228
0046716	2 X 1.5	9.6	65.0	126
0046717	3 G 1.5	10.1	79.4	152
0046718	4 G 1.5	10.9	101.1	186
0046719	5 G 1.5	11.8	122.7	222
0046720	7 G 1.5	12.8	158.7	281
0046721	12 G 1.5	16.9	245.2	431
0046723	18 G 1.5	19.6	346.1	600
0046724	25 G 1.5	23.9	495.7	833
0046728	3 G 2.5	11.0	115.5	197
0046729	4 G 2.5	11.9	146.7	244
0046730	5 G 2.5	12.9	177.9	291
0046734	3 G 4	12.3	165.9	261
0046735	4 G 4	13.4	211.5	325
0046736	5 G 4	14.9	257.2	389
0046740	4 G 6	17.2	302.8	482
0046741	5 G 6	18.7	367.6	580
0046742	4 G 10	22.8	508.4	802

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® HEAT 180 MS refer to page 177
- ÖLFLEX® HEAT 180 EWK C refer to page 180

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® HEAT 180 EWKF

Silicone cables with increased mechanical characteristics



Info

- Proven notch-resistant EWKF quality



Benefits

- Longer durability in harsh applications than conventional silicone cables
- Notch and tear-resistant silicone compounds reduce damage due to mechanical stress
- Due to the use of special additives in EWKF silicone, armoured cable versions will not be required
- Flexibility simplifies installation where space is limited
- Possesses insulating properties after combustion due to remaining SiO₂ ash on the conductor

Application range

- Areas with high ambient temperatures and very high mechanical stress
- Typical fields of application
 - Steel, cement, ceramic and iron works
 - Bakery equipment and industrial furnaces
 - Electric motor industry
 - Sauna/solarium construction
 - Thermal and heating elements
 - Lighting technology
 - Ventilator engineering
 - Air-conditioning technology
 - Galvanisation technology

Product features

- Halogen-free and flame-retardant (IEC 60332.1.2)
- Good hydrolysis and UV-resistance
- Resistant to oils, alcohols, vegetable and animal fats, and chemical substances
- **EWKF:** Increased initial tear propagation and notch resistance

Approvals



Design

- Fine-wire, tinned-copper conductor
- Core insulation: based on EWKF silicone
- Cores twisted together
- Outer sheath: silicone-based EWKF, notch-resistant, black (RAL 9005)

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Specific insulation resistance**
>200 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
-50 °C to +180 °C
(adequate ventilation required)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 180 EWKF				
0046500	2 X 0.75	6.4	15.0	49
0046501	3 G 0.75	6.9	22.0	60
00465023	4 G 0.75	7.6	29.0	76
00465033	5 G 0.75	8.5	36.0	96
0046506	2 X 1	6.8	20.0	56
0046507	3 G 1	7.1	29.0	68
00465083	4 G 1	7.9	39.0	88
00465093	5 G 1	8.8	48.0	110
0046110	7 G 1	9.5	67.2	137
0046511	2 X 1.5	8.0	29.0	77
0046512	3 G 1.5	8.4	43.0	94
00465133	4 G 1.5	9.5	58.0	117
00465143	5 G 1.5	10.4	72.0	143
0046115	7 G 1.5	11.0	101.0	180
0046116	12 G 1.5	14.9	173.0	319
0046117	16 G 1.5	17.1	230.4	424
0046119	24 G 1.5	21.0	345.6	637
0046520	2 X 2.5	9.4	48.0	110
0046521	3 G 2.5	9.8	72.0	146
00465223	4 G 2.5	11.1	96.0	181
00465233	5 G 2.5	12.4	120.0	222
0046131	3 G 4	11.5	114.0	213
00461323	4 G 4	12.5	152.0	267
00461333	5 G 4	13.9	190.0	334
0046141	3 G 6	13.2	174.0	297
00461423	4 G 6	14.7	232.0	381
00461433	5 G 6	16.5	290.0	481

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® HEAT 180 H05SS-F EWKF refer to page 176
- ÖLFLEX® HEAT 180 EWKF C refer to page 180

Expanded ambient temperatures

Silicone cables (-50°C to +180°C)

ÖLFLEX® HEAT 180 EWKF C

Screened silicone cables with increased mechanical characteristics



Info

- Proven notch-resistant EWKF quality
- EMC compliant copper screening

Benefits

- Longer durability in harsh applications than conventional silicone cables
- Notch and tear-resistant outer sheath material reduces mechanical damage
- Copper braiding screens the cable against electromagnetic interference
- Flexibility simplifies installation where space is limited
- Due to the use of special additives in EWKF silicone, armoured cable versions will not be required

Application range

- Areas with high ambient temperatures and very high mechanical stress
- Typical fields of application
 - Steel, cement, ceramic and iron works
 - Bakery equipment and industrial furnaces
 - Electric motor industry
 - Sauna/solarium construction
 - Thermal and heating elements
 - Lighting technology
 - Ventilator engineering
 - Air-conditioning technology
 - Galvanisation technology

Product features

- Halogen-free and flame-retardant (IEC 60332.1.2)
- Good hydrolysis and UV-resistance
- Resistant to oils, alcohols, vegetable and animal fats, and chemical substances
- **EWKF:** Increased initial tear propagation and notch resistance

Approvals



Design

- Fine-wire, tinned-copper conductor
- Cores twisted together
- Silicone-based core insulation
- Silicone-based inner sheath
- Tinned-copper screen braiding, interleaved plastic foil wrapping
- Outer sheath: silicone-based EWKF, notch-resistant, black (RAL 9005)

Technical data



Core identification code
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers



Specific insulation resistance
>200 GOhm x cm



Conductor stranding
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5



Minimum bending radius
Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter



Nominal voltage
U₀/U: 300/500 V



Test voltage
2000 V



Protective conductor
G = with GN-YE protective conductor
X = without protective conductor



Temperature range
-50 °C to +180 °C
(adequate ventilation required)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 180 EWKF C				
0046301	2 X 0.75	8.6	37.5	104
0046302	3 G 0.75	8.9	46.1	118
00463033	4 G 0.75	10.2	57.3	152
00463043	5 G 0.75	10.9	67.3	176
0046307	2 X 1	9.0	43.0	116
0046308	3 G 1	9.7	55.7	142
00463093	4 G 1	10.9	67.8	175
00463103	5 G 1	11.6	80.3	203
0046312	7 G 1	12.3	113.9	250
0046313	2 X 1.5	10.8	58.0	166
0046314	3 G 1.5	11.2	74.0	188
00463153	4 G 1.5	12.0	91.4	222
00463163	5 G 1.5	12.8	121.7	273
0046318	7 G 1.5	13.6	157.2	341
0046320	3 G 2.5	12.8	121.2	271
00463213	4 G 2.5	13.9	150.9	328
00463223	5 G 2.5	14.8	180.5	387
00463273	4 G 4	16.0	218.0	448
00463283	5 G 4	17.2	262.9	531
0046330	3 G 6	16.4	240.5	489
00463313	4 G 6	17.9	304.7	591
00463323	5 G 6	19.4	370.0	706

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® HEAT 180 H05SS-F EWKF refer to page 176
- ÖLFLEX® HEAT 180 EWKF refer to page 179

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-SC refer to page 719
- SKINTOP® MS-M BRUSH refer to page 669

ÖLFLEX® HEAT 180 GLS

Steel-armoured silicone cables for increased mechanical stress



Info

- Protected against high thermal and mechanical loads

Benefits

- Close-meshed braid made of galvanised steel wires protects against mechanical damage
- Longer durability in harsh applications than conventional silicone cables
- Possesses insulating properties after combustion due to remaining SiO₂ ash on the conductor

Application range

- Areas with high ambient temperatures and very high mechanical stress
- Typical fields of application
 - Steel and glass works
 - Cement and ceramic works
 - Foundries
 - Shipbuilding industry
 - Furnace construction

Product features

- Halogen-free and flame-retardant (IEC 60332.1.2)
- Only suitable for installation in dry conditions

Approvals



Design

- Fine-wire, tinned-copper conductor
- Silicone-based core insulation
- Cores twisted together
- Silicone-based outer sheath, colour red-brown
- Glass fibre wrapping
- Galvanised steel wire braiding

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Specific insulation resistance**
>200 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
- Minimum bending radius**
Occasional flexing: 20 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
-50 °C to +180 °C
(adequate ventilation required)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 180 GLS				
0046201	2 X 0.75	7.6	14.4	84
0046202	3 G 0.75	8.0	21.6	96
00462033	4 G 0.75	8.8	28.8	118
00462043	5 G 0.75	9.7	36.0	145
0046205	6 G 0.75	10.4	43.2	167
0046206	7 G 0.75	10.4	50.4	171
0046207	2 X 1	7.8	19.2	92
0046208	3 G 1	8.2	28.8	106
00462093	4 G 1	9.1	38.4	132
00462103	5 G 1	10.0	48.0	161
0046212	7 G 1	10.7	67.0	205
0046213	2 X 1.5	8.8	29.0	119
0046214	3 G 1.5	9.2	43.0	140
00462153	4 G 1.5	10.0	57.6	168
00462163	5 G 1.5	10.8	72.0	212
0046218	7 G 1.5	11.8	101.0	255
0046237	12 G 1.5	15.4	173.0	433
0046219	2 X 2.5	10.0	48.0	162
0046220	3 G 2.5	10.9	72.0	217
00462213	4 G 2.5	12.0	96.0	260
00462223	5 G 2.5	13.0	120.0	310
0046224	7 G 2.5	14.0	168.0	362
0046226	3 G 4	12.9	115.0	300
00462273	4 G 4	14.0	154.0	365
00462283	5 G 4	15.4	192.0	446
00462313	4 G 6	16.1	230.0	500
00462343	4 G 10	20.8	384.0	807
00462353	4 G 16	22.8	614.0	1117

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® HEAT 260 GLS refer to page 184

Expanded ambient temperatures

FEP cables (-100°C to +205°C)

ÖLFLEX® HEAT 205 MC

Fluorinated ethylene propylene cables for harsh applications



Info

- High chemical resistance
- Wide temperature application range

ÖLFLEX® HEAT 205 PTFE/FEP

4-cored version with PTFE insulation and special core identity code



Info

- EMC compliant copper screening

Benefits

- Space and weight-saving installations due to small cable diameters
- Resistant to contact with mostly all highly aggressive chemical media
- Low outgassing behaviour

Application range

- Conventional cables are not designed for use in environments with very high operating temperatures, heavy usage of chemical agents, or tight spaces
- Typical fields of application
 - Industrial furnace construction
 - Foundries
 - Chemical industry
 - Power plant engineering
 - Paint shop line technology
 - Heating elements
 - Polymer processing
 - Wind turbine engineering

Product features

- ÖLFLEX® HEAT 205 made of FEP
 - Outstanding resistance against acids, solvents, lacquers, petrol, oils and many other chemical media
 - Difficult to inflame
 - High dielectric strength and high abrasion resistance
 - Low water absorption
 - Resistant to microbes
 - Adhesion free insulation materials
 - Weather and ozone resistant
 - Hydrophobic and dirt-repellent
 - High elongation and tear resistance
 - Resistant against synth. hydraulic fluids

Approvals



Design

ÖLFLEX® HEAT 205 MC

- Fine-wire, tinned-copper conductor
- FEP-based core insulation
- Cores twisted together
- FEP-based outer sheath, black

ÖLFLEX® HEAT 205 PTFE/FEP

- Fine-wire, tinned-copper conductor
- PTFE-based core insulation
- Cores twisted together
- Tinned-copper braiding
- Outer sheath: FEP-based, white

Technical data



Core identification code
ÖLFLEX® HEAT 205 MC

Up to 5 cores: colour-coded acc. to VDE 0293-308
From 7 cores: ÖLFLEX® colour-codes, refer to Appendix T7

ÖLFLEX® HEAT 205 PTFE/FEP

Blue, red, grey, black



Conductor stranding

Fine wire according to VDE 0295, class 5 / IEC 60228 class 5 from 0.5 mm²



Minimum bending radius

Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter



Nominal voltage

U₀/U: 300/500 V



Test voltage

ÖLFLEX® HEAT 205 MC
2500 V

ÖLFLEX® HEAT 205 PTFE/FEP

C/C: 2500 V
C/S: 2000 V



Protective conductor

G = with GN-YE protective conductor
X = without protective conductor



Temperature range

Fixed installation:
-100°C to +205°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 205 MC				
0091200	2 X 0.25	3.1	5.0	17.2
0091201	3 G 0.25	3.3	7.5	22.2
00912023	4 G 0.25	3.6	10.0	27.5
0091210	2 X 0.5	3.7	9.8	21.6
0091211	3 G 0.5	3.9	14.7	32.8
00912123	4 G 0.5	4.3	19.6	44.4
0091220	2 X 0.75	4.3	14.4	31.5
0091221	3 G 0.75	4.6	21.6	46.1
00912223	4 G 0.75	5.1	29.0	57.9
0091230	2 X 1	4.7	19.0	41.6
0091231	3 G 1	5.0	29.0	55.6

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
00912323	4 G 1	5.5	38.0	70
0091100	3 G 1.5	5.8	43.0	70
00911033	4 G 1.5	6.3	58.0	98
00911013	5 G 1.5	7.0	72.0	117
0091102	7 G 1.5	7.6	101.0	184
0091236	3 G 2.5	6.9	72.0	86
00912353	4 G 2.5	7.6	96.0	115
00912373	5 G 2.5	8.4	120.0	144
00912423	4 G 4	9.3	154.0	180
00912433	5 G 4	10.3	192.0	225
ÖLFLEX® HEAT 205 PTFE/FEP				
30016373	4 X 0.75	5.9	49.0	78

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

ÖLFLEX® HEAT 205 MC

- ÖLFLEX® HEAT 260 MC refer to page 183

ÖLFLEX® HEAT 260 MC

Polytetrafluoroethylene cables for most extreme loads



ÖLFLEX® HEAT 260 C MC

Copper-screened polytetrafluoroethylene cables for most extreme loads



Info

- Excellent chemical, thermal and electrical performance



Info

- EMC compliant copper screening

Benefits

- Space and weight-saving installations due to small cable diameters
- Stress crack resistant to frequent ambient temperature fluctuations
- Resistant to contact with mostly all highly aggressive chemical media
- Low outgassing behaviour
- Copper braiding of screened version complies with EMC requirements and protects against electromagnetic interference

Application range

- Conventional cables are not designed for use in environments with very high operating temperatures, heavy usage of chemical agents, or tight spaces
- ÖLFLEX® HEAT 260 has proven to be an effective solution in harsh environments such as paint shop lines
- Typical fields of application
 - Industrial furnace construction
 - Foundries
 - Chemical industry
 - Power plant engineering
 - Paint shop line technology
 - Heating elements
 - Polymer processing
 - Wind turbine engineering

Product features

- ÖLFLEX® HEAT 260 made of PTFE
 - Outstanding resistance against acids, alkalis, solvents, lacquers, petrol, oils and many other chemical media
 - Difficult to inflame
 - High dielectric strength and high abrasion resistance
 - Low water absorption
 - Resistant to microbes
 - Adhesion-free insulation materials
 - Weather and ozone resistant
 - Hydrophobic and dirt-repellent
 - High elongation and tear resistance
 - Resists contact with liquid nitrogen
 - Resistant against synthetic hydraulic fluids

Approvals



Design

ÖLFLEX® HEAT 260 MC

- Fine-wire strand made of nickel-plated copper
- PTFE-based core insulation
- Cores twisted together
- PTFE-based outer sheath, black

ÖLFLEX® HEAT 260 C MC

- Fine-wire strand made of nickel-plated copper
- PTFE-based core insulation
- Cores twisted together
- Special wrapping
- Nickel-plated copper braiding
- PTFE-based outer sheath, black

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9
- Specific insulation resistance**
> 1 TΩm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
ÖLFLEX® HEAT 260 MC
2500 V
ÖLFLEX® HEAT 260 C MC
C/C: 2500 V
C/S: 2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Fixed installation:
-190°C to +260°C
Short-term: up to +300°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 260 MC - unscreened				
0091300	2 X 0.5	3.9	9.6	22
0091301	3 G 0.5	4.1	14.4	33
0091302	4 G 0.5	4.5	19.2	45
0091305	2 X 0.75	4.2	14.4	32
0091306	3 G 0.75	4.4	21.6	47
0091307	4 G 0.75	5.1	28.8	58
0091310	2 X 1	4.8	19.2	42
0091311	3 G 1	5.1	28.8	56
0091312	4 G 1	5.8	38.4	71
0091315	3 G 1.5	5.6	43.2	72
0091316	4 G 1.5	6.1	57.6	98
0091317	5 G 1.5	7.0	72.0	118
0091320	3 G 2.5	7.1	72.0	87

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0091321	4 G 2.5	7.7	96.0	116
0091322	5 G 2.5	8.5	120.0	145
ÖLFLEX® HEAT 260 C MC - screened				
0091330	3 G 0.75	5.5	46.0	75
0091331	4 G 0.75	5.9	51.0	87
0091332	3 G 1	5.8	48.0	81
0091333	4 G 1	6.4	65.0	104
0091334	3 G 1.5	6.3	65.0	101
0091335	4 G 1.5	7.2	86.0	134
0091336	5 G 1.5	7.8	105.0	162
0091337	3 G 2.5	7.9	114.0	160
0091338	4 G 2.5	8.7	140.0	204
0091339	5 G 2.5	9.4	209.0	270

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

ÖLFLEX® HEAT 260 MC

- ÖLFLEX® HEAT 205 MC refer to page 182

Expanded ambient temperatures

PTFE cables (-190°C to +260°C)

ÖLFLEX® HEAT 260 GLS

Steel-armoured PTFE cables for increased mechanical stress



Info

- Good thermal and mechanical performance
- Robust cable design
- GL - Germanischer Lloyd approved

Benefits

- Close-meshed braid made of galvanised steel wires protects against mechanical damage
- Small outer diameters for maximum saving of space and weight
- Germanischer Lloyd approval for use with ship diesel engines

Application range

- Extremely high temperatures and mechanical stress require special insulated and armoured cables
- Main applications
 - Ship-building
 - Signal systems
 - Monitoring devices
 - Diesel engines
 - Steam boiler units
 - Turbine manufacturing

Product features

- Flame-retardant
- Stress crack resistant to frequent ambient temperature fluctuations
- High dielectric strength and high abrasion resistance
- High elongation resistance and tear strength
- Only suitable for installation in dry conditions

Approvals



Design

- Fine-wire strand made of nickel-plated copper
- PTFE-based core insulation
- Cores twisted together
- Impregnated glass fibre braiding
- Galvanised steel wire braiding

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
7-core version:
gn/ye, bl, bn, bk, bk, bk, tr
- Approvals**
GL (Germanischer Lloyd)
- Specific insulation resistance**
> 1 TOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
- Minimum bending radius**
In fixed installations:
5 x cable diameter
- Nominal voltage**
U₀/U 300/500 V
according to GL: 250 V
- Test voltage**
1500 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Fixed installation: -190°C to +260°C
According to GL: +205 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 260 GLS				
0091120	2 X 1.5	5.7	29.0	93
0091121	3 G 1.5	6.1	43.0	102
00911223	4 G 1.5	6.6	58.0	130
00911233	5 G 1.5	7.3	72.0	149
0091124	7 G 1.5	8.0	101.0	180

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® HEAT 180 GLS refer to page 181

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® HEAT 350 MC

Suitable for use in ambient temperature from -50 °C to +350 °C



Info

- Voltage rating: 230/400 V
- For use in dry conditions

Benefits

- Low conductor-resistance due to the nickel-plated copper conductors

Application range

- Wide operating temperature range allows the product to be used in applications under Thermal Class C.
- Blast furnaces and glassworks
- Chemical and power station construction
- Motor and furnace construction
- Lighting, apparatus and instrument industry

Product features

- Flame-retardant according to IEC 60332.1.2
- Only suitable for installation in dry conditions
- ÖLFLEX® HEAT 1565 is recommended if the peak temperature of the application may briefly go beyond 350 °C

Approvals



Design

- Fine-wire strand made of nickel-plated copper
- Core insulation: glass fibre covering and impregnated glass fibre braids
- Cores twisted together
- Outer sheath: impregnated glass fibre braiding, white (natural)

Technical data

- Core identification code**
Colours according to VDE 0293-308, refer to Appendix T9
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U 230/400 V
- Test voltage**
1500 V
- Temperature range**
Fixed installation:
-50 °C to +350 °C
(adequate ventilation required)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 350 MC				
0091375	2 X 1	6.8	19.2	56
0091376	3 G 1	7.4	28.8	70
0091377	4 G 1	8.2	38.4	88
0091380	2 X 1.5	7.8	28.8	77
0091381	3 G 1.5	8.4	43.2	93
0091382	4 G 1.5	9.4	57.6	118
0091383	5 G 1.5	10.3	72.0	140
0091390	3 G 2.5	8.9	72.0	124
0091391	4 G 2.5	9.8	96.0	160
0091392	5 G 2.5	10.1	120.0	194

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® HEAT 1565 MC refer to page 186

Expanded ambient temperatures

Glass fibre cables (above +260°C)

ÖLFLEX® HEAT 1565 MC

Suitable for use in ambient temperatures between -195°C to +400°C



Info

- Short-term: up to +1565 °C
- For use in dry conditions

■ Benefits

- Low conductor-resistance due to the nickel-plated copper conductors
- Able to withstand temporary contact with molten metal or glass

■ Application range

- Guarantees the circuit even in areas with extremely high ambient temperatures
- Blast furnaces and coking plants
- Refineries
- Glassworks
- Aluminium and steelworks

■ Product features

- Flame-retardant
- Only suitable for installation in dry conditions

■ Approvals



■ Design

- Fine-wire strand made of nickel-plated copper
- MICA tape wrapping and impregnated glass fibre braiding
- Cores twisted together
- Outer sheath: MICA tape-wrapping, impregnated glass fibre braiding, red

■ Technical data



Core identification code
2-core cable:
blue, brown
4-core cable:
black, blue, yellow, brown



Conductor stranding
Fine copper wire strands



Minimum bending radius
Fixed installation:
5 x cable diameter



Nominal voltage
U₀/U: 300/500 V



Test voltage
2200 V



Temperature range
-195 °C to +400 °C
(adequate ventilation required)
Short-term: up to +1565 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 1565 MC				
30020808	2 x 0.5	7.0	9.6	48
30020809	2 x 0.75	7.4	14.4	66
30016609	2 x 1	7.7	19.2	74
30016603	2 x 1.5	8.2	28.8	87
30020810	2 x 2.5	9.7	48.0	114
30020811	2 x 4	11.2	76.8	161
30016606	4 x 1	8.9	38.4	123
30016600	4 x 1.5	9.5	57.6	148

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil ≤ 30 kg, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® HEAT 145 SC

Electron beam cross-linked single cores for more demanding application requirements



Info

- Improved characteristics in the event of a fire
- Voltage class from 1.5 mm² 450/750 V
- Please note: Discontinued product!

Benefits

- For safety in areas with high density of people
- Reduction of flame propagation and density and toxicity of smoke gases in event of fire
- Minimises damage to buildings and equipment caused by the formation of toxic acid fumes in fires
- Certified for maritime applications

Application range

- For the wiring and connection of lighting, heating appliances, control cabinets, and distributors in mechanical and plant engineering

Product features

- Halogen-free according to IEC 60754-1
- Flame-retardant according to IEC 60332-1-2
- No flame propagation according to IEC 60332-3-24 or IEC 60332-3-25
- Abrasion and notch-resistant

Approvals



Design

- Fine-wire, tinned-copper conductor
- Electron beam cross-linked polyolefin copolymer insulation

Technical data

- Core identification code**
refer to article table
- Approvals**
GL (Germanischer Lloyd)
- Conductor stranding**
Fine wire according to VDE 0295, class 5 / IEC 60228 class 5 from 0.5 mm²
- Minimum bending radius**
Fixed installation: 4 x outer diameter
- Nominal voltage**
Up to 1.0mm² U₀/U 300/500 V
From 1.5mm² U₀/U 450/750 V
0.6/1kV from 1.5 mm² in the case of fixed and protected installation
- Test voltage**
3500 V
- Temperature range**
Fixed installation:
-55 °C to +125 °C
Short-term: up to +145 °C

Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	green/yellow	black	blue	dark/blue	brown	yellow
0.25	1.6	2.4	5.0		0181001	0181002			0181005
0.5	1.9	4.8	8.0	0182000	0182001	0182002		0182003	0182005
0.75	2.2	7.2	11.0	0183000	0183001	0183002	0183114	0183003	0183005
1	2.4	9.6	14.0	0184000	0184001	0184002	0184114	0184003	0184005
1.5	3.0	14.4	21.0	0185000	0185001	0185002	0185114	0185003	0185005
2.5	3.7	24.0	33.0	0186000	0186001	0186002	0186114	0186003	0186005
4	4.2	38.4	49.0	0187000	0187001	0187002		0187003	0187005
6	4.7	57.6	67.0	0188000	0188001	0188002	0188114	0188003	0188005
10	6.1	96.0	112.0	0189000	0189001	0189002	0189114		
16	7.5	154.0	172.0	0190000	0190001	0190002			
25	9.0	240.0	262.0	0191000	0191001				
35	10.1	336.0	362.0	0192000	0192001				
50	12.7	480.0	512.0	0193000	0193001				
70	14.7	672.0	710.0	0194000	0194001				
95	16.4	912.0	937.0		0195001				
120	18.2	1,152.0	1,159.0		0196001				
150	20.9	1,440.0	1,447.0	0197000	0197001				
185	22.9	1,776.0	1,790.0		0198001				
240	25.8	2,304.0	2,318.0		0199001				

Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	green	violet	orange	red	white	grey
0.25	1.6	2.4	5.0	0181006			0181104	0181105	0181106
0.5	1.9	4.8	8.0	0182006	0182007	0182009	0182104	0182105	0182106
0.75	2.2	7.2	11.0	0183006	0183007	0183009	0183104	0183105	0183106
1	2.4	9.6	14.0	0184006			0184104	0184105	0184106
1.5	3.0	14.4	21.0	0185006	0185007	0185009	0185104	0185105	0185106
2.5	3.7	24.0	33.0	0186006	0186007	0186009	0186104	0186105	0186106
4	4.2	38.4	49.0	0187006		0187009	0187104	0187105	
6	4.7	57.6	67.0				0188104	0188105	
10	6.1	96.0	112.0				0189104		

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.
 Cross-section 0.25 mm² only available as 300 m box / Cross-section 0.5 mm² only available as 200 m box / Cross-section 1.0 - 4 mm² only available as 100 m box
 Article number index of core colours: 000 = green-yellow / 001 = black / 002 = blue / 114 = dark blue / 003 = brown / 005 = yellow / 006 = green / 007 = violet / 009 = orange / 104 = red / 105 = white / 106 = grey

Similar products

- ÖLFLEX® TRAFFIC 3GKW refer to page 140
- X05Z-K 110°C refer to page 210
- X07Z-K 110°C refer to page 211

Expanded ambient temperatures

Silicone single cores (-50°C to +180°C)

ÖLFLEX® HEAT 180 SiF

Versatile stranded conductors with extended temperature range



Info

- Flexible fine-wire copper conductor

Application range

- Areas with high ambient temperatures where conventional core insulation materials will embrittle after a short while
- Typical fields of application
 - Control cabinet manufacturing
 - Appliances and apparatus engineering
 - Electric motor industry
 - Sauna/solarium construction
 - Thermal and heating elements
 - Lighting technology
 - Ventilator engineering
 - Air-conditioning technology
 - Furnace construction
 - Polymer processing
 - Generator and transformer manufacturing

Product features

- Halogen-free according to IEC 60754-1
- Resistant to oils, alcohols, vegetable and animal fats, and chemical substances

Approvals



Design

- Fine-wire, tinned-copper conductor
- Silicone-based insulation

Technical data

- Specific insulation resistance**
>200 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/ IEC 60228 class 5 from 0.5 mm²
- Minimum bending radius**
Fixed installation: 6 x core diameter
One bend at end of core:
3 x cable diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
2000 V
- Temperature range**
-50 °C to +180 °C
(adequate ventilation required)
Short-term: +200 °C

Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	green/yellow	black	blue	brown	beige	yellow	green
0.25	1.9	2.4	5.4	0047000	0047001	0047002	0047003		0047005	0047006
0.5	2.1	4.8	9.0	0048000	0048001	0048002	0048003		0048005	0048006
0.75	2.4	7.2	12.0	0049000	0049001	0049002	0049003		0049005	0049006
1	2.5	9.6	15.0	0050000	0050001	0050002	0050003	0050004	0050005	0050006
1.5	2.8	14.4	20.0	0051000	0051001	0051002	0051003		0051005	0051006
2.5	3.4	24.0	32.0	0052000	0052001	0052002	0052003		0052005	0052006
4	4.2	38.0	50.0	0053000	0053001	0053002	0053003		0053005	0053006
6	5.0	58.0	73.0	0054000	0054001	0054002	0054003	0054004	0054005	0054006
10	6.6	96.0	118.0	0055000	0055001	0055002	0055003			
16	7.4	154.0	177.0	0056000	0056001	0056002				
25	9.2	240.0	277.0	0057000	0057001	0057002				
35	10.3	336.0	374.0	0058000	0058001	0058002				
50	12.2	480.0	530.0	0059000	0059001					
70	14.2	672.0	724.0	0060000	0060001	0060002				
95	16.6	912.0	982.0	0061000	0061001					
120	18.0	1,152.0	1,219.0	0062000	0062001					
150	20.0	1,440.0	1,524.0		0063001					
185	22.5	1,776.0	1,915.0		0064001					

Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	violet	pink	orange	red	white	grey
0.25	1.9	2.4	5.4	0047007	0047008	0047009	0047104	0047105	0047106
0.5	2.1	4.8	9.0	0048007	0048008	0048009	0048104	0048105	0048106
0.75	2.4	7.2	12.0	0049007	0049008	0049009	0049104	0049105	0049106
1	2.5	9.6	15.0	0050007	0050008	0050009	0050104	0050105	0050106
1.5	2.8	14.4	20.0	0051007	0051008	0051009	0051104	0051105	0051106
2.5	3.4	24.0	32.0	0052007			0052104	0052105	0052106
4	4.2	38.0	50.0			0053009	0053104	0053105	0053106
6	5.0	58.0	73.0				0054104	0054105	0054106
10	6.6	96.0	118.0			0055009	0055104		0055106
16	7.4	154.0	177.0				0056104		0056106
25	9.2	240.0	277.0				0057104		0057106
35	10.3	336.0	374.0				0058104		
50	12.2	480.0	530.0				0059104		
95	16.6	912.0	982.0					0061105	

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Also available on large spools and non-returnable drums.

Photographs are not to scale and do not represent detailed images of the respective products.

Article number index of core colours: 000 = green-yellow; 001 = black; 002 = blue; 003 = brown; 004 = beige; 005 = yellow; 006 = green; 007 = violet; 008 = pink; 009 = orange; 104 = red; 105 = white; 106 = grey

Other colours are available upon request

ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

SILVYN®

FLEXIMARK®

ACCESSORIES

APPENDIX

ÖLFLEX® HEAT 180 SiD

Versatile solid conductors with extended temperature range



Info

- Solid single copper conductor

Application range

- Areas with high ambient temperatures where conventional core insulation materials will embrittle after a short while
- Typical fields of application
 - Control cabinet manufacturing
 - Appliances and apparatus engineering
 - Electric motor industry
 - Sauna/solarium construction
 - Thermal and heating elements
 - Lighting technology
 - Ventilator engineering
 - Air-conditioning technology
 - Furnace construction
 - Polymer processing
 - Generator and transformer manufacturing

Product features

- Halogen-free according to IEC 60754-1
- Resistant to oils, alcohols, vegetable and animal fats, and chemical substances

Approvals



Design

- Tinned solid copper wire
- Silicone-based insulation

Technical data

- Specific insulation resistance**
>200 GOhm x cm
- Conductor stranding**
Solid single copper conductor
- Minimum bending radius**
Fixed installation: 6 x core diameter
One bend at end of core:
3 x cable diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
2000 V
- Temperature range**
-50 °C to +180 °C
(adequate ventilation required)
Short-term: +200°C

Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	green/yellow	black	blue	brown	beige
0.5	2.0	4.8	9.0		0068001			
0.75	2.2	7.2	12.0	0069000	0069001	0069002	0069003	
1	2.3	9.6	15.0	0070000	0070001	0070002	0070003	
1.5	2.6	14.4	20.0	0071000	0071001	0071002	0071003	0071004
2.5	3.2	24.0	32.0		0072001	0072002		
4	3.9	38.0	50.0		0073001			
6	4.6	58.0	64.5		0074001	0074002		

Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	green	violet	red	white
0.5	2.0	4.8	9.0				0068105
0.75	2.2	7.2	12.0	0069006	0069007	0069104	0069105
1	2.3	9.6	15.0		0070007	0070104	0070105
1.5	2.6	14.4	20.0				0071105

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Also available on large spools and non-returnable drums.
 Photographs are not to scale and do not represent detailed images of the respective products.
 Article number index of core colours: 000 = green-yellow; 001 = black; 002 = blue; 003 = brown; 004 = beige; 006 = green; 007 = violet; 104 = red; 105 = white
 Other colours are available upon request

Expanded ambient temperatures

Silicone single cores (-50°C to +180°C)

ÖLFLEX® HEAT 180 SiF/GL



Info

- With glass fibre protection braiding

ÖLFLEX® HEAT 180 SiZ



Info

- Separable twin conductor

ÖLFLEX® HEAT 180 FZLSi



Info

- 10 kV high-voltage ignition wire

Application range

- Areas with high ambient temperatures where conventional core insulation materials will embrittle after a short while
- Typical fields of application
 - Control cabinet manufacturing
 - Appliances and apparatus engineering
 - Electric motor industry
 - Sauna/solarium construction
 - Thermal and heating elements
 - Lighting technology
 - Ventilator engineering
 - Air-conditioning technology
 - Furnace construction
 - Polymer processing
 - Generator and transformer manufacturing

Product features

- Halogen-free according to IEC 60754-1
- Resistant to oils, alcohols, vegetable and animal fats, and chemical substances

Approvals



ÖLFLEX® HEAT 180 FZLSi

- Increased voltage rating is not subject to the Low Voltage Directive 2006/95/EC

Design

ÖLFLEX® HEAT 180 SiF/GL

- Fine-wire, tinned-copper conductor
- Silicone-based insulation
- Impregnated glass fibre braiding

ÖLFLEX® HEAT 180 SiZ

- Fine-wire, tinned-copper conductor
- Silicone-based insulation
- Cores connected in parallel with a separating strip

ÖLFLEX® HEAT 180 FZLSi

- Fine-wire, tinned-copper conductor
- Silicone-based insulation

Technical data



Conductor stranding

Fine wire according to VDE 0295, class 5 / IEC 60228 class 5 from 0.5 mm²



Minimum bending radius

Fixed installation: 6 x core diameter
One bend at end of core:
3 x cable diameter



Nominal voltage

Version SiF/GL / SiZ:
U_n/U 300/500 V
Version FZLSi:
10 kV



Test voltage

Version SiF/GL / SiZ:
2000 V
Version FZLSi:
20 kV



Temperature range

-50 °C to +180 °C
(adequate ventilation required)
Short-term: +200 °C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 180 SiF/GL hook-up wire with glass fibre braiding				
0065102	0.5	2.5	4.8	11.0
0065103	0.75	2.8	7.2	14.0
0065104	1	2.9	9.6	17.0
0065105	1.5	3.2	14.4	23.0
0065106	2.5	3.8	24.0	36.0
0065107	4	4.6	38.0	54.0
0065108	6	5.4	58.0	80.0
0065109	10	7.6	96.0	133.0
0065110	16	8.4	154.0	198.0
0065111	25	10.2	240.0	301.0
0065112	35	11.3	336.0	401.0
0065113	50	13.4	480.0	567.0
ÖLFLEX® HEAT 180 SiZ twin conductor				
0065201	2 x 0.5	2.1 x 4.2	9.6	17.0
0065202	2 x 0.75	2.3 x 4.6	14.4	24.0
ÖLFLEX® HEAT 180 FZLSi high-voltage ignition wire				
2510001	1 (32 x 0,2)	7.0	9.6	68.0
2510005	1,5 (30 x 0,25)	7.6	14.4	83.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Colour of core insulation: ÖLFLEX® HEAT 180 SiF/GL = white; with natural glass fibre braiding / ÖLFLEX® HEAT 180 SiZ = red; ÖLFLEX® HEAT 180 FZLSi = red

ÖLFLEX® HEAT 205 SC

For very high and low temperature requirements



Info

- Thermal and chemical resistance
- Space and weight-saving
- FEP = fluorinated ethylene propylene

Benefits

- Small outer diameters for maximum saving of space and weight
- Resistant to contact with mostly all highly aggressive chemical media
- Low outgassing behaviour

Application range

- Conventional cables are not designed for use in environments with very high operating temperatures, heavy usage of chemical agents, or tight spaces
- Typical fields of application
 - Control cabinets with high heat generation
 - Measuring instruments
 - Furnaces and brickworks
 - Heating equipment and kitchen appliances
 - Electric motor building
 - Installations in the chemical industry

Product features

- ÖLFLEX® HEAT 205 made of FEP
 - Outstanding resistance against acids, solvents, lacquers, petrol, oils and many other chemical media
 - Difficult to inflame
 - High dielectric strength and high abrasion resistance
 - Low water absorption
 - Resistant to microbes
 - Adhesion free insulation materials
 - Weather and ozone resistant
 - Hydrophobic and dirt-repellent
 - High elongation and tear resistance
 - Resistant against synth. hydraulic fluids

Approvals



Design

- Fine-wire, tinned-copper conductor
- FEP core insulation

Technical data

- Specific insulation resistance**
>2 TOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295, class 5/ IEC 60228 class 5 from 0.5 mm²
- Minimum bending radius**
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
2500 V
- Temperature range**
Fixed installation: -100°C to +205°C

Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	green/yellow	black	blue	brown	yellow	green	violet
0.14	1.0	1.3	2.6		0080001	0080002		0080005	0080006	
0.25	1.1	2.4	4		0081001	0081002	0081003	0081005	0081006	
0.5	1.4	4.8	6.8	0082000	0082001	0082002	0082003	0082005	0082006	0082007
0.75	1.7	7.2	10.1	0083000	0083001	0083002	0083003	0083005	0083006	
1	1.9	9.6	12.8	0084000	0084001	0084002	0084003	0084005	0084006	0084007
1.5	2.2	14.4	18	0085000	0085001	0085002	0085003	0085005		
2.5	2.7	24.0	29.5	0086000	0086001	0086002	0086003			0086007
4	3.3	38.0	45	0087000	0087001	0087002	0087003	0087005		
6	4.1	58.0	68	0088000	0088001	0088002	0088003			
10	5.4	96.0	116	0089000	0089001	0089002	0089003			
16	6.7	154.0	175	0090000	0090001	0090002				

Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	pink	orange	transparent	red	white	grey
0.14	1.0	1.3	2.6			0080010	0080104	0080105	
0.25	1.1	2.4	4		0081009	0081010	0081104	0081105	0081106
0.5	1.4	4.8	6.8		0082009	0082010	0082104	0082105	0082106
0.75	1.7	7.2	10.1	0083008		0083010	0083104	0083105	
1	1.9	9.6	12.8			0084010	0084104	0084105	0084106
1.5	2.2	14.4	18			0085010	0085104	0085105	
2.5	2.7	24.0	29.5			0086010	0086104	0086105	0086106
4	3.3	38.0	45			0087010	0087104	0087105	
6	4.1	58.0	68			0088010	0088104		
10	5.4	96.0	116			0089010	0089104	0089105	0089106
16	6.7	154.0	175				0090104		

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100m

Available as original coil goods only

Also available on large spools and non-returnable drums.

Photographs are not to scale and do not represent detailed images of the respective products.

Article number index of core colours: 000 = green-yellow; 001 = black; 002 = blue; 003 = brown; 005 = yellow; 006 = green; 007 = violet; 008 = pink; 009 = orange; 010 = transparent; 104 = red; 105 = white; 106 = grey

Other colours are available upon request

Similar products

- ÖLFLEX® HEAT 260 SC refer to page 192

Expanded ambient temperatures

PTFE single cores (-190°C to +260°C)

ÖLFLEX® HEAT 260 SC

For use in the most extreme conditions



Info

- Excellent chemical, thermal and electrical performance
- Space and weight-saving
- PTFE= Polytetrafluoroethylene

Benefits

- Small outer diameters for maximum saving of space and weight
- Resistant to contact with mostly all highly aggressive chemical media
- Stress crack resistant to frequent ambient temperature fluctuations
- Low outgassing behaviour

Application range

- Conventional cables are not designed for use in environments with very high operating temperatures, heavy usage of chemical agents, or tight spaces
- Typical fields of application
 - Control cabinets with high heat generation
 - Measuring instruments
 - Furnaces and brickworks
 - Heating equipment and kitchen appliances
 - Electric motor building
 - Installations in the chemical industry

Product features

- ÖLFLEX® HEAT 260 made of PTFE
 - Outstanding resistance against acids, alkalis, solvents, lacquers, petrol, oils and many other chemical media
 - Difficult to inflame
 - High dielectric strength and high abrasion resistance
 - Low water absorption
 - Resistant to microbes
 - Adhesion-free insulation materials
 - Weather and ozone resistant
 - Hydrophobic and dirt-repellent
 - High elongation and tear resistance
 - Resists contact with liquid nitrogen
 - Resistant against synthetic hydraulic fluids

Approvals



Design

- Silver-plated AWG copper conductor
- PTFE core insulation

Technical data

- Specific insulation resistance**
> 1 TOhm x cm
- Conductor stranding**
AWG conductor sizes, 7, 19 or 37 wires
- Minimum bending radius**
Fixed installation:
4 x outer diameter
- Nominal voltage**
U_c/U: 300/500 V
- Test voltage**
3400 V
- Temperature range**
Fixed installation: -190°C to +260°C

AWG No. and wire number	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	green/yellow	black	blue	brown	yellow	green	violet
28 (7)	0.8	0.9	2	0094000	0094001	0094002	0094003	0094005	0094006	0094007
26 (7)	0.9	1.4	2.7		0095001	0095002		0095005	0095006	0095007
26 (19)	0.9	1.5	2.9	0096000	0096001				0096006	
24 (7)	1.1	2.2	3.8		0097001	0097002	0097003			
24 (19)	1.1	2.3	4	0098000	0098001	0098002	0098003		0098006	
22 (7)	1.2	3.4	5.4		0099001	0099002	0099003		0099006	0099007
22 (19)	1.2	3.7	5.7		0100001	0100002	0100003	0100005		
20 (7)	1.4	5.4	7.7		0101001	0101002	0101003		0101006	
20 (19)	1.4	5.9	8.2		0102001	0102002	0102003	0102005	0102006	0102007
18 (7)	1.7	8.6	12		0103001					
18 (19)	1.7	9.3	12	0104000	0104001	0104002	0104003	0104005	0104006	0104007
16 (19)	2.0	11.8	16	0105000	0105001	0105002	0105003	0105005	0105006	0105007
14 (19)	2.4	18.7	23	0106000	0106001	0106002	0106003	0106005	0106006	
12 (19)	2.8	29.6	35	0107000	0107001	0107002	0107003	0107005	0107006	
10 (37)	3.4	45.6	51	0108000	0108001	0108002				

AWG No. and wire number	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	pink	orange	transparent	red	white	grey
28 (7)	0.8	0.9	2	0094008	0094009	0094010	0094104	0094105	0094106
26 (7)	0.9	1.4	2.7		0095009		0095104	0095105	0095106
26 (19)	0.9	1.5	2.9				0096104		
24 (7)	1.1	2.2	3.8				0097104	0097105	
24 (19)	1.1	2.3	4				0098104	0098105	0098106
22 (7)	1.2	3.4	5.4				0099104	0099105	
22 (19)	1.2	3.7	5.7		0100009		0100104	0100105	
20 (7)	1.4	5.4	7.7				0101104	0101105	
20 (19)	1.4	5.9	8.2		0102009		0102104	0102105	0102106
18 (19)	1.7	9.3	12		0104009	0104010	0104104	0104105	
16 (19)	2.0	11.8	16	0105008	0105009		0105104	0105105	
14 (19)	2.4	18.7	23				0106104	0106105	0106106
12 (19)	2.8	29.6	35					0107105	
10 (37)	3.4	45.6	51				0108104	0108105	

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Packaging size: Coil 100m

Available as original coil goods only

Also available on large spools and non-returnable drums.

Photographs are not to scale and do not represent detailed images of the respective products.

Article number index of core colours: 000 = green-yellow; 001 = black; 002 = blue; 003 = brown; 005 = yellow; 006 = green; 007 = violet; 008 = pink; 009 = orange; 010 = transparent; 104 = red; 105 = white; 106 = grey

Other colours are available upon request

Similar products

- ÖLFLEX® HEAT 205 SC refer to page 191

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

ÖLFLEX® HEAT 350 SC

Suitable for use in ambient temperature from -50 °C to +350 °C



Info

- Voltage rating: 230/400 V
- For use in dry conditions

Benefits

- Low conductor-resistance due to the nickel-plated copper conductors

Application range

- Wide operating temperature range allows the product to be used in applications under Thermal Class C.
- Blast furnaces and glassworks
- Chemical and power station construction
- Motor and furnace construction
- Lighting, apparatus and instrument industry

Product features

- Flame-retardant according to IEC 60332.1.2
- Only suitable for installation in dry conditions
- ÖLFLEX® HEAT 1565 is recommended if the peak temperature of the application may briefly go beyond 350 °C

Approvals



Design

- Fine-wire strand made of nickel-plated copper
- Core insulation: glass fibre covering (additional mica wrapping from 16 mm²) and impregnated glass fibre braid, core colour = white (natural)

Technical data

- Core identification code**
Natural colour
- Specific insulation resistance**
> 20 GΩhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
- Minimum bending radius**
Fixed installation:
5 x cable diameter
- Nominal voltage**
U₀/U 230/400 V
- Test voltage**
1500 V
- Temperature range**
Fixed installation:
-50 °C to +350 °C
(adequate ventilation required)

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 350 SC				
0091350	0.5	2.5	4.8	13.0
0091351	0.75	3.0	7.2	15.0
0091352	1	3.4	9.6	17.0
0091353	1.5	3.5	14.4	23.0
0091354	2.5	3.7	24.0	34.0
0091355	4	4.2	38.4	54.0
0091356	6	6.2	57.6	84.0
0091357	10	8.0	96.0	120.0
0091358	16	7.3	153.6	199.0
0091359	25	9.5	240.0	300.0
0091360	35	10.9	336.0	399.0
0091361	50	13.2	480.0	540.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® HEAT 1565 SC refer to page 194

Expanded ambient temperatures

Glass fibre single cores (above +260°C)

ÖLFLEX® HEAT 1565 SC

Suitable for use in ambient temperatures between -195°C to +400°C



Info

- Short-term: up to +1565 °C
- For use in dry conditions

Benefits

- Low conductor-resistance due to the nickel-plated copper conductors
- Able to withstand temporary contact with molten metal or glass

Application range

- Guarantees the circuit even in areas with extremely high ambient temperatures
- Blast furnaces and coking plants
- Refineries
- Glassworks
- Aluminium and steelworks

Product features

- Flame-retardant
- Only suitable for installation in dry conditions

Approvals



Design

- Fine-wire strand made of nickel-plated copper
- Mica tape wrapping
- Impregnated glass fibre braiding, red

Technical data



Core identification code
red



Conductor stranding
Fine copper wire strands



Minimum bending radius
Fixed installation:
5 x cable diameter



Nominal voltage
U₀/U: 300/500 V



Test voltage
2200 V



Temperature range
-195 °C to +400 °C
(adequate ventilation required)
Short-term: up to +1565 °C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT SC 1565				
3020780	0.75	2.9	7.2	15.9
3020781	1	3.0	9.6	18.8
3013234	1.5	3.3	14.4	24.3
3020782	2.5	3.8	24.0	35.0
3018942	4	4.8	38.4	56.0
3020783	6	5.6	57.6	86.4
3016697	10	6.2	96.0	123.0
3016698	16	7.9	153.6	202.5
3016699	25	9.2	240.0	295.1
3016771	35	10.6	336.0	403.9
3017861	50	12.2	480.0	545.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil ≤ 30 kg, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



Technical data

- Peak operating voltage**
500 V (0.14 mm²)
900 V (0.25 sq.mm)
- Based on**
VDE 0812
- Conductor stranding**
0.14 mm²: ≥ 18 strands (each with 0.10 mm Ø)
0.25 mm²: ≥ 14 strands (each with 0.15 mm Ø)
- Nominal voltage**
Operating voltage < 50 VAC
UPP - peak-to-peak voltage: ≤ 250 V
- Test voltage**
1200 V (0.14 mm²)
2500 V (0.25 mm²)
- Temperature range**
Fixed installation: -30°C to +70°C

Application range

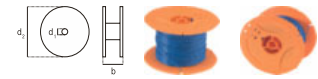
- Stranded hook-up wires for wiring of telecommunication devices and electronic components within devices

Product features

- Flame-retardant according to IEC 60332.1.2
- Spool: d1 = 18 mm; d2 = 150 mm; b = 85 mm

Design

- Stranded copper wire
- Core insulation: PVC-based YI 2/TI 2 acc. VDE 0207-4



Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Green/yellow	black	blue	Dark blue	brown
0.14	1.1	500	1.3	4125000S	4125001S	4125002S	4125014S	4125003S
0.25	1.3	250	2.4	4126000S	4126001S	4126002S	4126014S	4126003S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	beige	yellow	green	violet	Pink
0.14	1.1	500	1.3	4125005S	4125006S	4125007S	4125008S	4125008S
0.25	1.3	250	2.4	4126004S	4126005S	4126006S	4126007S	4126008S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	orange	Transparent	red	white	grey
0.14	1.1	500	1.3	4125009S		4125104S	4125105S	4125106S
0.25	1.3	250	2.4	4126009S	4126010S	4126104S	4126105S	4126106S

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

LiY with twin colour helix insulation



Technical data

- Peak operating voltage**
900 V (0.25 sq.mm)
- Based on**
VDE 0812
- Conductor stranding**
0.25 mm²: ≥ 14 strands (each with 0.15 mm Ø)
- Nominal voltage**
Operating voltage < 50 VAC
UPP - peak-to-peak voltage: ≤ 250 V
- Test voltage**
2500 V (0.25 mm²)
- Temperature range**
Fixed installation: -30°C to +70°C

Application range

- Stranded hook-up wires for wiring of telecommunication devices and electronic components within devices

Product features

- Flame-retardant according to IEC 60332.1.2
- Spool: d1 = 18 mm; d2 = 150 mm; b = 85 mm

Design

- Stranded copper wire
- Core insulation: PVC-based YI 2/TI 2 acc. VDE 0207-4
- Labeled with coloured stripes



Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	black/green	black/red	black/white	blue/black
0.25	1.5	250	2.4	4502202S	4502212S	4502222S	4502232S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	blue/green	blue/red	blue/white	brown/black
0.25	1.5	250	2.4	4502242S	4502252S	4502262S	4502272S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	brown/green	brown/white	yellow-black	yellow-red
0.25	1.5	250	2.4	4502282S	4502292S	4502302S	4502312S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	yellow-white	green-black	green-white	violet-black
0.25	1.5	250	2.4	4502322S	4502332S	4502342S	4502352S

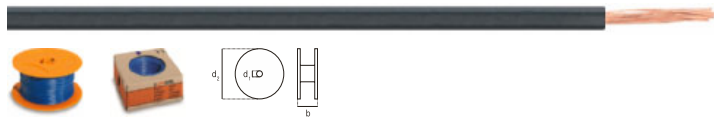
Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	violet-yellow	violet-white	orange-black	orange-white
0.25	1.5	250	2.4	4502362S	4502372S	4502382S	4502392S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	red-black	red-yellow	red-white	white-black
0.25	1.5	250	2.4	4502402S	4502412S	4502422S	4502432S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	white-blue	white-red	grey-black
0.25	1.5	250	2.4	4502442S	4502462S	4502472S

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

H05V-K



Benefits

- Type-compliant versions <HAR>-certified with “<HAR>” testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area

Application range

- Internal wiring of devices
- Protected installation in and on lighting equipments
- Signal systems in and on plaster in tubes

Product features

- Flame-retardant according to IEC 60332.1.2
- Spool: d1 = 18 mm; d2 = 200 mm; b = 85 mm

Design

- Fine-wire strand made of bare copper wires
- Core insulation: Based on PVC

Technical data

DIN VDE Approvals
HD 21/VDE 0281

Specific insulation resistance
> 20 GOhm x cm

Conductor stranding
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5

Minimum bending radius
At a cable temperature of 20 °C ± 10 °C, according to HD 516
4 x outer diameter (OD) for normal use; 2 x OD for cautious bending

Nominal voltage
U₀/U: 300/500 V

Test voltage
2000 V

Amp. Current rating
VDE 0298 Part 4
HD 516/VDE 0298-300

Temperature range
Fixed installation:
-30°C to +80°C

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/spool	Copper index (kg/km)	Weight (kg/km)	Green/yellow	black	blue	Dark blue	brown
0.5	2.5	100		4.8	9	4510001	4510011	4510021	4510141	4510031
0.75	2.7	100		7.2	12	4510002	4510012	4510022	4510142	4510032
1	2.8	100		9.6	15	4510003	4510013	4510023	4510143	4510033
0.5	2.5		250	4.8	9	4510001S	4510011S	4510021S	4510141S	4510031S
0.75	2.7		250	7.2	12	4510002S	4510012S	4510022S	4510142S	4510032S
1	2.8		250	9.6	15	4510003S	4510013S	4510023S	4510143S	4510033S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/spool	Copper index (kg/km)	Weight (kg/km)	yellow	green	violet	Pink	orange
0.5	2.5	100		4.8	9	4510111	4510121	4510071	4510081	4510091
0.75	2.7	100		7.2	12	4510112	4510122	4510072	4510082	4510092
1	2.8	100		9.6	15	4510113	4510123	4510073	4510083	4510093
0.5	2.5		250	4.8	9	4510111S	4510121S	4510071S	4510081S	4510091S
0.75	2.7		250	7.2	12	4510112S	4510122S	4510072S	4510082S	4510092S
1	2.8		250	9.6	15	4510113S	4510123S	4510073S	4510083S	4510093S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/spool	Copper index (kg/km)	Weight (kg/km)	Transparent	red	white	grey	ultra-marine blue
0.5	2.5	100		4.8	9	4510101	4510041	4510051	4510061	4510161
0.75	2.7	100		7.2	12	4510102	4510042	4510052	4510062	
1	2.8	100		9.6	15	4510103	4510043	4510053	4510063	4510163
0.5	2.5		250	4.8	9	4510101S	4510041S	4510051S	4510061S	4510161S
0.75	2.7		250	7.2	12	4510102S	4510042S	4510052S	4510062S	4510162S
1	2.8		250	9.6	15	4510103S	4510043S	4510053S	4510063S	4510163S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	Dark blue/white
0.5	2.5	100	4.8	9	4510921
0.75	2.7	100	7.2	12	4510922
1	2.8	100	9.6	15	4510923

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

X05V-K with twin colour helix insulation



Technical data

	Based on HD 21/VDE 0281
	Specific insulation resistance > 20 GOhm x cm
	Conductor stranding Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
	Minimum bending radius 4 x outer diameter (OD) if used as defined for H05V-K; 2 x OD for cautious bending
	Nominal voltage U ₀ /U: 300/500 V
	Test voltage 2000 V
	Current rating VDE 0298 Part 4 HD 516/VDE 0298-300
	Temperature range Fixed installation: -30°C to +80°C

Application range

- Internal wiring of devices
- Protected installation in and on lighting equipments
- Signal systems in and on plaster in tubes

Design

- Fine-wire strand made of bare copper wires
- Core insulation: Based on PVC
- Labelled with coloured stripes

Product features

- Flame-retardant according to IEC 60332.1.2
- Spool: d₁ = 18 mm; d₂ = 200 mm; b = 85 mm

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Weight (kg/km)	Dark blue/white	black/green	black/red	black/white
0.5	2.5	250	4.8	9	4512921S	4512201S	4512211S	4512221S
0.75	2.7	250	7.2	12	4512922S	4512202S	4512212S	4512222S
1	2.8	250	9.6	15	4512923S	4512203S	4512213S	4512223S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Weight (kg/km)	blue/black	blue/green	blue/red	blue/white
0.5	2.5	250	4.8	9	4512231S	4512241S	4512251S	4512261S
0.75	2.7	250	7.2	12	4512232S	4512242S	4512252S	4512262S
1	2.8	250	9.6	15	4512233S	4512243S	4512253S	4512263S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Weight (kg/km)	brown/black	brown/green	brown/white	yellow-black
0.5	2.5	250	4.8	9	4512271S	4512281S	4512291S	4512301S
0.75	2.7	250	7.2	12	4512272S	4512282S	4512292S	4512302S
1	2.8	250	9.6	15	4512273S	4512283S	4512293S	4512303S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Weight (kg/km)	yellow-red	yellow-white	green-black	green-white
0.5	2.5	250	4.8	9	4512311S	4512321S	4512331S	4512341S
0.75	2.7	250	7.2	12	4512312S	4512322S	4512332S	4512342S
1	2.8	250	9.6	15	4512313S	4512323S	4512333S	4512343S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Weight (kg/km)	violet-black	violet-yellow	violet-white	orange-black
0.5	2.5	250	4.8	9	4512351S	4512361S	4512371S	4512381S
0.75	2.7	250	7.2	12	4512352S	4512362S	4512372S	4512382S
1	2.8	250	9.6	15	4512353S	4512363S	4512373S	4512383S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Weight (kg/km)	orange-white	red-black	red-yellow	red-white
0.5	2.5	250	4.8	9	4512391S	4512401S	4512411S	4512421S
0.75	2.7	250	7.2	12	4512392S	4512402S	4512412S	4512422S
1	2.8	250	9.6	15	4512393S	4512403S	4512413S	4512423S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Weight (kg/km)	white-black	white-blue	white-brown	white-red
0.5	2.5	250	4.8	9	4512431S	4512441S	4512451S	4512461S
0.75	2.7	250	7.2	12	4512432S	4512442S	4512452S	4512462S
1	2.8	250	9.6	15	4512433S	4512443S	4512453S	4512463S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Weight (kg/km)	grey-black
0.5	2.5	250	4.8	9	4512471S
0.75	2.7	250	7.2	12	4512472S
1	2.8	250	9.6	15	4512473S

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

H07V-K



Benefits

- Type-compliant versions <HAR>-certified with “<HAR>” testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area

Application range

- Laying in tubes, exposed or buried in plaster, and in closed installation ducts
- For direct laying on racks, troughs and tubes only as potential equalisation conductor

Product features

- Flame-retardant according to IEC 60332.1.2
- Spool: d1 = 18 mm; d2 = 200 mm; b = 85 mm

Design

- Fine-wire strand made of bare copper wires
- Core insulation: Based on PVC



Technical data



Approvals
HD 21/VDE 0281



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5



Minimum bending radius
At a cable temperature of 20 °C ± 10 °C, according to HD 516
OD ≤ 8 mm: 4 x OD* / 2 x OD** ; 8 < OD ≤ 12 mm: 5 x OD* / 3 x OD** ; OD > 12 mm: 6 x OD* / 4 x OD**



Nominal voltage
U₀/U: 450/750 V



Test voltage
2500 V



Current rating
VDE 0298 Part 4
HD 516/VDE 0298-300



Temperature range
Fixed installation:
-30°C to +80°C

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/spool	Copper index (kg/km)	Weight (kg/km)	Green/yellow	black	blue	Dark blue	brown
1.5	3.4		150	14.4	22	4520001S	4520011S	4520021S	4520141S	4520031S
2.5	4.1		100	24.0	37	4520002S	4520012S	4520022S	4520142S	4520032S
1.5	3.4	100		14.4	22	4520001	4520011	4520021	4520141	4520031
2.5	4.1	100		24.0	37	4520002	4520012	4520022	4520142	4520032
4	4.8	100		38.4	45	4520003	4520013	4520023	4520143	4520033
6	5.3	100		57.6	71	4520004	4520014	4520024	4520144	4520034
10	6.8	100		96.0	120	4520005	4520015	4520025	4520145	4520035
16	8.1			153.6	187	4520006	4520016	4520026	4520146	4520036
25	10.2			240.0	290	4521001	4521011	4521021	4521141	4521031
35	11.7			336.0	399	4521002	4521012	4521022	4521142	4521032
50	13.9			480.0	559	4521003	4521013	4521023	4521143	4521033
70	16.0			672.0	776	4521004	4521014	4521024	4521144	4521034
95	18.2			912.0	1031	4521005	4521015	4521025		
120	20.2			1,152.0	1285	4521006	4521016	4521026		
150	22.5			1,440.0	1563	4521007	4521017			
185	24.9			1,776.0	1915	4521008	4521018	4521028		
240	28.4			2,304.0	2550	4521009	4521019			

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/spool	Copper index (kg/km)	Weight (kg/km)	yellow	green	violet	Pink	orange
1.5	3.4		150	14.4	22	4520111S	4520121S	4520071S		4520091S
2.5	4.1		100	24.0	37	4520112S	4520122S			4520092S
1.5	3.4	100		14.4	22	4520111	4520121	4520071	4520081	4520091
2.5	4.1	100		24.0	37	4520112	4520122	4520072	4520082	4520092
4	4.8	100		38.4	45	4520113	4520123	4520073		4520093
6	5.3	100		57.6	71	4520114	4520124	4520074		4520094
10	6.8	100		96.0	120		4520125	4520075		4520095
16	8.1			153.6	187		4520126	4520076		4520096
25	10.2			240.0	290		4521121			4521091
35	11.7			336.0	399		4521122			4521092
50	13.9			480.0	559					4521093

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/spool	Copper index (kg/km)	Weight (kg/km)	red	white	grey	ultra-marine blue
1.5	3.4		150	14.4	22	4520041S	4520051S	4520061S	
2.5	4.1		100	24.0	37	4520042S	4520052S	4520062S	
1.5	3.4	100		14.4	22	4520041	4520051	4520061	4520161
2.5	4.1	100		24.0	37	4520042	4520052	4520062	4520162
4	4.8	100		38.4	45	4520043	4520053	4520063	4520163
6	5.3	100		57.6	71	4520044	4520054	4520064	4520164
10	6.8	100		96.0	120	4520045	4520055	4520065	4520165
16	8.1			153.6	187	4520046	4520056	4520066	4520166
25	10.2			240.0	290	4521041	4521051	4521061	
35	11.7			336.0	399	4521042		4521062	
50	13.9			480.0	559	4521043		4521063	
70	16.0			672.0	776	4521044			
120	20.2			1,152.0	1285	4521046			4521166

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Packaging size: Coil ≤ 30 kg, otherwise drum

Photographs are not to scale and do not represent detailed images of the respective products.

*for conventional use, **for careful bending; "OD" = outer diameter

Similar products

- Multi-Standard SC 2.1 refer to page 204
- Multi-Standard SC 2.2 refer to page 206

Accessories

- Mobile crimp tool crimping pliers refer to page 931
- DIN-assorted boxes conductor end sleeves refer to page 913
- PEW 8.87 crimping pliers refer to page 916
- FLEXIMARK® Collar Snap-on refer to page 856

X07V-K with twin colour helix insulation



Technical data

	Based on HD 21/VDE 0281
	Specific insulation resistance > 20 GOhm x cm
	Conductor stranding Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
	Minimum bending radius 4 x outer diameter (OD) if used as defined for H07V-K; 2 x OD for cautious bending
	Nominal voltage U ₀ /U: 450/750 V
	Test voltage 2500 V
	Current rating VDE 0298 Part 4 HD 516/VDE 0298-300
	Temperature range Fixed installation: -30°C to +80°C

Application range

- Laying in tubes, exposed or buried in plaster, and in closed installation ducts
- For direct laying on racks, troughs and tubes only as potential equalisation conductor

Design

- Fine-wire strand made of bare copper wires
- Core insulation: Based on PVC
- Labelled with coloured stripes

Product features

- Flame-retardant according to IEC 60332.1.2
- Spool: d1 = 18 mm; d2 = 200 mm; b = 85 mm

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Weight (kg/km)	Dark blue/white	black/green	black/red	black/white	blue/black	blue/green	blue/red
1.5	3.4	150	14.4	22	4522921S	4522201S	4522211S	4522221S	4522231S	4522241S	4522251S
2.5	4.1	100	24.0	37	4522922S		4522212S	4522222S	4522232S	4522242S	4522252S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Weight (kg/km)	blue/white	brown/black	brown/green	brown/white	yellow-black	yellow-red	yellow-white
1.5	3.4	150	14.4	22	4522261S	4522271S	4522281S	4522291S	4522301S	4522311S	4522321S
2.5	4.1	100	24.0	37	4522262S	4522272S		4522292S	4522302S	4522312S	4522322S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Weight (kg/km)	green-black	green-white	violet-yellow	violet-white	orange-black	orange-white	red-black
1.5	3.4	150	14.4	22	4522331S	4522341S	4522361S	4522371S	4522381S	4522391S	4522401S
2.5	4.1	100	24.0	37	4522332S	4522342S	4522362S	4522372S		4522392S	4522402S

Conductor cross-section (mm ²)	Outer diameter (mm)	m/spool	Copper index (kg/km)	Weight (kg/km)	red-yellow	red-white	white-black	white-blue	white-brown	white-red	grey-black
1.5	3.4	150	14.4	22	4522411S	4522421S	4522431S	4522441S	4522451S	4522461S	4522471S
2.5	4.1	100	24.0	37	4522412S	4522422S	4522432S	4522442S	4522452S	4522462S	4522472S

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- X05V-K with twin colour helix insulation refer to page 197

Accessories

- FLEXIMARK® FLEXIPRINT LF Single core marking refer to page 879
- DIN-assorted boxes conductor end sleeves refer to page 913
- EASY STRIP 2 stripping and cutting tool refer to page 905
- PEW 8.87 crimping pliers refer to page 916

S07V-K numbered

Simplified and safer assignment during wiring through numbered insulation



Info

- Numbered insulation

Benefits

- Safe assignment of several cores in the control cabinet
- Greatly simplifies the installation

Application range

- Control cabinet wiring
- Laying in tubes, exposed or buried in plaster, and in closed installation ducts

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Based on PVC
- Printed numbers, digits 1 to 3

Technical data



Based on
HD 21/VDE 0281



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
Fine wire according to VDE 0295 Class 5/
IEC 60228 Class 5



Minimum bending radius
OD ≤ 8 mm: 4 x OD*/2 x OD**;
8 < OD ≤ 12 mm: 5 x OD*/3 x OD**



Nominal voltage
U0/U: 450/750 VAC
In protected and fixed installations:
U0/U: 600/1000 V



Test voltage
2500 V



Current rating
VDE 0298 Part 4
HD 516/VDE 0298-300



Temperature range
Fixed installation:
-30°C to +80°C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Core colour	Core imprint	Copper index (kg/km)	Weight (kg/km)
4800000	10	6.8	black	1	96.0	120
4800001	10	6.8	black	2	96.0	120
4800002	10	6.8	black	3	96.0	120
4800003	10	6.8	brown	1	96.0	120
4800004	10	6.8	brown	2	96.0	120
4800005	10	6.8	brown	3	96.0	120
4800006	16	8.1	black	1	154.0	187
4800007	16	8.1	black	2	154.0	187
4800008	16	8.1	black	3	154.0	187
4800009	16	8.1	brown	1	154.0	187
4800010	16	8.1	brown	2	154.0	187
4800011	16	8.1	brown	3	154.0	187

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg, otherwise drum

Photographs are not to scale and do not represent detailed images of the respective products.

*for use defined for H07V-K; **for careful bending; "OD" = outer diameter

Similar products

- H07V-K refer to page 198
- Multi-Standard SC 2.1 refer to page 204

Accessories

- DIN-assorted boxes conductor end sleeves refer to page 913
- EASY STRIP 2 stripping and cutting tool refer to page 905
- PEW 8.87 crimping pliers refer to page 916

H05V-K in big one-way cardboard box

Harmonised, flexible single conductor for protected, fixed installation



Info

- Efficient
- Harmonised (HAR)

Technical data

	Approvals HD 21/VDE 0281
	Specific insulation resistance > 20 GOhm x cm
	Conductor stranding Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
	Minimum bending radius At a cable temperature of 20 °C ± 10 °C, according to HD 516 4 x outer diameter (OD) for normal use; 2 x OD for cautious bending
	Nominal voltage U ₀ /U = 300/500 V AC
	Test voltage 2000 V AC
	Current rating VDE 0298 Part 4 HD 516/VDE 0298-300
	Temperature range Fixed installation: -30°C to +80°C

Benefits

- Higher cost-effectiveness due to optimum processing volumes
- Single cores are embossed so that an additional, subsequent marking by ink jet printing is readable
- The comparatively low weight of the cardboard boxes makes handling easy
- Type-compliant versions <HAR>-certified with "<HAR>" testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area

Application range

- Ideal for assembling to achieve longer operating times and trouble-free printing
- Suitable for assembling cable harnesses and wiring during switch cabinet installation

H05V-K in big one-way cardboard box



Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Based on PVC

Conductor cross-section (mm ²)	Outer diameter (mm)	m/box	Copper index (kg/km)	Weight (kg/km)	Green/yellow	black	blue	Dark blue	brown
0.5	2.5	3,000	4.8	9	4510001K	4510011K	4510021K	4511064K	4511065K
0.5	2.5	9,000	4.8	9			4510021E	4511060E	
0.75	2.7	2,500	7.2	12	4510002K	4510012K	4510022K	4511042K	4510032K
0.75	2.7	7,500	7.2	12		4510012E	4510022E	4511061E	
1	2.8	2,000	9.6	15	4510003K	4510013K	4510023K	4511043K	4510033K
1	2.8	6,000	9.6	15	4510003E	4510013E	4510023E	4511062E	4511063E

Conductor cross-section (mm ²)	Outer diameter (mm)	m/box	Copper index (kg/km)	Weight (kg/km)	yellow	green	violet	Pink	orange
0.5	2.5	3,000	4.8	9	4511066K	4511067K	4511068K	4511069K	4511070K
0.5	2.5	9,000	4.8	9					4510091E
0.75	2.7	2,500	7.2	12	4510112K	4510122K	4510072K	4510082K	4510092K
0.75	2.7	7,500	7.2	12					4510092E
1	2.8	2,000	9.6	15	4510113K	4510123K	4510073K	4510083K	4510093K
1	2.8	6,000	9.6	15					4510093E

Conductor cross-section (mm ²)	Outer diameter (mm)	m/box	Copper index (kg/km)	Weight (kg/km)	red	white	grey	Dark blue/white	blue/white
0.5	2.5	3,000	4.8	9	4511071K	4511072K	4511073K		
0.5	2.5	9,000	4.8	9	4510041E				
0.75	2.7	2,500	7.2	12	4510042K	4510052K	4510062K	4510922K	4510262K
0.75	2.7	7,500	7.2	12	4510042E		4510062E		
1	2.8	2,000	9.6	15	4510043K	4510053K	4510063K	4510923K	4510263K
1	2.8	6,000	9.6	15	4510043E	4510053E	4510063E		

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- H05V-K refer to page 196
- H07V-K refer to page 198

Accessories

- DIN-assorted boxes conductor end sleeves refer to page 913
- EASY STRIP 2 stripping and cutting tool refer to page 905
- BULLI cable shears refer to page 903
- PEW 8.87 crimping pliers refer to page 916

H07V-K in big one-way cardboard box

Harmonised, flexible single conductor for protected, fixed installation

H07V-K in big one-way cardboard box



Benefits

- Higher cost-effectiveness due to optimum processing volumes
- Single cores are embossed so that an additional, subsequent marking by ink jet printing is readable
- The comparatively low weight of the cardboard boxes makes handling easy
- Type-compliant versions <HAR>-certified with "CE" testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area

Application range

- Ideal for assembling to achieve longer operating times and trouble-free printing
- Suitable for assembling cable harnesses and wiring during switch cabinet installation

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Based on PVC



Info

- Efficient
- Harmonised (HAR)

Technical data



Approvals
HD 21/VDE 0281



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5



Minimum bending radius
At a cable temperature of 20 °C ± 10 °C, according to HD 516
4 x outer diameter (OD) for normal use; 2 x OD for cautious bending



Nominal voltage
U₀/U = 450/750 V AC



Test voltage
2500 V AC



Current rating
VDE 0298 Part 4
HD 516/VDE 0298-300



Temperature range
Fixed installation:
-30°C to +80°C

Conductor cross-section (mm ²)	Outer diameter (mm)	m/box	Copper index (kg/km)	Weight (kg/km)	Green/yellow	black	blue	Dark blue	brown
1.5	3.4	1,500	14.4	22	4520001K	4520011K	4520021K	4520141K	4520031K
1.5	3.4	4,000	14.4	22	4520001E	4520011E	4520021E	4520141E	4520031E
2.5	4.1	2,500	24.0	37	4520002E	4520012E	4520022E		
2.5	4.1	900	24.0	37	4520002K	4520012K	4520022K	4520142K	4520032K
4	4.8	2,000	38.4	45	4520003E	4520013E	4520023E		
4	4.8	600	38.4	45	4520003K	4520013K	4520023K	4520143K	4520033K
6	5.3	1,500	57.6	71	4520004E	4520014E	4520024E		
6	5.3	400	57.6	71	4520004K	4520014K	4520024K		4520034K

Conductor cross-section (mm ²)	Outer diameter (mm)	m/box	Copper index (kg/km)	Weight (kg/km)	yellow	green	violet	Pink	orange
1.5	3.4	1,500	14.4	22	4520111K		4520071K	4520081K	4520091K
1.5	3.4	4,000	14.4	22					4520091E
2.5	4.1	2,500	24.0	37					4520092E
2.5	4.1	900	24.0	37	4520112K	4520122K	4520072K		4520092K
4	4.8	600	38.4	45	4520113K		4520073K		4520093K
6	5.3	1,500	57.6	71			4520074E		
6	5.3	400	57.6	71		4520124K	4520074K		4520094K

Conductor cross-section (mm ²)	Outer diameter (mm)	m/box	Copper index (kg/km)	Weight (kg/km)	red	white	grey	Dark blue/white	blue/white
1.5	3.4	1,500	14.4	22	4520041K	4520051K	4520061K		4520261K
1.5	3.4	4,000	14.4	22	4520041E	4520051E	4520061E		
2.5	4.1	2,500	24.0	37	4520042E		4520062E		
2.5	4.1	900	24.0	37	4520042K	4520052K	4520062K	4520922K	
4	4.8	600	38.4	45	4520043K	4520053K	4520063K		
6	5.3	1,500	57.6	71	4520044E				
6	5.3	400	57.6	71	4520044K	4520054K	4520064K		4520264K

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- H05V-K refer to page 196
- H07V-K refer to page 198

Accessories

- DIN-assorted boxes conductor end sleeves refer to page 913
- EASY STRIP 2 stripping and cutting tool refer to page 905
- BULLI cable shears refer to page 903
- PEW 8.87 crimping pliers refer to page 916

Multi-Standard SC 1

UL-recognised (AWM) + CSA AWM I A/B + <HAR> H05V-K, tinned-copper strands



Info

- Formerly: Multi-Standard single core UL-CSA-HAR 1007/1569



Multi-Standard SC 1



Benefits

- For use in the most important global markets
- Reduction in technical documentation
- Easy storage
- Increases the cost-effectiveness of the production process
- <HAR> type-compliant versions <HAR>-certified with "<HAR>" testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area; separate testing mark: by UL for design certification according to the UL standard UL AWM (according to UL 758) and by the CSA for design certification according to the CSA standard CSA AWM I A/B (according to C22.2 No. 210-05)

Application range

- Factory wiring
- Internal wiring of devices
- Control cabinet wiring

Product features

- Flame-retardant according to IEC 60332.1.2
- Flame-retardant according to UL VW1/CSA FT1
- Oil-resistant

Approvals



- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

Design

- Fine-wire strand made of tinned-copper wires
- Special PVC-based core insulation
- No outer sheath, no nylon jacket, no outer wrapping

Technical data



Approvals
H05V-K: HD 21/VDE 0281;
UL AWM (according to UL 758) Styles 1007, 1569 (UL AWM file number of U.I. Lapp GmbH: E63634);
CSA AWM I A/B (according to C22.2 No. 210-05)



Specific insulation resistance
> 10 GOhm x cm



Conductor stranding
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5



Minimum bending radius
4 x outer diameter (OD) for normal use; 2 x OD for cautious bending



Nominal voltage
HAR / IEC: U₀/U: 300/500 V;
UL (AWM): U: 300 V;
CSA (AWM I A/B): U: 300 V



Test voltage
2000 V



Temperature range
Fixed installation:
HAR/IEC: -40 °C to +70 °C;
UL (AWM): -40 °C to +105 °C;
CSA (AWM I A/B): -40 °C to +105 °C

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	Green/yellow	black	blue
0.5	2.5	100	4.8	9	4180400	4180401	4180402
0.75	2.6	100	7.2	12	4180500	4180501	4180502
1	2.8	100	9.6	15	4180600	4180601	4180602

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	Dark blue	brown	yellow
0.5	2.5	100	4.8	9	4180414	4180403	4180410
0.75	2.6	100	7.2	12	4180514	4180503	4180510
1	2.8	100	9.6	15	4180614	4180603	4180610

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	green	violet	orange
0.5	2.5	100	4.8	9		4180407	4180409
0.75	2.6	100	7.2	12		4180507	
0.75	2.6	100	7.2	12			4180509
1	2.8	100	9.6	15	4180611	4180607	4180609

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	red	white	grey
0.5	2.5	100	4.8	9	4180404	4180405	4180406
0.75	2.6	100	7.2	12	4180504	4180505	4180506
1	2.8	100	9.6	15	4180604	4180605	4180606

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- H05V-K refer to page 196
- Multi-Standard SC 2.1 refer to page 204

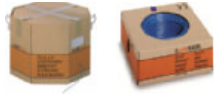
Accessories

- DIN-assorted boxes conductor end sleeves refer to page 913
- EASY STRIP 2 stripping and cutting tool refer to page 905
- PEW 8.87 crimping pliers refer to page 916
- FLEXIMARK® Collar Snap-on refer to page 856

Multi-Standard SC 2.1

USA: UL-listed (MTW), Canada: CSA (TEW), Europe: <HAR> H07V-K (depending on cross s.), tin-plated strands

Multi-Standard SC 2.1



Benefits

- For use in the most important global markets
- Reduction in technical documentation
- Easier storage; increases the cost-effectiveness of the production process
- Works with "Conductor end sleeves XL, insulated"
- <HAR> H07V-K type-compliant versions (not 0.5 mm², 0.75 mm² or 1 mm² according to HD 21.3/VDE 0281-3; not 16 mm² according to internal technical specification at Lapp; no two-tone core insulation except green-yellow according to HD 21.1/VDE 0281-1) <HAR>-certified with "<HAR>" testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area; separate testing mark: by UL for design certifications according to the UL standards UL AWM (according to UL 758) and (UL) MTW (according to UL 1063) and by the CSA for design certification according to the CSA standard CSA TEW (according to C22.2 No. 127)

Application range

- Factory wiring
- Field wiring
- Internal wiring of devices
- Control cabinet wiring

Product features

- Flame-retardant according to IEC 60332.1.2
- Flame-retardant according to UL VW1/CSA FT1
- Oil-resistant

Approvals



- Compliant with NFPA 79 Edition 2007
- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.
- Detailed information about the approvals can be found in the "Technical data" box

Design

- Fine-wire strand made of tinned-copper wires
- Special PVC-based core insulation
- No outer sheath, no nylon jacket, no outer wrapping



Info

- The all-rounder for many markets

Technical data



Approvals

H07V-K: HD 21/VDE 0281;
UL AWM (according to UL 758) Style 1015 (UL AWM file number of U.I. Lapp GmbH: E63634); (UL) MTW (according to UL 1063) ((UL) MTW file number of U.I. Lapp GmbH: E198296); CSA TEW (according to C22.2 No. 127)



Specific insulation resistance

> 10 GOhm x cm



Conductor stranding

Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5



Minimum bending radius

OD ≤ 8 mm: 4 x OD*/2 x OD**;
8 < OD ≤ 12 mm: 5 x OD*/3 x OD**;
OD > 12 mm: 6 x OD*/4 x OD**



Nominal voltage

HAR / IEC: U₀/U: 450/750 V;
UL (AWM): U: 600 V;
UL (MTW): U: 600 V;
CSA (TEW): U: 600 V



Test voltage

2500 V



Temperature range

Fixed installation:
HAR/IEC: -40°C to +70°C;
UL (AWM): -40°C to +105°C;
UL (MTW): -40°C to +90°C;
CSA (TEW): -40°C to +105°C

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	Green/yellow	black
0.5	2.7	100		4.8	10	4160100	4160101
0.75	2.9	100		7.2	13	4160200	4160201
1	3.1	100		9.6	16	4160300	4160301
1.5	3.4	100		14.4	22	4160400	4160401
2.5	4.0	100		24.0	37	4160500	4160501
4	4.6	100		38.4	45	4160600	4160601
6	5.1	100		58.0	71	4160700	4160701
10	6.8	100		96.0	120	4160800	4160801
16	9.0	100		154.0	187	4160900	4160901
25	10.2	100		240.0	290	4161000	4161001
35	11.7			336.0	399	4161100	4161101
50	13.9			480.0	559	4161200	4161201
70	16.0			672.0	776	4161300	4161301
95	18.2			912.0	1031	4161400	4161401
120	19.8			1,152.0	1285	4161500	4161501
0.5	2.7		3,000	4.8	10		4160101K
0.75	2.9		2,500	7.2	13	4160200K	4160201K
1	3.1		2,000	9.6	16	4160300K	4160301K
1.5	3.4		1,500	14.4	22	4160400K	4160401K
2.5	4.0		900	24.0	37	4160500K	4160501K
4	4.6		600	38.4	45	4160600K	4160601K
6	5.1		400	58.0	71	4160700K	4160701K

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	blue	Dark blue
0.5	2.7	100		4.8	10	4160102	4160114
0.75	2.9	100		7.2	13	4160202	4160214
1	3.1	100		9.6	16	4160302	4160314
1.5	3.4	100		14.4	22	4160402	4160414
2.5	4.0	100		24.0	37	4160502	4160514
4	4.6	100		38.4	45	4160602	4160614
6	5.1	100		58.0	71	4160702	4160714
10	6.8	100		96.0	120	4160802	4160814
16	9.0	100		154.0	187	4160902	4160914
25	10.2	100		240.0	290	4161002	4161014
35	11.7			336.0	399	4161102	
50	13.9			480.0	559	4161202	
70	16.0			672.0	776	4161302	
95	18.2			912.0	1031	4161402	
120	19.8			1,152.0	1285	4161502	
0.5	2.7		3,000	4.8	10	4160102K	4160114K
0.75	2.9		2,500	7.2	13	4160202K	4160214K
1	3.1		2,000	9.6	16	4160302K	4160314K
1.5	3.4		1,500	14.4	22	4160402K	4160414K
2.5	4.0		900	24.0	37	4160502K	4160514K
4	4.6		600	38.4	45	4160602K	4160614K
6	5.1		400	58.0	71	4160702K	4160714K

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	brown	yellow
0.5	2.7	100		4.8	10	4160103	4160110
0.75	2.9	100		7.2	13	4160203	4160210
1	3.1	100		9.6	16	4160303	4160310
1.5	3.4	100		14.4	22	4160403	4160410
2.5	4.0	100		24.0	37	4160503	4160510
4	4.6	100		38.4	45	4160603	4160610
6	5.1	100		58.0	71	4160703	4160710
10	6.8	100		96.0	120	4160803	4160810
16	9.0	100		154.0	187	4160903	4160910
25	10.2	100		240.0	290	4161003	4161010
35	11.7			336.0	399		4161110
50	13.9			480.0	559		4161210
70	16.0			672.0	776		4161310
0.5	2.7		3,000	4.8	10	4160103K	
0.75	2.9		2,500	7.2	13	4160203K	
1	3.1		2,000	9.6	16	4160303K	
1.5	3.4		1,500	14.4	22	4160403K	4160410K
2.5	4.0		900	24.0	37	4160503K	4160510K
4	4.6		600	38.4	45	4160603K	

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	green	violet
0.5	2.7	100		4.8	10	4160111	4160107
0.75	2.9	100		7.2	13	4160211	4160207
1	3.1	100		9.6	16	4160311	4160307
1.5	3.4	100		14.4	22	4160411	4160407
2.5	4.0	100		24.0	37	4160511	4160507
4	4.6	100		38.4	45	4160611	4160607
6	5.1	100		58.0	71	4160711	4160707
10	6.8	100		96.0	120	4160811	
16	9.0	100		154.0	187	4160911	
25	10.2	100		240.0	290	4161011	
35	11.7			336.0	399	4161111	
50	13.9			480.0	559	4161211	
70	16.0			672.0	776	4161311	
0.5	2.7		3,000	4.8	10	4160111K	4160107K
0.75	2.9		2,500	7.2	13		4160207K
1	3.1		2,000	9.6	16	4160311K	4160307K
1.5	3.4		1,500	14.4	22		4160407K
2.5	4.0		900	24.0	37	4160511K	4160507K

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	Pink	orange
0.5	2.7	100		4.8	10	4160108	4160109
0.75	2.9	100		7.2	13	4160208	4160209
1	3.1	100		9.6	16	4160308	4160309
1.5	3.4	100		14.4	22	4160408	4160409
2.5	4.0	100		24.0	37		4160509
4	4.6	100		38.4	45		4160609
6	5.1	100		58.0	71		4160709
10	6.8	100		96.0	120		4160809
16	9.0	100		154.0	187		4160909
25	10.2	100		240.0	290		4161009
35	11.7			336.0	399		4161109
0.5	2.7		3,000	4.8	10		4160109K
0.75	2.9		2,500	7.2	13		4160209K
1	3.1		2,000	9.6	16		4160309K
1.5	3.4		1,500	14.4	22		4160409K
2.5	4.0		900	24.0	37		4160509K
4	4.6		600	38.4	45		4160609K
6	5.1		400	58.0	71		4160709K

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	red	white
0.5	2.7	100		4.8	10	4160104	4160105
0.75	2.9	100		7.2	13	4160204	4160205
1	3.1	100		9.6	16	4160304	4160305
1.5	3.4	100		14.4	22	4160404	4160405
2.5	4.0	100		24.0	37	4160504	4160505
4	4.6	100		38.4	45	4160604	4160605
6	5.1	100		58.0	71	4160704	4160705
10	6.8	100		96.0	120	4160804	4160805
16	9.0	100		154.0	187	4160904	4160905
25	10.2	100		240.0	290	4161004	4161005
35	11.7			336.0	399	4161104	4161105
120	19.8			1,152.0	1285		4161505
0.5	2.7		3,000	4.8	10	4160104K	4160105K
0.75	2.9		2,500	7.2	13	4160204K	4160205K
1	3.1		2,000	9.6	16	4160304K	4160305K
1.5	3.4		1,500	14.4	22	4160404K	4160405K
2.5	4.0		900	24.0	37	4160504K	4160505K
4	4.6		600	38.4	45	4160604K	
6	5.1		400	58.0	71	4160704K	4160705K

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	grey	blue/white
0.5	2.7	100		4.8	10	4160106	4160126
0.75	2.9	100		7.2	13	4160206	4160226
1	3.1	100		9.6	16	4160306	4160326
1.5	3.4	100		14.4	22	4160406	4160426
2.5	4.0	100		24.0	37	4160506	4160526
4	4.6	100		38.4	45	4160606	4160626
6	5.1	100		58.0	71	4160706	4160726
10	6.8	100		96.0	120	4160806	4160826
16	9.0	100		154.0	187	4160906	
25	10.2	100		240.0	290	4161006	
35	11.7			336.0	399	4161106	
70	16.0			672.0	776	4161306	
95	18.2			912.0	1031	4161406	
0.5	2.7		3,000	4.8	10	4160106K	4160126K
1	3.1		2,000	9.6	16	4160306K	4160326K
1.5	3.4		1,500	14.4	22	4160406K	4160426K

Control Cabinet Single Cores

Harmonised and approved

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	white-blue	white-red
0.5	2.7	100		4.8	10	4160144	
0.75	2.9	100		7.2	13	4160244	
1	3.1	100		9.6	16	4160344	
1.5	3.4	100		14.4	22	4160444	
2.5	4.0	100		24.0	37	4160544	
4	4.6	100		38.4	45	4160644	
6	5.1	100		58.0	71	4160744	
10	6.8	100		96.0	120	4160844	
16	9.0	100		154.0	187	4160944	
0.5	2.7		3,000	4.8	10	4160144K	
0.75	2.9		2,500	7.2	13	4160244K	
1	3.1		2,000	9.6	16	4160344K	
1.5	3.4		1,500	14.4	22	4160444K	
2.5	4.0		900	24.0	37	4160544K	4160546K

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Packaging size: Coil ≤ 30 kg, otherwise drum

Photographs are not to scale and do not represent detailed images of the respective products.

Non-harmonised, nominal cross-sections: 0.5 mm², 0.75 mm², 1 mm², 16 mm²

*for conventional use, **for careful bending; "OD" = outer diameter

Similar products

- H07V-K refer to page 198
- Multi-Standard SC 2.2 refer to page 206

Accessories

- DIN-assorted boxes conductor end sleeves refer to page 913
- Conductor end sleeves XL, insulated refer to page 914
- PEW 8.87 crimping pliers refer to page 916

Multi-Standard SC 2.2

UL-listed (MTW), CSA (TEW), <HAR> H07V2-K: max. +90°C, UL (AWM): Umax = 1 kV, tinned-copper strands



Multi-Standard SC 2.2



Info

- Higher maximum conductor temperature - H07V2-K: +90 °C according to HD 21/VDE 0281
- Higher voltage range according to UL

Benefits

- For use in the most important global markets
- Reduction in technical documentation
- Easier storage; increases the cost-effectiveness of the production process
- Works with "Conductor end sleeves XL, insulated"
- <HAR> H07V2-K type-compliant versions (not 0.5 mm², 0.75 mm² or 1 mm² or nominal conductor cross-sections exceeding 35 mm²/starting at 50 mm² according to HD 21.7/VDE 0281-7; not 16 mm² according to internal technical specification at Lapp; no two-tone core insulation except green-yellow according to HD 21.1/VDE 0281-1) <HAR>-certified with "<HAR>" testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area; separate testing mark: by UL for design certifications according to the UL standards UL AWM (according to UL 758) and (UL) MTW (according to UL 1063) and by the CSA for design certification according to the CSA standard CSA TEW (according to C22.2 No. 127)

Application range

- Factory wiring
- Field wiring
- Frequency converter power supply
- Internal wiring of devices
- Control cabinet wiring

Product features

- Flame-retardant according to IEC 60332.1.2
- Flame-retardant according to UL VW1/CSA FT1
- Oil-resistant

Approvals



- Compliant with NFPA 79 Edition 2007
- Multi-standard cables have conductor strands with nominal sizes in mm² or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.
- Detailed information about the approvals can be found in the "Technical data" box

Design

- Fine-wire strand made of tinned-copper wires
- Special PVC-based core insulation
- No outer sheath, no nylon jacket, no outer wrapping

Technical data



Approvals

H07V2-K: HD 21/VDE 0281; UL AWM (according to UL 758) Style 10269 (UL AWM file number of U.I. Lapp GmbH: E63634); (UL) MTW (according to UL 1063) ((UL) MTW file number of U.I. Lapp GmbH: E198296); CSA TEW (according to C22.2 No. 127)



Specific insulation resistance

> 10 GOhm x cm



Conductor stranding

Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5



Minimum bending radius

OD ≤ 8 mm: 4 x OD* / 2 x OD**; 8 < OD ≤ 12 mm: 5 x OD* / 3 x OD**; OD > 12 mm: 6 x OD* / 4 x OD**



Nominal voltage

HAR / IEC: U₀/U: 450/750 V; UL (AWM): U: 1000 V; UL (MTW): U: 600 V; CSA (TEW): U: 600 V



Test voltage

IEC: 2500 V AC; UL: 4000 V AC



Temperature range

Fixed installation: HAR/IEC: -40°C to +90°C; UL (AWM): -40°C to +105°C; UL (MTW): -40°C to +90°C; CSA (TEW): -40°C to +105°C

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	Green/yellow	black	blue
0.5	2.7	100	4.8	10	4150100	4150101	4150102
0.75	2.9	100	7.2	13	4150200	4150201	4150202
1	3.1	100	9.6	16	4150300	4150301	4150302
1.5	3.4	100	14.4	22	4150400	4150401	4150402
2.5	4.0	100	24.0	37	4150500	4150501	4150502
4	4.6	100	38.4	45	4150600	4150601	4150602
6	5.1	100	58.0	71	4150700	4150701	4150702
10	6.8	100	96.0	120	4150800	4150801	4150802
16	9.0	100	154.0	187	4150900	4150901	4150902
25	10.2	100	240.0	290	4151000	4151001	4151002
35	11.7		336.0	399	4151100	4151101	4151102
50	13.9		480.0	559		4151201	
70	16.0		672.0	776		4151301	
95	18.2		912.0	1031		4151401	
120	19.8		1,152.0	1285	4151500		

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	Dark blue	brown	yellow
0.5	2.7	100	4.8	10	4150114	4150103	
0.75	2.9	100	7.2	13	4150214	4150203	
1	3.1	100	9.6	16		4150303	
1.5	3.4	100	14.4	22	4150414	4150403	4150410
2.5	4.0	100	24.0	37	4150514	4150503	
4	4.6	100	38.4	45	4150614	4150603	4150610
6	5.1	100	58.0	71		4150703	
10	6.8	100	96.0	120		4150803	
25	10.2	100	240.0	290		4151003	
35	11.7		336.0	399		4151103	

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	violet	orange	red
0.5	2.7	100	4.8	10			4150104
0.5	2.7	100	4.8	10		4150109	
0.75	2.9	100	7.2	13		4150209	4150204
1	3.1	100	9.6	16	4150307	4150309	4150304
1.5	3.4	100	14.4	22		4150409	4150404
2.5	4.0	100	24.0	37		4150509	4150504
4	4.6	100	38.4	45		4150609	4150604
6	5.1	100	58.0	71		4150709	4150704
10	6.8	100	96.0	120		4150809	4150804
16	9.0	100	154.0	187		4150909	4150904

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	white	grey	blue/white
0.5	2.7	100	4.8	10	4150105	4150106	
0.75	2.9	100	7.2	13	4150205	4150206	
1	3.1	100	9.6	16	4150305	4150306	4150326
1.5	3.4	100	14.4	22	4150405	4150406	4150426
2.5	4.0	100	24.0	37	4150505	4150506	
4	4.6	100	38.4	45	4150605	4150606	
6	5.1	100	58.0	71	4150705	4150706	
10	6.8	100	96.0	120		4150806	
16	9.0	100	154.0	187		4150906	
35	11.7		336.0	399		4151106	

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	white-blue
1	3.1	100	9.6	16	4150344
1.5	3.4	100	14.4	22	4150444

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Packaging size: Coil ≤ 30 kg, otherwise drum

Photographs are not to scale and do not represent detailed images of the respective products.

Non-harmonised, nominal cross-sections: 0.5 mm², 0.75 mm², 1 mm², 16 mm², 50 mm², 70 mm², 95 mm², 120 mm²

*for conventional use, **for careful bending; "OD" = outer diameter

Similar products

- Multi-Standard SC 2.1 refer to page 204

Accessories

- DIN-assorted boxes conductor end sleeves refer to page 913
- Conductor end sleeves XL, insulated refer to page 914
- EASY STRIP 2 stripping and cutting tool refer to page 905
- PEW 8.87 crimping pliers refer to page 916
- FLEXIMARK® Collar Snap-on refer to page 856

H05Z-K 90°C

Harmonised; halogen-free to protect human life, the environment and material assets

H05Z-K 90°C



Info

- Halogen-free
- Harmonised (HAR)

Benefits

- Protection of human life and the environment thanks to the avoidance of the formation of acid in case of fire
- Type-compliant versions <HAR>-certified with "<HAR>" testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area

Application range

- For wiring of lamps, devices, switchgear cabinets and distribution boxes
- For installation in tubes, on, in and under plaster as well as in closed installation ducts
- In building with a high density of people or valuable assets
- For use in dry rooms

Product features

- The insulation material is halogen-free and free of other materials which could release toxic gases in the event of fire
- Low amount of corrosive gases in the event of fire
- Low smokes/low smoke density in the event of fire according to IEC 61034
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free

Technical data

Approvals
DIN VDE HD 22.9/VDE 0282-9

Conductor stranding
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5

Minimum bending radius
At a cable temperature of 20 °C ± 10 °C, according to HD 516
4 x outer diameter (OD) for normal use; 2 x OD for cautious bending

Nominal voltage
U₀/U: 300/500 V

Test voltage
2000 V AC

Current rating
Amp. VDE 0298-4
HD 516/VDE 0298-300

Temperature range
Fixed installation: -15°C to +90°C

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	Green/yellow	black	blue	Dark blue
0.5	2.6	100		4.8	9	4725001	4725011	4725021	4725141
0.5	2.6		4,000	4.8	9	4725001K	4725011K	4725021K	4725141K
0.75	2.8	100		7.2	11	4725002	4725012	4725022	4725142
0.75	2.8		3,000	7.2	11	4725002K	4725012K	4725022K	4725142K
1	2.9	100		9.6	14	4725003	4725013	4725023	4725143
1	2.9		3,000	9.6	14	4725003K	4725013K	4725023K	4725143K

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	brown	yellow	green	violet
0.5	2.6	100		4.8	9	4725031	4725111	4725121	4725071
0.5	2.6		4,000	4.8	9		4725111K	4725121K	4725071K
0.75	2.8	100		7.2	11	4725032	4725112	4725122	4725072
0.75	2.8		3,000	7.2	11	4725032K	4725112K	4725122K	4725072K
1	2.9	100		9.6	14	4725033	4725113	4725123	4725073
1	2.9		3,000	9.6	14	4725033K	4725113K	4725123K	4725073K

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	Pink	orange	red	white
0.5	2.6	100		4.8	9	4725081	4725091	4725041	4725051
0.5	2.6		4,000	4.8	9	4725081K	4725091K	4725041K	4725051K
0.75	2.8	100		7.2	11	4725082	4725092	4725042	4725052
0.75	2.8		3,000	7.2	11	4725082K	4725092K	4725042K	4725052K
1	2.9	100		9.6	14	4725083	4725093	4725043	4725053
1	2.9		3,000	9.6	14	4725083K	4725093K	4725043K	4725053K

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	grey
0.5	2.6	100		4.8	9	4725061
0.5	2.6		4,000	4.8	9	4725061K
0.75	2.8	100		7.2	11	4725062
0.75	2.8		3,000	7.2	11	4725062K
1	2.9	100		9.6	14	4725063
1	2.9		3,000	9.6	14	4725063K

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Packaging size: Coil ≤ 30 kg, otherwise drum
 Photographs are not to scale and do not represent detailed images of the respective products.
 *for conventional use, **for careful bending; "OD" = outer diameter

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

H07Z-K 90°C

Harmonised; halogen-free to protect human life, the environment and material assets



Info

- Halogen-free
- Harmonised (HAR)



H07Z-K 90°C



Benefits

- Protection of human life and the environment thanks to the avoidance of the formation of acid in case of fire
- Type-compliant versions <HAR>-certified with "<HAR>" testing and certification mark for accelerated granting of approvals if final application of cable is within the European CENELEC area

Application range

- For wiring of lamps, devices, switchgear cabinets and distribution boxes
- For installation in tubes, on, in and under plaster as well as in closed installation ducts
- In building with a high density of people or valuable assets
- For use in dry rooms

Product features

- The insulation material is halogen-free and free of other materials which could release toxic gases in the event of fire
- Low amount of corrosive gases in the event of fire
- Low smokes/low smoke density in the event of fire according to IEC 61034
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free

Technical data

	Approvals HD 22.9/VDE 0282-9
	Conductor stranding Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
	Minimum bending radius At a cable temperature of 20 °C ± 10 °C, according to HD 516 OD ≤ 8 mm: 4 x OD* / 2 x OD** ; 8 < OD ≤ 12 mm: 5 x OD* / 3 x OD** ; OD > 12 mm: 6 x OD* / 4 x OD**
	Nominal voltage U ₀ /U: 450 / 750 V
	Test voltage 2500 V
	Current rating VDE 0298-4 HD 516/VDE 0298-300
	Temperature range Fixed installation: -15°C to +90°C

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	Green/yellow	black	blue	Dark blue
1.5	3.5	100		14.4	20	4726001	4726011	4726021	4726141
1.5	3.5		2,000	14.4	20	4726001K	4726011K	4726021K	4726141K
2.5	4.3	100		24.0	32	4726002	4726012	4726022	4726142
2.5	4.3		1,500	24.0	32	4726002K	4726012K	4726022K	4726142K
4	4.9	100		38.4	45	4726003	4726013	4726023	4726143
4	4.9		1,000	38.4	45	4726003K	4726013K	4726023K	4726143K
6	5.5	100		57.6	65	4726004	4726014	4726024	4726144
6	5.5		750	57.6	65	4726004K	4726014K	4726024K	4726144K
10	7.1	100		96.0	110	4726005	4726015	4726025	4726145
16	8.4	100		153.6	170	4726006	4726016	4726026	4726146
25	10.6	100		240.0	290	4726007	4726017	4726027	4726147
35	12.1			336.0	380	4726008	4726018	4726028	4726148
50	14.4			480.0	530	4726009	4726019	4726029	4726149
70	16.6			672.0	750	4727001	4727011	4727021	4727141
95	18.8			912.0	1000	4727002	4727012	4727022	4727142

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	brown	yellow	green	violet
1.5	3.5	100		14.4	20	4726031	4726111	4726121	4726071
1.5	3.5		2,000	14.4	20	4726031K	4726111K	4726121K	4726071K
2.5	4.3	100		24.0	32	4726032	4726112	4726122	4726072
2.5	4.3		1,500	24.0	32	4726032K	4726112K	4726122K	4726072K
4	4.9	100		38.4	45	4726033	4726113	4726123	4726073
4	4.9		1,000	38.4	45	4726033K	4726113K	4726123K	4726073K
6	5.5	100		57.6	65	4726034	4726114	4726124	4726074
6	5.5		750	57.6	65	4726034K	4726114K	4726124K	4726074K
10	7.1	100		96.0	110	4726035	4726115	4726125	4726075
16	8.4	100		153.6	170	4726036	4726116	4726126	4726076
25	10.6	100		240.0	290	4726037	4726117	4726127	4726077
35	12.1			336.0	380	4726038	4726118	4726128	4726078
50	14.4			480.0	530	4726039	4726119	4726129	4726079
70	16.6			672.0	750	4727031	4727111	4727121	4727071
95	18.8			912.0	1000	4727032	4727112	4727122	4727072

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	Pink	orange	red	white
1.5	3.5	100		14.4	20	4726081	4726091	4726041	4726051
1.5	3.5		2,000	14.4	20	4726081K	4726091K	4726041K	4726051K
2.5	4.3	100		24.0	32	4726082	4726092	4726042	4726052
2.5	4.3		1,500	24.0	32	4726082K	4726092K	4726042K	4726052K
4	4.9	100		38.4	45	4726083	4726093	4726043	4726053
4	4.9		1,000	38.4	45	4726083K	4726093K	4726043K	4726053K
6	5.5	100		57.6	65	4726084	4726094	4726044	4726054
6	5.5		750	57.6	65	4726084K	4726094K	4726044K	4726054K
10	7.1	100		96.0	110	4726085	4726095	4726045	4726055
16	8.4	100		153.6	170	4726086	4726096	4726046	4726056
25	10.6	100		240.0	290	4726087	4726097	4726047	4726057
35	12.1			336.0	380	4726088	4726098	4726048	4726058
50	14.4			480.0	530	4726089	4726099	4726049	4726059
70	16.6			672.0	750	4727081	4727091	4727041	4727051
95	18.8			912.0	1000	4727082	4727092	4727042	4727052

Control Cabinet Single Cores

Halogen free

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	m/box	Copper index (kg/km)	Weight (kg/km)	grey
1.5	3.5	100		14.4	20	4726061
1.5	3.5		2,000	14.4	20	4726061K
2.5	4.3	100		24.0	32	4726062
2.5	4.3		1,500	24.0	32	4726062K
4	4.9	100		38.4	45	4726063
4	4.9		1,000	38.4	45	4726063K
6	5.5	100		57.6	65	4726064
6	5.5		750	57.6	65	4726064K
10	7.1	100		96.0	110	4726065
16	8.4	100		153.6	170	4726066
25	10.6	100		240.0	290	4726067
35	12.1			336.0	380	4726068
50	14.4			480.0	530	4726069
70	16.6			672.0	750	4727061
95	18.8			912.0	1000	4727062

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Packaging size: Coil ≤ 30 kg, otherwise drum
 Photographs are not to scale and do not represent detailed images of the respective products.
 *for conventional use, **for careful bending; "OD" = outer diameter

X05Z-K 110°C

Halogen-free to protect human life, the environment and valuable assets; high temperature resistance



Info

- Formerly: H05Z-K 110°C
- Halogen-free
- Maximum conductor temperature: +110 °C

Benefits

- Protection of human life and the environment thanks to the avoidance of the formation of acid in case of fire

Application range

- For wiring of lamps, devices, switchgear cabinets and distribution boxes
- For installation in tubes, on, in and under plaster as well as in closed installation ducts
- In building with a high density of people or valuable assets
- For use in dry rooms

Product features

- The insulation material is halogen-free and free of other materials which could release toxic gases in the event of fire

- Low amount of corrosive gases in the event of fire
- Low smokes/low smoke density in the event of fire according to IEC 61034
- Flame-retardant according to IEC 60332.1.2
- Bundled fire test (fire propagation) according to IEC 60332-3-24/EN 50266-2-4/EN 60332-3-24/VDE 0482-266-2-4/VDE 0482-332-3-24 (category C)

Approvals



- 110°C version is not harmonised (no HAR sign), but is VDE-tested and VDE-marked

Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free

Technical data

DIN VDE Based on HD 22.9/VDE 0282-9

Conductor stranding
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5

Minimum bending radius
4 x outer diameter (OD) for normal use; 2 x OD for cautious bending

Nominal voltage
U₀/U: 300/500 V

Test voltage
2000 V AC

Current rating
VDE 0298-4
HD 516/VDE 0298-300

Temperature range
Fixed installation: -40°C to +110°C

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	Green/yellow	black	blue	Dark blue
0.5	2.6	100	4.8	9	4710001	4710011	4710021	4710141
0.75	2.8	100	7.2	11	4710002	4710012	4710022	4710142
1	2.9	100	9.6	14	4710003	4710013	4710023	4710143

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	brown	yellow	green	violet
0.5	2.6	100	4.8	9	4710031	4710111	4710121	4710071
0.75	2.8	100	7.2	11	4710032	4710112	4710122	4710072
1	2.9	100	9.6	14	4710033	4710113	4710123	4710073

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	Pink	orange	red	white
0.5	2.6	100	4.8	9	4710081	4710091	4710041	4710051
0.75	2.8	100	7.2	11	4710082	4710092	4710042	4710052
1	2.9	100	9.6	14	4710083	4710093	4710043	4710053

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	grey
0.5	2.6	100	4.8	9	4710061
0.75	2.8	100	7.2	11	4710062
1	2.9	100	9.6	14	4710063

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Packaging size: Coil ≤ 30 kg, otherwise drum
 Photographs are not to scale and do not represent detailed images of the respective products.
 *for conventional use, **for careful bending; "OD" = outer diameter

X07Z-K 110°C

Halogen-free to protect human life, the environment and valuable assets; high temperature resistance



Info

- Formerly: H07Z-K 110°C
- Halogen-free
- Maximum conductor temperature: +110 °C



Benefits

- Protection of human life and the environment thanks to the avoidance of the formation of acid in case of fire

Application range

- For wiring of lamps, devices, switchgear cabinets and distribution boxes
- For installation in tubes, on, in and under plaster as well as in closed installation ducts
- In building with a high density of people or valuable assets
- For use in dry rooms

Product features

- The insulation material is halogen-free and free of other materials which could release toxic gases in the event of fire

- Low amount of corrosive gases in the event of fire
- Low smokes/low smoke density in the event of fire according to IEC 61034
- Flame-retardant according to IEC 60332.1.2
- Bundled fire test (fire propagation) according to IEC 60332-3-24/EN 50266-2-4/EN 60332-3-24/VDE 0482-266-2-4/VDE 0482-332-3-24 (category C)

Approvals



- 110°C version is not harmonised (no HAR sign), but is VDE-tested and VDE-marked

Design

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free

Technical data

- DIN VDE** Based on HD 22.9/VDE 0282-9
- Conductor stranding** Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius** OD ≤ 8 mm: 4 x OD*/2 x OD** ; 8 < OD ≤ 12 mm: 5 x OD*/3 x OD** ; OD > 12 mm: 6 x OD*/4 x OD**
- Nominal voltage** U₀/U: 450/750 V
- Test voltage** 2500 V AC
- Current rating** VDE 0298-4 HD 516/VDE 0298-300
- Temperature range** Fixed installation: -40°C to +110°C

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	Green/yellow	black	blue	Dark blue
1.5	3.5	100	14.4	20	4720001	4720011	4720021	4720141
2.5	4.3	100	24.0	30	4720002	4720012	4720022	4720142
4	4.9	100	38.4	45	4720003	4720013	4720023	4720143
6	5.5	100	58.0	65	4720004	4720014	4720024	4720144
10	7.1	100	96.0	110	4720005	4720015	4720025	4720145
16	8.4	100	154.0	170	4720006	4720016	4720026	4720146
25	10.6	100	240.0	290	4720007	4720017	4720027	
35	12.1		336.0	400	4720008	4720018	4720028	
50	14.4		480.0	550	4720009	4720019		
70	16.6		672.0	770	4721001	4721011		
95	18.8		912.0	1160		4721012		

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	brown	yellow	green	violet
1.5	3.5	100	14.4	20	4720031	4720111	4720121	4720071
2.5	4.3	100	24.0	30	4720032	4720112	4720122	4720072
4	4.9	100	38.4	45	4720033		4720123	4720073
6	5.5	100	58.0	65	4720034	4720114	4720124	
10	7.1	100	96.0	110	4720035			
16	8.4	100	154.0	170	4720036			

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	Pink	orange	red	white
1.5	3.5	100	14.4	20	4720081	4720091	4720041	4720051
2.5	4.3	100	24.0	30	4720082	4720092	4720042	4720052
4	4.9	100	38.4	45	4720083	4720093	4720043	4720053
6	5.5	100	58.0	65	4720084	4720094	4720044	4720054
10	7.1	100	96.0	110	4720085	4720095	4720045	4720055
16	8.4	100	154.0	170	4720086	4720096	4720046	4720056
25	10.6	100	240.0	290	4720087	4720097	4720047	
35	12.1		336.0	400	4720088	4720098	4720048	
50	14.4		480.0	550	4720089	4720099		
70	16.6		672.0	770	4721081	4721091		
95	18.8		912.0	1160	4721082	4721092		

Conductor cross-section (mm ²)	Outer diameter (mm)	m/coil	Copper index (kg/km)	Weight (kg/km)	grey
1.5	3.5	100	14.4	20	4720061
2.5	4.3	100	24.0	30	4720062
4	4.9	100	38.4	45	4720063
6	5.5	100	58.0	65	4720064
10	7.1	100	96.0	110	4720065
16	8.4	100	154.0	170	4720066

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Packaging size: Coil ≤ 30 kg, otherwise drum
 Photographs are not to scale and do not represent detailed images of the respective products.
 *for conventional use, **for careful bending; *OD* = outer diameter

LiYCY

Screened, PVC-based wiring single core



Benefits

- Prevention of electromagnetic interference to other components

Application range

- Wiring of measuring instruments, switch cabinets, electrical components, transmitters and receivers
- In EMC-sensitive environments

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Strands of tinned-copper wires
- Core insulation: Based on PVC
- Tinned-copper braiding
- PVC-based outer sheath, transparent

Technical data

- Peak operating voltage**
350 V (not for power transmission)
- Based on**
VDE 0812
- Specific insulation resistance**
10 GOhm x cm
- Test voltage**
800 V
- Temperature range**
Occasional flexing: -5 °C to +70 °C
Fixed installation:
-30 °C to +80 °C

Article number	Conductor cross-section (mm ²)	Number of wires x wire-Ø (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
4530101	0.14	18 x 0.10	2.6	7.0	13
4530102	0.25	14 x 0.15	3.1	9.0	18
4530103	0.5	16 x 0.20	3.4	15.0	20
4530104	0.75	24 x 0.20	3.7	18.0	31
4530105	1	32 x 0.20	4.5	25.0	35.92
4530106	1.5	30 x 0.25	4.9	30.0	39
4530107	2.5	50 x 0.25	5.8	35.0	55.3

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil
Photographs are not to scale and do not represent detailed images of the respective products.

Li2YCY

Low-capacitance, screened wiring single-core with PVC-based outer sheath



Benefits

- Prevention of electromagnetic interference to other components

Application range

- Wiring of measuring instruments, switch cabinets, electrical components, transmitters and receivers
- In EMC-sensitive environments

Product features

- Flame-retardant according to IEC 60332.1.2
- Low cable capacitance, short signal transmission time

Approvals



Design

- Strands of tinned-copper wires
- Core insulation: PE
- Wrapped screening made from tinned copper wire
- PVC-based outer sheath, transparent

Technical data

- Peak operating voltage**
500 V (not for power applications)
- Based on**
VDE 0812
- Specific insulation resistance**
2 GOhm x cm
- Test voltage**
1200 V
- Temperature range**
Occasional flexing: -5 °C to +70 °C
Fixed installation:
-30 °C to +80 °C

Article number	Conductor cross-section (mm ²)	Number of wires x wire-Ø (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
4550115	0.14	18 x 0.10	2.1	7.0	10
4550116	0.25	14 x 0.15	2.3	9.0	15
4550117	0.5	16 x 0.20	2.9	15.0	19.5
4550118	0.75	24 x 0.20	3.1	18.0	28
4550119	1	32 x 0.20	3.3	25.0	30

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil
Photographs are not to scale and do not represent detailed images of the respective products.

Li5YC5Y

Single core, silvered copper braid + screen, advanced chemical and temperature resistance (PTFE)

Benefits

- Prevention of electromagnetic interference to other components

Application range

- Wiring of measuring instruments, switch cabinets, electrical components, transmitters and receivers
- In EMC-sensitive environments

Product features

- Flame-retardant according to IEC 60332.1.2
- High chemical resistance
- High temperature resistance

Approvals



Design

- Strands of silver-plated copper wires
- PTFE core insulation
- Screening: wrapped with braided silver-plated, soft-annealed copper wires
- PTFE outer sheath, white

Technical data



Peak operating voltage
600 V (not for power applications)



Based on
VDE 0881



Specific insulation resistance
20 GOhm x cm



Test voltage
1200 V



Temperature range
Fixed installation: -190°C to +260°C

Article number	Conductor cross-section AWG	Number of wires x wire-Ø (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
4550120	24 / AWG 24 (7)	7 x 0.20	2.3	9.6	11
4550114	20 / AWG 20 (19)	19 x 0.20	2.7	14.9	22.2

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® STATIC CY black

Closely screened, doubly insulated PVC single core for fixed installation



Info

- An alternative to single-core NYY with overall braiding used as EMC-relevant screening
- EMC-optimised

Benefits

- Cost-effective, double-insulated/sheathed single-core cable for fixed, unprotected installation indoors or outdoors, at most occasional flexing taking into account the higher minimum bending radii of 12.5 x outer cable diameter
- High degree of screening enables a very good EMC performance
- No additional protection such as a closed cable duct or protective conduit is required for installation

Application range

- Very suitable for power circuits as an external connection or for the internal wirings in electric and electronic equipment
- In dry or damp interiors with low mechanical stress conditions
- Can be used indoors as a connecting cable to the inverter in the photovoltaic sector
- Outdoor use is possible within the indicated operating temperature range

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation: Based on PVC
- Non-woven wrapping
- Tinned-copper braiding
- PVC-based outer sheath

Technical data

- Specific insulation resistance**
> 20 GΩm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
Fixed installation: 6 x outer diameter
Occasional flexing: 12.5 x outer diameter
- Nominal voltage**
U_c/U: 600/1000 V
- Test voltage**
Core/screen: 2000 V
- Temperature range**
Fixed installation: -40 °C to +80 °C
Occasional flexing: -30 °C to +70 °C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
4600023	16	10.3	177.0	275
4600024	25	12.7	267.0	396
4600025	35	14.3	384.0	542
4600026	50	16.9	537.0	752
4600027	70	18.7	763.0	1004
4600028	95	21.7	1,012.0	1368
4600029	120	24.7	1,264.0	1719

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: Coil ≤ 30 kg, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- KS 20 cable shears refer to page 904

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

NYM-J

Standard cable for plaster, brickwork and immovable concrete



Info

- **Standard cable for plaster and brickwork**

Application range

- For installation on or under the plaster
- In bricks and concrete, except direct embedding in vibrated or compressed concrete
- In dry, damp or wet interiors
- Also suitable for outdoor use if protected against direct sunlight

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Strands of bare copper wires
- Core insulation: Based on PVC
- Filling compound over the core assembly
- PVC-based outer sheath

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Approvals**
VDE 0250 Part 204
- Conductor stranding**
Single or multi-wire
- Minimum bending radius**
Fixed installation: 4 x outer diameter
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
2000 V
- Protective conductor**
“-J” in NYM-J/Dimension with “G”: With protection earth PE conductor
“-O” in NYM-O/Dimension with “X”: No protection earth PE conductor
- Temperature range**
During installation: +5°C to +60°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1600008	1 G 2.5	6.0	24.0	60
1600009	1 G 4	6.7	38.0	85
1600010	1 G 6	7.2	58.0	105
1600011	1 G 10	8.6	96.0	160
1600012	1 G 16	9.6	154.0	220
16000003	3 G 1.5	8.4	43.0	120
16000013	4 G 1.5	9.2	58.0	150
16000023	5 G 1.5	9.9	72.0	175
1600003	7 G 1.5	11.6	101.0	235
16000213	3 G 2.5	9.6	72.0	170
16000053	4 G 2.5	10.6	96.0	210
16000063	5 G 2.5	11.5	120.0	290
1600071	7 G 2.5	13.7	168.0	380
16010223	3 G 4	11.3	115.0	250
16000313	4 G 4	12.7	154.0	315
16000513	5 G 4	14.0	192.0	370
16010233	3 G 6	12.8	173.0	335
16000323	4 G 6	13.8	230.0	410
16000523	5 G 6	15.5	288.0	500
16000333	4 G 10	18.0	384.0	680
16000533	5 G 10	19.5	480.0	810
16000543	5 G 16	23.0	768.0	1200
16000353	4 G 25	26.0	960.0	1500
16000553	5 G 25	28.0	1,200.0	1800

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- NYY-J, NYY-O refer to page 217
- (N)HXMH refer to page 216

Accessories

- STAR STRIP stripping tool refer to page 906
- KS 20 cable shears refer to page 904

(N)HXMH

Halogen-free; for plaster, bricks, concrete; at high density of people and valuable assets



Info

- Halogen-free alternative to the PVC installation cable NYM

Application range

- For installation on or under the plaster
- In bricks and concrete, except direct embedding in vibrated or compressed concrete
- In dry, damp or wet interiors
- For buildings or industrial plants with a high density of people or valuable assets

Product features

- Due to the use of halogen-free materials, the formation of toxic dioxins and furanes is considerably reduced in the event of a fire
- Minimizes damages to buildings and equipments that are caused by acidic fumes produced during combustion
- Flame-retardant according to IEC 60332.1.2
- No flame-propagation according to IEC 60332-3-24

Approvals



Design

- Strands of bare copper wires
- Core insulation: PE
- Filling compound over the core assembly
- Outer sheath: halogen-free polymer

Technical data



Core identification code
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers



Based on
VDE 0250 Part 214



Conductor stranding
Single or multi-wire



Minimum bending radius
Fixed installation: 4 x outer diameter



Nominal voltage
U₀/U: 300/500 V



Test voltage
2000 V



Protective conductor
G = with GN-YE protective conductor
X = without protective conductor



Temperature range
Maximum conductor temperature: +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
16020003	3 G 1.5	8.5	43.2	120
16020013	4 G 1.5	9.3	58.0	145
16020023	5 G 1.5	10.0	72.0	170
1602003	7 G 1.5	10.8	101.0	210
16020103	3 G 2.5	9.4	72.0	160
16020123	5 G 2.5	11.0	120.0	230

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- NYM-J refer to page 215
- ÖLFLEX® CLASSIC 130 H refer to page 57

Accessories

- STAR STRIP stripping tool refer to page 906

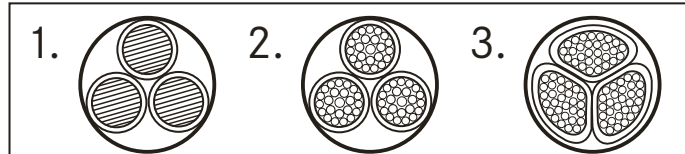
NYY-J, NYO

Fixed installation, direct burial; PVC cable with different application areas



Info

- 1. re = round conductor, single-wire;
- 2. rm = round conductor, multi-wire;
- 3. sm = sector-shaped conductor



Application range

- Power and control cable for fixed installation in the following applications:
- For indoor and outdoor use
- Burial without additional, suitable underground protection according to VDE standard HD 603/VDE 0276-603 - Part 3-G (point 4) governing PVC cables for direct burial: normal minimum installation depth 0.6 m, but at least 0.8 m under roads
- In concrete with a temperature below the maximum cable operating temperature of +70 °C according to the VDE standard HD 603/VDE 0276-603 - Part 3-G (point 4) governing PVC cables for direct burial
- In water: no longer than 2 weeks at a time, maximum submersion depth 10 metres, only in static water/bodies of water without shipping traffic

Product features

- Flame-retardant according to IEC 60332.1.2
- Current rating according to HD 603/VDE 0276-603, Part 3-G, Table 14 (buried at +20 °C ground temperature according to HD 603/VDE 0276-603, Part 3-G, point 5) for routing underground and Table 15 (in the air at an air temperature of +30 °C according to HD 603/VDE 0276-603, Part 3-G, point 5) when used outdoors; but always taking into consideration corrections/reductions to the current rating that may be necessary according to VDE 0298-4, and VDE 0298-4 (also refer to the catalogue appendix T 12) for installation in and on buildings

Approvals



Design

- Bare copper wire conductor
- Abbreviations “re”, “rm”, “se”, “sm”: r = round conductor form; s = sectorial conductor form; e = single-wire conductor (wire = conductor)/braided conductor class 1 according to IEC 60228/VDE 0295 for fixed, static applications; m = multi-wire conductor/braided conductor class 2 according to IEC 60228/VDE 0295 for fixed, static applications, but with a slightly lower minimum bending factor
- Core insulation: Based on PVC
- Filling compound over the core assembly
- PVC-based outer sheath

Technical data

	Core identification code Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9 From 6 cores: black with white numbers
	Approvals HD 603/VDE 0276-603 (for 1 to 5 cores) HD 627/VDE 0276-627 (as from 7 cores)
	Conductor stranding Single or multi-wire
	Minimum bending radius Single-core: 15 x outer diameter Multi-core: 12 x outer diameter
	Nominal voltage U ₀ /U: 0.6/1.0 kV
	Test voltage 4000 V
	Temperature range During installation: -5 °C to +50 °C Fixed installation: -40 °C to +70 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
NYO				
1550030	1 x 25rm	13.0	240.0	380
1550038	1 x 35rm	14.0	336.0	447
1550032	1 x 50rm	15.0	480.0	650
1550033	1 x 70rm	17.0	672.0	864
1550037	1 x 185rm	26.0	1,776.0	2000
15500013	3 x 1,5re	12.0	43.0	223
15500023	4 x 1,5re	13.0	58.0	256
15500033	5 x 1,5re	14.0	72.0	293
1550004	7 x 1,5re	15.0	101.0	360
1550005	10 x 1,5re	18.0	144.0	520
1550006	12 x 1,5re	19.0	173.0	560
1550084	14 x 1,5re	20.0	202.0	620
1550007	16 x 1,5re	21.0	230.0	680
1550008	19 x 1,5re	22.0	274.0	760
1550009	24 x 1,5re	24.0	346.0	900
1550086	30 x 1,5re	26.0	432.0	1100
15500103	3 x 2,5re	13.0	72.0	272
15500113	4 x 2,5re	14.0	96.0	316
15500123	5 x 2,5re	15.0	120.0	323
1550013	7 x 2,5re	16.0	168.0	450
1550090	10 x 2,5re	20.0	240.0	630
1550091	12 x 2,5re	20.0	288.0	680
1550092	14 x 2,5re	21.0	336.0	790
1550094	19 x 2,5re	23.0	456.0	990

Building Installation

Cables for direct burial

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1550096	24 x 2,5re	26.0	576.0	1300
1550097	30 x 2,5re	28.0	720.0	1400
15500583	3 x 4re	15.0	115.0	373
15500203	4 x 4re	16.0	154.0	439
15500263	5 x 4re	17.0	192.0	510
15500593	3 x 6re	16.0	173.0	466
15500213	4 x 6re	17.0	230.0	547
15500273	5 x 6re	19.0	288.0	640
15500603	3 x 10re	18.0	288.0	629
15500223	4 x 10re	19.0	384.0	743
15500823	5 x 10re	21.0	480.0	899
15500613	3 x 16re	20.0	461.0	850
15500233	4 x 16re	22.0	614.0	1039
15500833	5 x 16re	23.0	768.0	1240
15500713	3 x 25rm/16re	25.0	874.0	1595
15500243	4 x 25rm	27.0	960.0	1620
15500153	3 x 35sm/16re	27.0	1,162.0	1718
15500753	4 x 35sm	27.0	1,344.0	1916
15500163	3 x 50sm/25rm	31.0	1,680.0	2383
15500253	4 x 50sm	31.0	1,920.0	2639
15500173	3 x 70sm/35sm	33.0	2,352.0	3196
15500763	4 x 70sm	35.0	2,688.0	3576
15500183	3 x 95sm/50sm	38.0	3,216.0	4271
15500773	4 x 95sm	40.0	3,648.0	4746
15500723	3 x 120sm/70sm	41.0	4,128.0	5281
15500783	4 x 120sm	43.0	4,608.0	5813
15500733	3 x 150sm/70sm	46.0	4,992.0	6408
15500793	4 x 150sm	48.0	5,760.0	7263
15500743	3 x 185sm/95sm	50.0	6,240.0	7909
15500803	4 x 185sm	53.0	7,104.0	8905
15500193	3 x 240sm/120sm	57.0	8,064.0	10162
15500813	4 x 240sm	60.0	9,216.0	11430
NY-Y-O				
1550205	1 x 10re	10.0	96.0	176
1550206	1 x 16re	11.0	154.0	239
1550207	1 x 25rm	13.0	240.0	380
1550208	1 x 35rm	14.0	336.0	447
1550209	1 x 50rm	15.0	480.0	650
1550210	1 x 70rm	17.0	672.0	864
1550211	1 x 95rm	19.0	912.0	1132
1550212	1 x 120rm	21.0	1,152.0	1405
1550213	1 x 150rm	22.0	1,440.0	1710
1550214	1 x 185rm	24.0	1,776.0	2086
1550215	1 x 240rm	27.0	2,304.0	2669
1550216	1 x 300rm	30.0	2,880.0	3305
1550218	1 x 500rm	39.0	4,800.0	5400
15502003	2 x 1,5re	11.0	29.0	210
15502193	2 x 2,5re	12.0	48.0	250
15502203	2 x 4re	14.0	77.0	360
15502213	2 x 6re	15.0	115.0	400
15502223	2 x 10re	17.0	192.0	500
15502533	4 x 16re	22.0	614.0	1039
15502543	4 x 25rm	27.0	960.0	1620
15502563	4 x 50sm	31.0	1,920.0	2639
15502573	4 x 70sm	35.0	2,688.0	3576
15502583	4 x 95sm	40.0	3,648.0	4746

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: excluding copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

■ Similar products

- NYCY refer to page 219
- NYCWY refer to page 220
- NAYY-J refer to page 221

■ Accessories

- V 1311 pressing pliers, hydraulic refer to page 930
- STAR STRIP stripping tool refer to page 906
- Cable shears KT 4 and KT 5 refer to page 904

NYCY

Fixed installation, direct burial; PVC cable with concentric, helical copper conductor and cross-conductive spiral



Info

- 1. re = round conductor, single-wire;
- 2. rm = round conductor, multi-wire;
- 3. sm = sector-shaped conductor



Benefits

- Concentric conductor above all as PE

Application range

- Power and control cable for fixed installation in the following applications:
- For indoor and outdoor use
- Burial without additional, suitable underground protection according to VDE standard HD 603/VDE 0276-603 - Part 3-G (point 4) governing PVC cables for direct burial: normal minimum installation depth 0.6 m, but at least 0.8 m under roads
- In concrete with a temperature below the maximum cable operating temperature of +70 °C according to the VDE standard HD 603/VDE 0276-603 - Part 3-G (point 4) governing PVC cables for direct burial
- In water: no longer than 2 weeks at a time, maximum submersion depth 10 metres, only in static water/bodies of water without shipping traffic

Product features

- Flame-retardant according to IEC 60332.1.2
- Current rating according to HD 603/VDE 0276-603, Part 3-G, Table 14 (buried at +20 °C ground temperature according to HD 603/VDE 0276-603, Part 3-G, point 5) for routing underground and Table 15 (in the air at an air temperature of +30 °C according to HD 603/VDE 0276-603, Part 3-G, point 5) when used outdoors; but always taking into consideration corrections/reductions to the current rating that may be necessary according to VDE 0298-4, and VDE 0298-4 (also refer to the catalogue appendix T12) for installation in and on buildings

Approvals



Design

- Bare copper wire conductor
- Abbreviations “re”, “rm”, “se”, “sm”: r = round conductor form; s = sectorial conductor form; e = single-wire conductor (wire = conductor)/braided conductor class 1 according to IEC 60228/VDE 0295 for fixed, static applications; m = multi-wire conductor/braided conductor class 2 according to IEC 60228/VDE 0295 for fixed, static applications, but with a slightly lower minimum bending factor
- Core insulation: Based on PVC
- Filling compound over the core assembly
- Concentric, helical, outer conductor made of bare copper strands with inductance-reducing, cross-conductive copper bond counter spiral
- PVC-based outer sheath

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Approvals**
HD 603/VDE 0276-603 for NYCY with 3 or 4 cores and the relevant additional concentric protective conductor
HD 627/VDE 0276-627 for NYCY as from 7 cores and with the additional, concentric protective conductor
- Conductor stranding**
Single or multi-wire
- Minimum bending radius**
Fixed installation: 12 x outer diameter
- Nominal voltage**
U₀/U: 0.6/1.0 kV
- Test voltage**
4000 V
- Temperature range**
During installation: -5°C to +50°C
Fixed installation: -40°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
15503003	2 x 1,5re/1,5	14.0	52.0	245
15503103	3 x 1,5re/1,5	14.0	66.0	280
15503203	4 x 1,5re/1,5	15.0	81.0	302
1550330	7 x 1,5re/2,5	17.0	133.0	450
1550332	12 x 1,5re/2,5	20.0	205.0	580
1550337	24 x 1,5re/6	26.0	413.0	1100
15503113	3 x 2,5re/2,5	15.0	104.0	316
15503213	4 x 2,5re/2,5	16.0	128.0	360
1550350	7 x 2,5re/2,5	18.0	200.0	530
1550355	16 x 2,5re/6	23.0	451.0	950
15503223	4 x 4re/4	18.0	200.0	485
15503233	4 x 6re/6	19.0	297.0	616

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: excluding copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

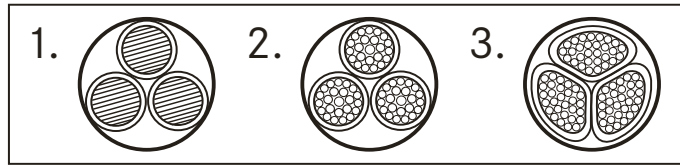
- NYY-J, NYY-O refer to page 217

Building Installation

Cables for direct burial

NYCWY

Fixed installation, direct burial; PVC cable with concentric, wave-like copper conductor and cross-conductive spiral



Info

- 1. re = round conductor, single-wire;
- 2. rm = round conductor, multi-wire;
- 3. sm = sector-shaped conductor

Benefits

- Concentric conductor above all as PE
- Easier connection due to the waveform of the concentric copper conductor

Application range

- Power and control cable for fixed installation in the following applications:
- For indoor and outdoor use
- Burial without additional, suitable underground protection according to VDE standard HD 603/VDE 0276-603 - Part 3-G (point 4) governing PVC cables for direct burial: normal minimum installation depth 0.6 m, but at least 0.8 m under roads
- In concrete with a temperature below the maximum cable operating temperature of +70 °C according to the VDE standard HD 603/VDE 0276-603 - Part 3-G (point 4) governing PVC cables for direct burial
- In water: no longer than 2 weeks at a time, maximum submersion depth 10 metres, only in static water/bodies of water without shipping traffic

Product features

- Flame-retardant according to IEC 60332.1.2

- Current rating according to HD 603/VDE 0276-603, Part 3-G, Table 14 (buried at +20 °C ground temperature according to HD 603/VDE 0276-603, Part 3-G, point 5) for routing underground and Table 15 (in the air at an air temperature of +30 °C according to HD 603/VDE 0276-603, Part 3-G, point 5) when used outdoors; but always taking into consideration corrections/reductions to the current rating that may be necessary according to VDE 0298-4, and VDE 0298-4 (also refer to the catalogue appendix T12) for installation in and on buildings

Approvals



Design

- Bare copper wire conductor
- Abbreviations "re", "rm", "se", "sm": r = round conductor form; s = sectorial conductor form; e = single-wire conductor (wire = conductor)/braided conductor class 1 according to IEC 60228/VDE 0295 for fixed, static applications; m = multi-wire conductor/braided conductor class 2 according to IEC 60228/VDE 0295 for fixed, static applications, but with a slightly lower minimum bending factor
- Core insulation: Based on PVC
- Filling compound over the core assembly
- Concentric, wave-like, outer conductor made of bare copper strands with inductance-reducing, cross-conductive copper bond counter spiral
- PVC-based outer sheath

Technical data



Core identification code
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9



Approvals
HD 603/VDE 0276-603 for NYCWY with 3 or 4 cores and the relevant concentric protective conductor



Conductor stranding
Single or multi-wire



Minimum bending radius
Fixed installation: 12 x outer diameter



Nominal voltage
U_c/U: 0.6/1.0 kV



Test voltage
4000 V



Temperature range
During installation: -5 °C to +50 °C
Fixed installation: -40 °C to +70 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
15505003	2 x 10re/10	19.0	312.0	610
15505263	3 x 10re/10	20.0	408.0	775
15505403	4 x 10re/10	21.0	504.0	897
15505273	3 x 16re/16	22.0	643.0	1066
15505413	4 x 16re/16	24.0	796.0	1250
15505283	3 x 25rm/25	26.0	1,003.0	1584
15505423	4 x 25rm/16	28.0	1,142.0	1822
15505303	3 x 35sm/35	26.0	1,402.0	1710
15505433	4 x 35sm/16	29.0	1,526.0	2146
15505163	3 x 50sm/50	30.0	2,000.0	2368
15505443	4 x 50sm/25	33.0	2,203.0	3031
15505453	4 x 70sm/35	38.0	3,082.0	4056
15505143	3 x 95sm/50	38.0	3,296.0	4256
15505323	3 x 95sm/95	39.0	3,791.0	4600
15505463	4 x 95sm/50	43.0	4,208.0	5364
15505153	3 x 120sm/70	41.0	4,236.0	5314
15505473	4 x 120sm/70	46.0	5,388.0	6748
15505353	3 x 150sm/70	45.0	5,100.0	6344
15505483	4 x 150sm/70	51.0	6,540.0	8159
15505173	3 x 185sm/95	50.0	6,383.0	8054

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: excluding copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- NYJ, NYO refer to page 217

Accessories

- V 1311 pressing pliers, hydraulic refer to page 930
- Cable shears KT 4 and KT 5 refer to page 904

NAYY-J

Fixed installation, direct burial; PVC cable with solid aluminium conductors



Info

- 1. re = round conductor, single-wire;
- 2. rm = round conductor, multi-wire;
- 3. sm = sector-shaped conductor

Application range

- Power and control cable for fixed installation in the following applications:
- For indoor and outdoor use
- Burial without additional, suitable underground protection according to VDE standard HD 603/VDE 0276-603 - Part 3-G (point 4) governing PVC cables for direct burial: normal minimum installation depth 0.6 m, but at least 0.8 m under roads
- In concrete with a temperature below the maximum cable operating temperature of +70 °C according to the VDE standard HD 603/VDE 0276-603 - Part 3-G (point 4) governing PVC cables for direct burial
- In water: no longer than 2 weeks at a time, maximum submersion depth 10 metres, only in static water/bodies of water without shipping traffic

Product features

- Flame-retardant according to IEC 60332.1.2
- Maximum tensile strain for aluminium conductors during installation is 30 N/mm² according to HD 603/VDE 0276-603: Part 1 Appendix A.4.12 and Part 3-G point 4
- Current rating according to HD 603/VDE 0276-603, Part 3-G, Table 14 (buried at +20 °C ground temperature according to HD 603/VDE 0276-603, Part 3-G, point 5) for routing underground and Table 15 (in the air at an air temperature of +30 °C according to HD 603/VDE 0276-603, Part 3-G, point 5) when used outdoors; but always taking into consideration corrections/reductions to the current rating that may be necessary according to VDE 0298-4, and VDE 0298-4 (also refer to the catalogue appendix T12) for installation in and on buildings

Approvals



Design

- Aluminium conductor
- Abbreviations “re”, “rm”, “se”, “sm”: r = round conductor form; s = sectorial conductor form; e = single-wire conductor (wire = conductor)/braided conductor class 1 according to IEC 60228/VDE 0295 for fixed, static applications; m = multi-wire conductor/braided conductor class 2 according to IEC 60228/VDE 0295 for fixed, static applications, but with a slightly lower minimum bending factor
- Core insulation: Based on PVC
- Filling compound over the core assembly
- PVC-based outer sheath

Technical data

- Core identification code**
According to VDE 0293-308 (table T9)
- Approvals**
HD 603/VDE 0276-603
- Conductor stranding**
Single-wire
- Minimum bending radius**
Fixed installation: 12 x outer diameter
- Nominal voltage**
U₀/U: 0.6/1.0 kV
- Test voltage**
4000 V
- Temperature range**
During installation: -5°C to +50°C
Fixed installation: -30°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Alu index (kg/km)	Weight (kg/km)
1552010	4 x 35re	28.2	406.0	1170
1552011	4 x 50se	29.8	580.0	1305
1552012	4 x 70se	34.2	812.0	1730
1552013	4 x 95se	38.6	1,102.0	2205
1552014	4 x 120se	41.9	1,392.0	2655
1552015	4 x 150se	45.6	1,740.0	3150
1552016	4 x 185se	50.8	2,146.0	3925
1552017	4 x 240se	59.6	2,784.0	4880

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Aluminium price basis: excludes aluminium. Refer to appendix T17 for the application and definition of “Metal price basis” and “Metal index”. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- NYY-J, NYY-O refer to page 217

Accessories

- V 1311 pressing pliers, hydraulic refer to page 930
- STAR STRIP stripping tool refer to page 906
- Cable lugs and other connectors made of aluminium or bi-metal Al-Cu are available upon request

Assembled cables

Servo and power drive systems

Servo harnessing according to SIEMENS® 6FX5002-



Benefits

- This cable is designed according to SIEMENS® standard. 6FX5002 is the high-quality, yet more economical, version of the highly flexible 6FX8002 version.
- 100% compatible with SIEMENS® systems
- The oil-resistant PVC sheath enables usage in industrial environments
- For fixed installation.

Application range

- Plant engineering
- Servo drives and servo assemblies

Approvals



Design

- Design according to SIEMENS® standard 6FX 5002
- Outer sheath: special PVC compound, flame-retardant according to IEC 332.1,

Note

- Maximum cable length must comply with the specifications set by the manufacturer of the respective servo drives
- The technical data correspond to the cables used

Design

- Other versions and lengths can be delivered upon request.

Technical data



Approvals

Power cable:
VDE-registered
UL/CSA AWM Style 2570
Signal cables:
UL/CSA AWM style 2502



Conductor stranding

Extra-fine wire strand made of bare copper wires according to VDE 0295 class 6/IEC 60228 class 6



Minimum bending radius

Fixed installation: 5 x outer diameter
Flexible use: 12 x outer diameter



Nominal voltage

Signal cables:
- 30 V AC/DC (UL/CSA)
- 30 V AC (IEC)
Power cable:
- Power cores:
1000 V (UL/CSA)
600/1000 V (IEC)
- Control cores:
750 V (UL/CSA)
30 V AC (IEC)



Temperature range

Fixed installation: -20°C to +80°C
Flexible use: 0°C to +60°C

Article number	Length (m)	SIEMENS® assembly designation	SIEMENS® cable designation	Copper index kg/1.000 pieces	Other dimensions	PU
Assemblies for signal transmission systems						
74305559	10.0	6FX5002-2AD00-1BA0	6FX5008-1BD41	630.0	Other lengths are available upon request	1
74305659	10.0	6FX5002-2AD04-1BA0	6FX5008-1BD41	630.0	Other lengths are available upon request	1
74305759	10.0	6FX5002-2AH00-1BA0	6FX5008-1BD21	770.0	Other lengths are available upon request	1
74305859	10.0	6FX5002-2CA11-1BA0	6FX5008-1BD21	770.0	Other lengths are available upon request	1
74306059	10.0	6FX5002-2CA31-1BA0	6FX5008-1BD51	690.0	Other lengths are available upon request	1
74306159	10.0	6FX5002-2CA34-1BA0	6FX5008-1BD51	690.0	Other lengths are available upon request	1
74306659	10.0	6FX5002-2CF01-1BA0	6FX5008-1BD41	630.0	Other lengths are available upon request	1
74306759	10.0	6FX5002-2CF02-1BA0	6FX5008-1BD41	630.0	Other lengths are available upon request	1
74306859	10.0	6FX5002-2CH00-1BA0	6FX5008-1BD41	630.0	Other lengths are available upon request	1
74307059	10.0	6FX5002-2EQ10-1BA0	6FX5008-1BD51	690.0	Other lengths are available upon request	1
74307159	10.0	6FX5002-2EQ14-1BA0	6FX5008-1BD51	690.0	Other lengths are available upon request	1
70430150	10.0	6FX5002-2DC00-1BA0	6FX2008-1DC00	370.0	Other lengths are available upon request	1
70430069	10.0	6FX5002-2DC10-1BA0	6FX2008-1DC00	370.0	Other lengths are available upon request	1
70430151	10.0	6FX5002-2DC20-1BA0	6FX2008-1DC00	370.0	Other lengths are available upon request	1
Assemblies for motors without brake						
74307259	10.0	6FX5002-5CA01-1BA0	6FX5008-1BB11	880.0	Other lengths are available upon request	1
74307459	10.0	6FX5002-5CA05-1BA0	6FX5008-1BB11	880.0	Other lengths are available upon request	1
74308259	10.0	6FX5002-5CA31-1BA0	6FX5008-1BB21	1,320.0	Other lengths are available upon request	1
74308559	10.0	6FX5002-5CA41-1BA0	6FX5008-1BB31	1,950.0	Other lengths are available upon request	1
74308659	10.0	6FX5002-5CA51-1BA0	6FX5008-1BB41	2,800.0	Other lengths are available upon request	1
70430003	10.0	6FX5002-5CS01-1BA0	6FX5008-1BB11	880.0	Other lengths are available upon request	1
70430004	10.0	6FX5002-5CS11-1BA0	6FX5008-1BB21	1,940.0	Other lengths are available upon request	1
Assemblies for motors with brake						
74308959	10.0	6FX5002-5DA01-1BA0	6FX5008-1BA11	1,500.0	Other lengths are available upon request	1
74309159	10.0	6FX5002-5DA05-1BA0	6FX5008-1BA11	1,430.0	Other lengths are available upon request	1
74309960	10.0	6FX5002-5DA31-1BA0	6FX5008-1BA21	1,940.0	Other lengths are available upon request	1
74313361	10.0	6FX5002-5DA41-1BA0	6FX5008-1BA31	2,720.0	Other lengths are available upon request	1
74313661	10.0	6FX5002-5DA51-1BA0	6FX5008-1BA41	3,510.0	Other lengths are available upon request	1
70430001	10.0	6FX5002-5DS01-1BA0	6FX5008-1BA11	1,500.0	Other lengths are available upon request	1
70430002	10.0	6FX5002-5DS11-1BA0	6FX5008-1BA21	1,940.0	Other lengths are available upon request	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Siemens part designations (6FX5002/5008, 6FX7002/7008, 6FX8002/8008) are registered trademarks of Siemens AG, and are listed for comparison purposes only. DESINA® is a registered trademark of the German Machine Tool Builders' Association.

Article numbers refer to genuine Lapp products.

Photographs are not to scale and do not represent detailed images of the respective products.

Servo harnessing according to SIEMENS® 6FX 8002-



Benefits

- Highly flexible servomotor and sensor cables that are designed for use in power chains
- 100% compatible with SIEMENS® systems
- The oil-resistant PUR sheath enables usage in industrial environments

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

- Abrasion and cut-resistant, halogen-free, oil-resistant

Approvals



Design

- Extra-fine strand made of copper wires:
 - > Signal cables: tinned
 - > Power cables: bare
- Design according to SIEMENS® standard 6FX 8002
- PUR outer sheath
- Signal cables: green (RAL 6018)
- Servomotor cables: orange (RAL 2003)

Note

- Please comply with the assembly guidelines for cables in power chain systems.
- Maximum cable length must comply with the specifications set by the manufacturer of the respective servo drives
- The technical data correspond to the cables used

Design

- Other versions and lengths can be delivered upon request.

Technical data



Approvals

Power cable:
VDE-registered
UL AWM Style 21223
CSA AWM I/II, A/B 1000 V 80° FT 1
Sensor leads: UL/CSA AWM Style 20236



Minimum bending radius

Power cable:
Fixed: 4 x D
Dynamic:
1.5 mm² - 16 mm²: 7.5 x D
25 mm² - 50 mm²: 10 x D
Signal cable:
Fixed: 4 x D
Dynamic: 8 x D



Nominal voltage

Signal cables:
- 30 V AC/DC (UL/CSA)
- 30 V AC (IEC)
Power cable:
- Power cores:
600/1000 V (IEC)
1000 V (UL/CSA)
- Control cores:
250 V AC (IEC)
1000 V (UL/CSA)



Temperature range

Fixed installation: -50°C to +80°C
Flexing: -20°C to +60°C

Article number	Length (m)	SIEMENS® assembly designation	SIEMENS® cable designation	Copper index kg/1.000 pieces	Other dimensions	PU
Assemblies for signal transmission systems						
70301549	10.0	6FX8002-2AD00-1BA0	6FX8008-1BD41	660.0	Other lengths are available upon request	1
74303559	10.0	6FX8002-2AD04-1BA0	6FX8008-1BD41	660.0	Other lengths are available upon request	1
70389020	10.0	6FX8002-2AH00-1BA0	6FX8008-1BD41	770.0	Other lengths are available upon request	1
70301550	10.0	6FX8002-2CA11-1BA0	6FX8008-1BD21	770.0	Other lengths are available upon request	1
70301553	10.0	6FX8002-2CA31-1BA0	6FX8008-1BD51	860.0	Other lengths are available upon request	1
70301554	10.0	6FX8002-2CA34-1BA0	6FX8008-1BD51	860.0	Other lengths are available upon request	1
70301563	10.0	6FX8002-2CG00-1BA0	6FX8008-1BD21	770.0	Other lengths are available upon request	1
70301564	10.0	6FX8002-2CH00-1BA0	6FX8008-1BD41	660.0	Other lengths are available upon request	1
70301567	10.0	6FX8002-2EQ10-1BA0	6FX8008-1BD51	860.0	Other lengths are available upon request	1
70391522	10.0	6FX8002-2EQ14-1BA0	6FX8008-1BD51	860.0	Other lengths are available upon request	1
70301568	10.0	6FX8002-2CF01-1BA0	6FX8008-1BD41	660.0	Other lengths are available upon request	1
70301569	10.0	6FX8002-2CF02-1BA0	6FX8008-1BD41	660.0	Other lengths are available upon request	1
70301575	10.0	6FX8002-4AA21-1BA0	6FX8008-1BD61	540.0	Other lengths are available upon request	1
70430149	10.0	6FX8002-2DC00-1BA0	6FX8008-2DC00	410.0	Other lengths are available upon request	1
70431018	10.0	6FX8002-2DC10-1BA0	6FX8008-2DC00	410.0	Other lengths are available upon request	1
70430096	10.0	6FX8002-2DC20-1BA0	6FX8008-2DC00	410.0	Other lengths are available upon request	1
Assemblies for motors without brake						
70301578	10.0	6FX8002-5CA01-1BA0	6FX8008-1BB11	840.0	Other lengths are available upon request	1
70301601	10.0	6FX8002-5CA05-1BA0	6FX8008-1BB11	960.0	Other lengths are available upon request	1
70301583	10.0	6FX8002-5CA31-1BA0	6FX8008-1BB21	1,350.0	Other lengths are available upon request	1
70301585	10.0	6FX8002-5CA41-1BA0	6FX8008-1BB31	2,060.0	Other lengths are available upon request	1
70301586	10.0	6FX8002-5CA51-1BA0	6FX8008-1BB41	2,710.0	Other lengths are available upon request	1
70430007	10.0	6FX8002-5CS01-1BA0	6FX8008-1BB11	960.0	Other lengths are available upon request	1
70430008	10.0	6FX8002-5CS11-1BA0	6FX8008-1BB21	1,280.0	Other lengths are available upon request	1
Assemblies for motors with brake						
70301588	10.0	6FX8002-5DA01-1BA0	6FX8008-1BA11	1,430.0	Other lengths are available upon request	1
70301600	10.0	6FX8002-5DA05-1BA0	6FX8008-1BA11	1,430.0	Other lengths are available upon request	1
70301594	10.0	6FX8002-5DA31-1BA0	6FX8008-1BA21	1,860.0	Other lengths are available upon request	1
70301597	10.0	6FX8002-5DA41-1BA0	6FX8008-1BA31	2,610.0	Other lengths are available upon request	1
70301598	10.0	6FX8002-5DA51-1BA0	6FX8008-1BA41	3,300.0	Other lengths are available upon request	1
70430005	10.0	6FX8002-5DS01-1BA0	6FX8008-1BA11	1,430.0	Other lengths are available upon request	1
70430006	10.0	6FX8002-5DS11-1BA0	6FX8008-1BA21	1,860.0	Other lengths are available upon request	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Siemens part designations (6FX5002/5008, 6FX7002/7008, 6FX8002/8008) are registered trademarks of Siemens AG, and are listed for comparison purposes only. DESINA® is a registered trademark of the German Machine Tool Builders' Association.

Article numbers refer to genuine Lapp products.

Other designs and lengths are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

Assembled cables

Servo and power drive systems

Servo harnessing according to INDRAMAT® IKG / RKL



Benefits

- Highly flexible servomotor cables that are designed for use in power chains.
- 100% compatible with INDRAMAT® systems
- The oil-resistant PUR sheath enables usage in industrial environments

Application range

- Plant engineering
- Servo drives and servo assemblies

Approvals



Design

- In accordance with Indramat standard IKG/ RKL

Note

- Please comply with the assembly guidelines for cables in power chain systems.
- Maximum cable length must comply with the specifications set by the manufacturer of the respective servo drives
- The technical data correspond to the cables used

Design

- Other versions and lengths can be delivered upon request.

Technical data



Approvals
UL/CSA AWM Style 20234



Minimum bending radius
Fixed installation: 6 x outer diameter
Flexible use: 10 x outer diameter



Nominal voltage
Power cores:
- 1000 V (UL/CSA)
- 600/1000 V (IEC)
Control cores:
250 V AC (IEC)
1000 V (UL/CSA)



Temperature range
Fixed installation: -50°C to +80°C
Flexible: -30°C to +60°C

Article number	Length (m)	INDRAMAT® ordering designation	Cable designation	Copper index kg/1.000 pieces	Other dimensions	PU
Assemblies to INDRAMAT standard IKG						
70345476	10.0	IKG4009-010	INK0653	1,700.0	Other lengths are available upon request	1
70345503	10.0	IKG4087-010	INK0603	3,060.0	Other lengths are available upon request	1
70345521	10.0	IKG4163-010	INK0605	5,650.0	Other lengths are available upon request	1
70345522	10.0	IKG4170-010	INK0605	5,650.0	Other lengths are available upon request	1
70345541	10.0	IKG4020-010	INK0653	1,700.0	Other lengths are available upon request	1
70345542	10.0	IKG4018-010	INK0653	1,700.0	Other lengths are available upon request	1
70345543	10.0	IKG4016-010	INK0653	1,700.0	Other lengths are available upon request	1
70345545	10.0	IKG4050-010	INK0650	1,890.0	Other lengths are available upon request	1
Assemblies to INDRAMAT standard RKL						
70410000	10.0	RKL4330-010	INK0606	6,700.0	Other lengths are available upon request	1
70392839	10.0	RKL4302-010	INK0653	1,700.0	Other lengths are available upon request	1
70410001	10.0	RKL4303-010	INK0653	1,700.0	Other lengths are available upon request	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Indramat part designations (IKG, IKS, INK, INS, RKL and RKG) are registered trademarks of Bosch Rexroth AG, and are listed for comparison purposes only.

Article numbers refer to genuine Lapp products.

Other designs and lengths are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

Servo harnessing according to INDRAMAT® IKS / RKG



Benefits

- Highly flexible feedback cables that are designed for use in power chains
- 100% compatible with INDRAMAT® systems
- The oil-resistant PUR sheath enables usage in industrial environments

Application range

- Plant engineering
- Servo drives and servo assemblies

Approvals



Design

- In accordance with Indramat standard IKS/ RKG

Note

- Please comply with the assembly guidelines for cables in power chain systems.
- Maximum cable length must comply with the specifications set by the manufacturer of the respective servo drives
- The technical data correspond to the cables used

Design

- Other versions and lengths can be delivered upon request.

Technical data



Approvals
UL/CSA AWM Style 20236



Minimum bending radius
Fixed installation: 5 x outer diameter
Flexible use: 10 x outer diameter



Nominal voltage
300 V



Temperature range
Fixed installation: -30°C to +90°C
Flexible: -30°C to +80°C

Article number	Length (m)	INDRAMAT® ordering designation	Cable designation	Copper index kg/1.000 pieces	Other dimensions	PU
Assemblies to INDRAMAT standard IKS						
70335583	10.0	IKS4374-010	INK0448	600.0	Other lengths are available upon request	1
70335584	10.0	IKS4376-010	INK0448	700.0	Other lengths are available upon request	1
70335595	10.0	IKS4103-010	INK0448	700.0	Other lengths are available upon request	1
70335596	10.0	IKS4153-010	INK0448	700.0	Other lengths are available upon request	1
Assemblies to INDRAMAT standard RKG						
70392984	10.0	RKG4200-010	INK0448	600.0	Other lengths are available upon request	1
70410002	10.0	RKG4201-010	INK0448	600.0	Other lengths are available upon request	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Indramat part designations (IKG, IKS, INK, INS, RKL and RKG) are registered trademarks of Bosch Rexroth AG, and are listed for comparison purposes only.

Article numbers refer to genuine Lapp products.

Other designs and lengths are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

Servo harnessing according to LENZE®



Benefits

- Servomotors, resolvers and encoder cables for fixed installation or application in power supply chains
- 100% compatible with specific drive systems
- Outer sheath makes them particularly suitable for use in industrial areas

Application range

- Plant engineering
- Servo drives and servo assemblies

Approvals



Design

- Design according to specific drive systems:
- Designs for fixed installation: PVC outer sheath, flame-retardant in accordance with IEC 332.1, UL/CSA-approved PVC core insulation.
- Designs for highly flexible use: oil-resistant PUR sheath in accordance with VDE472-803 Part B, flame-retardant in accordance with IEC 60332.1-2, TPE core insulation.

Note

- For the highly flexible version, please observe the assembly guidelines for cables in power chain systems.
- Maximum cable length must comply with the specifications set by the manufacturer of the respective servo drives
- The technical data correspond to the cables used

Design

- Other versions and lengths can be delivered upon request.

Technical data



Approvals

Resolver and encoder cable:
UL AWM Style 2464 for fixed installation versions, Style 21165 for highly flexible applications.
Motor cable:
UL AWM Style 2570 for fixed installation version; Style 20940 for high flexibility use.



Minimum bending radius

Fixed installation: 7.5 x outer diameter
Flexible use: 10 x outer diameter



Nominal voltage

Resolver and encoder cable:
30 V (VDE), 300 V (UL/CSA)
Resolver and encoder cable:
30 V (VDE), 300 V (UL/CSA)



Test voltage

Resolver and encoder cable:
1.5 kV
Motor cable:
- Power cores: 4 kV
- Control cores: 2 kV



Temperature range

Fixed installation: -25°C to +80°C
Flexible use: -5°C to +70°C

Article number	Length (m)	LENZE® item designation	Static	Highly flexible	Number of cores and mm² per conductor	Copper index kg/1.000 pieces	Other dimensions	PU
Servo cables								
74320320	10.0	EWLM-010GM-015	•		4 G 1,5+(2x0,5)	1,060.0	Other lengths are available upon request	1
74320499	10.0	EWLM-010GM-025	•		4 G 2,5+(2x0,5)	1,560.0	Other lengths are available upon request	1
74321272	10.0	EWLM-010GMS-015		•	4 G 1,5+(2x0,5)	1,060.0	Other lengths are available upon request	1
74321426	10.0	EWLM-010GMS-025		•	4 G 2,5+(2x0,5)	1,530.0	Other lengths are available upon request	1
70415002	10.0	EYP-0003-A-0100-M01-A00	•		4 G 1.5	1,060.0	Other lengths are available upon request	1
Fan cables								
74322480	10.0	EWLL-010GM	•		5 G 0.5	240.0	Other lengths are available upon request	1
74322629	10.0	EWLL-010GMS		•	5 G 0.5	240.0	Other lengths are available upon request	1
70415001	10.0	EYL-0001-V-0100L02-J02		•	5 G 0.75	360.0	Other lengths are available upon request	1
Resolver cables								
74320540	10.0	EWLR-010GM-T	•		3x (2x0,14) + 1x (2x0,5)	430.0	Other lengths are available upon request	1
74323073	10.0	EWLR-010GMS-T		•	3x (2x0,14) + 1x (2x0,5)	430.0	Other lengths are available upon request	1
70415005	10.0	EYF-0020-A-0100-F01-S04		•	3x (2x0,14) + 3x 0,14	370.0	Other lengths are available upon request	1
Encoder cables								
74323522	10.0	EWLE-010GM-T	•		4x (2x0,14) + 1x (2x1,0)	650.0	Other lengths are available upon request	1
74323672	10.0	EWLE-010GMS-T		•	4x (2x0,14) + 1x (2x1,0)	650.0	Other lengths are available upon request	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Lenze® part designations (EWLM_, EWLR_, EWLE_, EWLL_, EYL and EYP) are registered trademarks of Lenze® AG, and are listed for comparison purposes only. DESINA® is a registered trademark of the German Machine Tool Builders' Association.

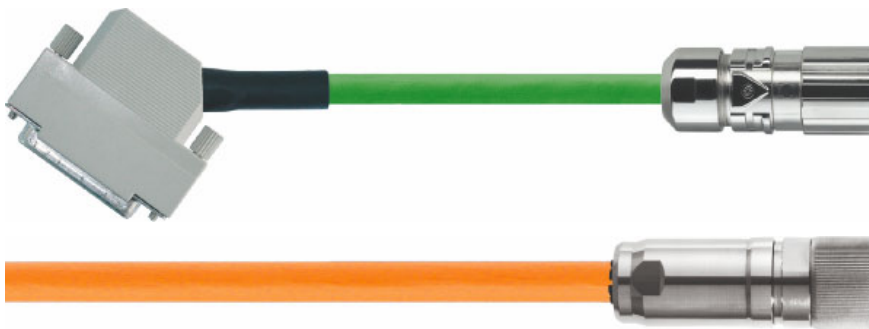
Article numbers refer to genuine Lapp products.

Photographs are not to scale and do not represent detailed images of the respective products.

Assembled cables

Servo and power drive systems

Servo harnessing according to SEW®



Benefits

- Servomotors, resolvers and encoder cables for fixed installation or application in power supply chains
- Outer sheath makes them particularly suitable for use in industrial areas

Application range

- Plant engineering
- Servo drives and servo assemblies

Approvals



Design

- Design according to specific drive systems:
- Flame-retardant according to IEC 60332.1.2

Note

- For the highly flexible version, please observe the assembly guidelines for cables in power chain systems.
- Maximum cable length must comply with the specifications set by the manufacturer of the respective servo drives
- The technical data correspond to the cables used

Design

- Other versions and lengths can be delivered upon request.

Technical data



Approvals

Power cable: UL AWM Style 2587



Minimum bending radius

Power cable occasional flexing:
15 x cable diameter
Signal cable for flexible installation:
15 x outer diameter



Nominal voltage

Power cable: power cores: IEC 750 V, UL 600 V
Signal cores: IEC 350 V, UL 600 V
Signal cable: 250 V



Test voltage

Power cable: 2 KV
Signal cable: 1.5 KV



Temperature range

Flexing power cable: -10 °C to +80 °C
Signal cable flexing: -5 °C to +70 °C

Article number	Length (m)	SEW item designation	Static	Highly flexible	Number of cores and mm ² per conductor	Copper index kg/1.000 pieces	Other dimensions	PU
Motor cables								
70430251	10.0	05904544	•		4G 1,5	880.0	Other lengths are available upon request	1
70430250	10.0	13324853	•		4G 1,5+3x1	1,510.0	Other lengths are available upon request	1
Assemblies for signal transmission systems								
70430249	10.0	13324535	•		6x2x0,25	695.0	Other lengths are available upon request	1
70430252	10.0	1995405		•	6x2x0,25	718.0	Other lengths are available upon request	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
SEW® is a registered trademark of SEW Eurodrive GmbH & Co KG, Ernst-Blickle Str. 42, D-76646 Bruchsal
Article numbers refer to genuine Lapp products.
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX



ÖLFLEX® TRUCK SPIRAL ABS



ÖLFLEX® TRUCK SPIRAL EBS



Application range

- These spiral cables are used to connect the tractor and trailer or semi-trailer
- 5-pin ABS connector system according to ISO 7638
- ADR/GGVS approval - also for transporting hazardous goods

Product features

- Designed according to ISO 4141 and ISO 6722
- Highest number of cycles in the flexural fatigue test
- High restoring forces
- Protection rating: IP69k

Design

ÖLFLEX® TRUCK SPIRAL ABS

- 5-pin: 2 x 4.0 mm² + 3 x 1.5 mm²
- Working length: 2,250 mm, Extension length: max. 4,000 mm
- Insulation for Economy: PP for core, PUR for outer sheath
Insulation for Classic: PP for core, TPE-E for outer sheath

ÖLFLEX® TRUCK SPIRAL EBS

- 7-pin.: 2 x 4.0 mm² + 3 x 1.5 mm² + 1 x (2 x 1.5 mm²)
- Working length: 2,250 mm, Extension length: max. 4,000 mm
- Insulation for Economy: PP for core, PUR for outer sheath
Insulation for Classic: PP for core, TPE-E for outer sheath

Technical data

	Core identification code ISO 4141-3
	In accordance with ISO 4141 part 1-4 and ISO 6722
	Insulation resistance 10 MOhm x km
	Conductor stranding Fine wire according to DIN/ISO 6722
	Test voltage 5 kV rms for at least 5 min.
	Temperature range Area of application, Class A

Article number	Article designation	Spiral length, extended (mm)	Outer sheath colour	Copper index kg/1.000 pieces	Weight (kg/1000 pieces)	PU
ÖLFLEX® TRUCK SPIRAL ABS 5-pin: 2 x 4.0 mm² + 3 x 1.5 mm²						
70274000	ÖLFLEX TRUCK SPIRAL ABS Economy 5-pin, 4 m	4,000	black	636.0	1800	1
70274001	ÖLFLEX TRUCK SPIRAL ABS Classic 5-pin, 4 m	4,000	black	648.0	1800	1
ÖLFLEX® TRUCK SPIRAL EBS 7-pin: 2x4.0mm² + 3x1.5mm² + 1x(2x1.5mm²)						
70274002	ÖLFLEX TRUCK SPIRAL EBS Economy 7-pin, 4m	4,000	black	785.0	2000	1
70274003	ÖLFLEX TRUCK SPIRAL EBS Classic 7-pin, 4m	4,000	black	804.0	2000	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® TRUCK SPIRAL 15-pole



ÖLFLEX® TRUCK SPIRAL 7-pole



Application range

ÖLFLEX® TRUCK SPIRAL 15-pole

- These spiral cables are used to connect the tractor and trailer or semi-trailer
- 15-pin connector system according to ISO 12098
- ADR/GGVS approval - also for transporting hazardous goods

ÖLFLEX® TRUCK SPIRAL 7-pole

- These spiral cables are used to connect the tractor and trailer or semi-trailer
- 7-pin connector system according to ISO 1185 (24N), according to ISO 3731 (24S)
- ADR/GGVS approval - also for transporting hazardous goods

Product features

- Designed according to ISO 4141 and ISO 6722
- Highest number of cycles in the flexural fatigue test
- High restoring forces
- Protection rating: IP69k

Design

ÖLFLEX® TRUCK SPIRAL 15-pole

- 15-pin: 3 x 2.5 mm² + 10 x 1.5 mm² + 1 x (2 x 1.5 mm²)
or
- 13-pin: 3 x 2.5 mm² + 8 x 1.5 mm² + 4 x 1.5 mm²
- Working length: 2,250 mm, Extension length: max. 4,000 mm
- Insulation for Economy: PP for core, PUR for outer sheath
Insulation for Classic: PP for core, TPE-E for outer sheath

ÖLFLEX® TRUCK SPIRAL 7-pole

- 7-pin.: 1 x 2.5 mm² + 6 x 1.5 mm²
- Working length: 2,250 mm, Extension length: max. 4,000 mm
- Insulation: PP for core, PUR for outer sheath

Technical data



Core identification code
ÖLFLEX® TRUCK SPIRAL 15-pole
 15-pin white cores with black numbers acc. to DIN 72570
ÖLFLEX® TRUCK SPIRAL 7-pole
 ISO 4141-3



In accordance with ISO 4141 part 1-4 and ISO 6722



Insulation resistance
 10 MOhm x km



Conductor stranding
 Fine wire according to DIN/ISO 6722



Test voltage
 5 kV rms for at least 5 min.



Temperature range
 Area of application, Class A

Article number	Article designation	Spiral length, extended (mm)	Outer sheath colour	Copper index kg/1.000 pieces	Weight (kg/1000 pieces)	PU
ÖLFLEX® TRUCK SPIRAL 15-pin						
70274004	ÖLFLEX TRUCK SPIRAL Economy 15-pin, 4m	4,000	black	1,298.0	2500	1
70274005	ÖLFLEX TRUCK SPIRAL Classic 15-pin, 4m	4,000	black	1,322.0	2500	1
70274006	ÖLFLEX TRUCK SPIRAL Classic 13-pin, 4m	4,000	black	1,322.0	2500	1
ÖLFLEX® TRUCK SPIRAL 7-pin						
70274007	ÖLFLEX TRUCK SPIRAL 24N Economy 7-pin, 4m	4,000	black	583.0	1300	1
70274008	ÖLFLEX TRUCK SPIRAL 24S Economy 7-pin, 4m	4,000	black	583.0	1300	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

TRUCK adapters and cables



TRUCK Cables for batterie-charging



Application range

TRUCK adapters and cables

- These spiral cables are used to connect the tractor and trailer or semi-trailer
- These adapters are necessary if the trailers are equipped with different connector systems (15-pin or 17-pin)

Product features

TRUCK adapters and cables

- Designed according to ISO 6722
- Highest number of cycles in the flexural fatigue test
- High restoring forces
- Protection rating: IP69k
- Short adapter: 15-pin plug (male contacts) to 2 x 7-pin receptacle (male contacts)

TRUCK Cables for batterie-charging

- Designed according to ISO 6722
- Connectors: 2-pin cable connector (male contacts) and 2-pin socket (female contacts)

Design

TRUCK adapters and cables

- 15-pin cable coupler (female contacts) to 2 x 7-pin cable connector (female contacts) 1 x 2.5 mm² + 6 x 1.5 mm², black
- Working length: 2,250 mm, Extension length: max. 4,000 mm
- Insulation: PP for core, PUR for outer sheath

TRUCK Cables for batterie-charging







- Working length: 3,500 mm
- 2 x 35 mm², black and red
- Insulation: PVC for core, PUR for outer sheath

Note

TRUCK adapters and cables

- Other lengths and cable-ends are available upon request

Technical data

	Core identification code TRUCK adapters and cables ISO 4141-3
	TRUCK adapters and cables In accordance with ISO 4141 part 1-4 and ISO 6722
	Insulation resistance TRUCK adapters and cables 10 MOhm x km
	Conductor stranding TRUCK adapters and cables Fine wire according to DIN/ISO 6722
	Test voltage TRUCK adapters and cables 5 kV rms for at least 5 min.
	Temperature range Area of application, Class A

Article number	Article designation	Outer sheath colour	Copper index kg/1.000 pieces	Weight (kg/ 1000 pieces)	PU
ÖLFLEX® TRUCK adapter cables					
70274009	ÖLFLEX® TRUCK SPIRAL Adapterwendel,4m	black	1,166.0	2100	1
70270251	TRUCK short adapter 15/7/7 24 V S/N				1
70270603	TRUCK receptacle 24 V/2-pin 50 ²				1
ÖLFLEX® TRUCK battery charging cables					
70270026	ÖLFLEX® TRUCK SPIRAL 2x35 PUR/PVC oSt/5,0	black-red	3,495.0	3994	1
70270602	TRUCK connector 24 V/2-pin 35 mm ²				1

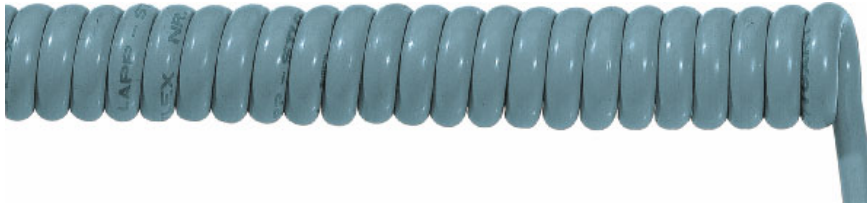
Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Assembled cables

Spiralised

ÖLFLEX® SPIRAL 400 P

PUR spiral cable with increased chemical resistance



Info

- High resistance to benzols, benzines and other substances listed in Appendix T1

■ Benefits

- High restoring forces and extension lengths up to 3 times the unextended spiral length

■ Application range

- As control and power cables in machines
- Mechanical engineering
- Apparatus construction

■ Product features

- Resistant to microbes, hydrolysis and almost all mineral oils
- High chemical-resistance to benzols, benzines and other agents listed in the selection table in Appendix T1

■ Approvals



■ Design

- Fine-wire strand made of bare copper wires
- Core insulation: Special PVC P8/1
- Use of talcum
- Outer sheath made of special polyurethane
- Length of straight ends: 1st end = 200 mm, 2nd end = 600 mm
- Versions without the mandatory LAPP designation, but with other solid lengths, end lengths and end forms available on request

■ Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293
- Based on**
Core: VDE 0812/0281
Outer sheath: VDE 0250/0282
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
- Nominal voltage**
U₀/U: 300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexible use: +5°C to +50°C

Article number	Number of cores and mm ² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)	Copper index (kg/1.000 pieces)
70002622	2 X 0.75	1,500	500	5.4	19.5	64.8
70002623	2 X 0.75	3,000	1,000	5.4	19.5	123.8
70002624	2 X 0.75	4,500	1,500	5.4	19.5	170.6
70002625	2 X 0.75	6,000	2,000	5.4	19.5	234.7
70002628	3 G 0.75	1,500	500	5.7	20.0	101.5
70002629	3 G 0.75	3,000	1,000	5.7	20.0	172.8
70002630	3 G 0.75	4,500	1,500	5.7	20.0	261.3
70002631	3 G 0.75	6,000	2,000	5.7	20.0	326.1
70002634	4 G 0.75	1,500	500	6.2	21.0	123.8
70002635	4 G 0.75	3,000	1,000	6.2	21.0	221.7
70002636	4 G 0.75	4,500	1,500	6.2	21.0	129.6
70002637	4 G 0.75	6,000	2,000	6.2	21.0	453.6
70002640	5 G 0.75	1,500	500	6.7	24.0	154.8
70002641	5 G 0.75	3,000	1,000	6.7	24.0	306.0
70002642	5 G 0.75	4,500	1,500	6.7	24.0	439.2
70002643	5 G 0.75	6,000	2,000	6.7	24.0	594.0
70002726	7 G 0.75	1,500	500	7.3	27.0	245.0
70002727	7 G 0.75	3,000	1,000	7.3	27.0	525.0
70002728	7 G 0.75	4,500	1,500	7.3	27.0	660.0
70002729	7 G 0.75	6,000	2,000	7.3	27.0	1,025.0
70002731	12 G 0.75	1,500	500	9.9	35.0	371.5
70002732	12 G 0.75	3,000	1,000	9.9	35.0	682.5
70002734	18 G 0.75	1,500	500	11.7	40.0	699.8
70002735	18 G 0.75	3,000	1,000	11.7	40.0	1,127.5
70002646	2 X 1	1,500	500	5.7	20.0	88.3
70002647	2 X 1	3,000	1,000	5.7	20.0	161.2
70002648	2 X 1	4,500	1,500	5.7	20.0	230.4
70002649	2 X 1	6,000	2,000	5.7	20.0	272.6
70002651	3 G 1	1,500	500	6.0	21.0	129.6
70002652	3 G 1	3,000	1,000	6.0	21.0	244.8
70002653	3 G 1	4,500	1,500	6.0	21.0	350.5
70002654	3 G 1	6,000	2,000	6.0	21.0	417.6
70002656	4 G 1	1,500	500	6.5	24.0	176.6
70002657	4 G 1	3,000	1,000	6.5	24.0	322.5
70002658	4 G 1	4,500	1,500	6.5	24.0	503.0
70002659	4 G 1	6,000	2,000	6.5	24.0	587.5
70002661	5 G 1	1,500	500	7.1	25.0	220.8
70002662	5 G 1	3,000	1,000	7.1	25.0	408.0
70002663	5 G 1	4,500	1,500	7.1	25.0	600.0
70002664	5 G 1	6,000	2,000	7.1	25.0	744.0
70002666	7 G 1	1,250	500	8.0	30.0	328.3
70002667	7 G 1	2,500	1,000	8.0	30.0	562.8
70002668	7 G 1	3,750	1,500	8.0	30.0	770.5
70002669	7 G 1	5,000	2,000	8.0	30.0	1,175.1
70002670	12 G 1	1,500	500	10.5	37.0	598.0
70002671	12 G 1	3,000	1,000	10.5	37.0	1,012.0
70002672	18 G 1	1,500	500	12.7	45.0	891.0
70002673	18 G 1	3,000	1,000	12.7	45.0	1,402.5

Article number	Number of cores and mm ² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)	Copper index (kg/1.000 pieces)
70002681	2 X 1.5	1,500	500	6.3	23.0	142.1
70002682	2 X 1.5	3,000	1,000	6.3	23.0	266.8
70002683	2 X 1.5	4,500	1,500	6.3	23.0	379.9
70002684	2 X 1.5	6,000	2,000	6.3	23.0	493.0
70002687	3 G 1.5	1,500	500	6.7	24.0	210.7
70002688	3 G 1.5	3,000	1,000	6.7	24.0	365.5
70002689	3 G 1.5	4,500	1,500	6.7	24.0	498.8
70002690	3 G 1.5	6,000	2,000	6.7	24.0	662.2
70002699	5 G 1.5	1,250	500	8.1	30.0	338.4
70002700	5 G 1.5	2,500	1,000	8.1	30.0	597.6
70002701	5 G 1.5	3,750	1,500	8.1	30.0	864.0
70002702	5 G 1.5	5,000	2,000	8.1	30.0	1,173.6
70002705	7 G 1.5	1,250	500	8.9	31.0	454.5
70002706	7 G 1.5	2,500	1,000	8.9	31.0	808.0
70002707	7 G 1.5	3,750	1,500	8.9	31.0	1,111.0
70002708	7 G 1.5	5,000	2,000	8.9	31.0	1,504.9
70002709	12 G 1.5	1,500	500	12.0	46.0	968.8
70002710	12 G 1.5	3,000	1,000	12.0	46.0	1,660.8
70002711	18 G 1.5	1,500	500	13.4	52.0	1,261.4
70002712	18 G 1.5	3,000	1,000	13.4	52.0	2,261.0
70002716	3 G 2.5	1,250	500	8.1	28.5	338.4
70002717	3 G 2.5	2,500	1,000	8.1	28.5	640.8
70002718	3 G 2.5	3,750	1,500	8.1	28.5	885.6
70002719	3 G 2.5	5,000	2,000	8.1	28.5	1,072.8
70002721	5 G 2.5	1,250	500	10.0	37.0	624.0
70002722	5 G 2.5	2,500	1,000	10.0	37.0	1,068.0
70002723	5 G 2.5	3,750	1,500	10.0	37.0	1,489.2
70002724	5 G 2.5	5,000	2,000	10.0	37.0	1,980.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Photographs are not to scale and do not represent detailed images of the respective products.

Versions without the mandatory LAPP designation, but with other solid lengths, end lengths and end forms available on request

Similar products

- ÖLFLEX® SPIRAL 540 P refer to page 233

Accessories

- SKINTOP® CLICK / CLICK-R refer to page 654

Assembled cables

Spiralised

SPIRAL H07BQ-F BLACK

Black, robust PUR spiral cable with high recoiling forces



Info

- Black
- Heavy construction type, well-priced
- Outer sheath: PUR, with high recoiling forces

Benefits

- Robust
- Wide application range
- Cost-effective

Application range

- Construction of engines and appliances with flexible power connections as well as at dockyards
- Construction of machinery and powered doors
- Measurement and control technology
- Any commercial/industrial/agricultural facility: connection of tools, appliances and mobile motors
- Increased tensile and abrasion requirements, can be used in damp and wet environments (but no submersion)

Product features

- Black, robust outer PUR sheath
- High tensile strength and abrasion-resistance
- High restoring forces
- Resistant to microbes, solvents and certain fuels
- Hydrolysis-resistant

Approvals



- The spiralling modifies the properties of the longish, <HAR>-certified H07BQ-F cable (sold by the metre) such that certain technical requirements stipulated by the H07BQ-F standards are no longer complied with following spiralling. As a result, the <HAR> H07BQ-F design certification of the longish H07BQ-F cable, also identifiable on the spiral cable, is no longer valid in conjunction with the spiralled piece good design of the "SPIRAL H07BQ-F BLACK". This is a completely natural, logical consequence of the spiralling processing steps.

Design

- Tinned stranded copper wire of conductor class 5 according to IEC 60228/VDE 0295
- Core insulation: El6 rubber according to HD 22.1/VDE 0282-1 & EN 50363-1/VDE 0207-363-1; coloured according to HD 308/VDE 0293-308; VDE and HAR marking of the unspiralled H07BQ-F (sold by the metre) as the basic material for the spiralling
- Use of talcum
- Black, outer PUR sheath made of TPU according to HD 22.10/VDE 0282-10; marking "H07BQ-F ..."
- For the 4 standard solid lengths available, please see the article table below
- Radial outflow shape at cable ends - length of ends: 200 mm at the first end/600 mm at the other end
- Versions with other solid lengths, end lengths and end forms available on request

Technical data



Core identification code
Coloured according to VDE 0293-308 (HD 308)



Based on
HD 22.10 / VDE 0282-10 H07BQ-F



Conductor stranding
Fine wire according to IEC 60228/VDE 0295, class 5 tinned strands



Minimum bending radius
Flexible use: 12.5 x outer diameter



Nominal voltage
U₀/U: 450/750 V



Test voltage
3000 V



Protective conductor
G = with GN-YE protective conductor



Temperature range
-25 °C to +50 °C (spiralled)

Article number	Number of cores and mm ² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)	Copper index (kg/1.000 pieces)
70002750	3 G 1.5	1,500	500	9.0	31.0	207.3
70002751	3 G 1.5	3,000	1,000	9.0	31.0	371.5
70002752	3 G 1.5	4,500	1,500	9.0	31.0	535.6
70002753	3 G 1.5	6,000	2,000	9.0	31.0	699.8
70002754	4 G 1.5	1,500	500	10.0	38.0	305.2
70002755	4 G 1.5	3,000	1,000	10.0	38.0	547.2
70002756	4 G 1.5	4,500	1,500	10.0	38.0	789.1
70002757	4 G 1.5	6,000	2,000	10.0	38.0	1,031.0
70002758	5 G 1.5	1,500	500	11.0	40.0	367.2
70002759	5 G 1.5	3,000	1,000	11.0	40.0	655.2
70002760	5 G 1.5	4,500	1,500	11.0	40.0	936.0
70002761	5 G 1.5	6,000	2,000	11.0	40.0	1,231.2

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products. Each item is packed separately in a plastic bag. Versions with other solid lengths, end lengths and end forms available on request

Similar products

- ÖLFLEX® SPIRAL 400 P refer to page 230
- ÖLFLEX® SPIRAL 540 P refer to page 233

Accessories

- SKINTOP® CLICK / CLICK-R refer to page 654
- SKINTOP® BS refer to page 716
- SKINTOP® BS-M refer to page 657
- SKINTOP® BT refer to page 716
- SKINTOP® CLICK BS refer to page 658

ÖLFLEX® SPIRAL 540 P

Robust, halogen-free, flame-retardant PUR spiral cable with high restoring forces



Info

- High restoring forces
- Halogen-free
- VDE CABLE REGISTRATION currently pending

Benefits

- Extension lengths of up to 3.5 times the unextended spiral length, high recoiling forces
- Safety colour: yellow

Application range

- Harsh conditions
- Mechanical engineering
- Construction industry
- Medical equipment
- In damp interiors or outdoors

Product features

- Halogen-free
- Good resistance of the outer sheath to cutting and abrasion
- High resistance to oil, low temperatures, microbes and hydrolysis
- Special, flame-retardant polyurethane sheath compound

Approvals



Design

- Strands of tinned-copper wires
- Core insulation: TPE
- Outer sheath made of special polyurethane
- Length of straight ends: 1st end = 200 mm, 2nd end = 600 mm
- Versions without the mandatory LAPP designation, but with other solid lengths, end lengths and end forms available on request

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
- Nominal voltage**
0.75 - 1 mm²: U0/U: 300/500 Vac
As from 1.5 mm²: U0/U = 450/750 Vac
- Test voltage**
3000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexible use: -30°C to +50°C

Article number	Number of cores and mm ² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)	Copper index (kg/1.000 pieces)
U0/U: 300/500 V						
73220107	2 X 0.75	1,000	300	6.6	23.0	46.0
73220108	2 X 0.75	2,000	600	6.6	23.0	73.4
73220109	2 X 0.75	3,500	1,000	6.6	23.0	116.6
73220110	2 X 0.75	5,000	1,500	6.6	23.0	158.4
73220111	3 G 0.75	1,000	300	7.0	24.0	60.4
73220112	3 G 0.75	2,000	600	7.0	24.0	103.6
73220113	3 G 0.75	3,500	1,000	7.0	24.0	159.8
73220114	3 G 0.75	5,000	1,500	7.0	24.0	220.3
71220115	4 G 0.75	1,000	300	7.6	29.0	100.8
71220116	4 G 0.75	2,000	600	7.6	29.0	177.1
71220117	4 G 0.75	3,500	1,000	7.6	29.0	270.7
71220118	4 G 0.75	5,000	1,500	7.6	29.0	368.6
71220119	5 G 0.75	1,000	300	8.5	31.0	118.8
71220120	5 G 0.75	2,000	600	8.5	31.0	210.9
71220121	5 G 0.75	3,500	1,000	8.5	31.0	298.8
71220122	5 G 0.75	5,000	1,500	8.5	31.0	439.2
73220123	2 X 1	1,000	300	7.0	24.0	59.5
73220124	2 X 1	2,000	600	7.0	24.0	101.9
73220125	2 X 1	3,500	1,000	7.0	24.0	156.6
73220126	2 X 1	5,000	1,500	7.0	24.0	218.8
73220127	3 G 1	1,000	300	7.4	29.0	104.4
73220128	3 G 1	2,000	600	7.4	29.0	182.7
73220129	3 G 1	3,500	1,000	7.4	29.0	275.5
73220130	3 G 1	5,000	1,500	7.4	29.0	391.5
71220131	4 G 1	1,000	300	8.2	30.0	135.9
71220132	4 G 1	2,000	600	8.2	30.0	222.7
71220133	4 G 1	3,500	1,000	8.2	30.0	349.4
71220134	4 G 1	5,000	1,500	8.2	30.0	491.5
71220135	5 G 1	1,000	300	9.0	32.0	161.2
71220136	5 G 1	2,000	600	9.0	32.0	268.8
71220137	5 G 1	3,500	1,000	9.0	32.0	419.5
71220138	5 G 1	5,000	1,500	9.0	32.0	556.8
73220139	7 G 1	1,000	350	10.9	40.0	238.0
73220140	7 G 1	2,000	700	10.9	40.0	435.2
73220141	7 G 1	3,500	1,200	10.9	40.0	700.4
73220142	7 G 1	5,000	1,700	10.9	40.0	918.0
U0/U: 300/500 V						
73220143	2 X 1.5	1,000	300	8.4	31.0	100.3
73220144	2 X 1.5	2,000	600	8.4	31.0	169.9
73220145	2 X 1.5	3,500	1,000	8.4	31.0	262.7
73220146	2 X 1.5	5,000	1,500	8.4	31.0	378.7
73220147	3 G 1.5	1,000	300	8.9	32.0	145.3
73220148	3 G 1.5	2,000	600	8.9	32.0	232.2
73220149	3 G 1.5	3,500	1,000	8.9	32.0	365.5
73220150	3 G 1.5	5,000	1,500	8.9	32.0	516.0
71220151	5 G 1.5	1,000	350	10.9	40.0	281.5
71220152	5 G 1.5	2,000	700	10.9	40.0	446.4
71220153	5 G 1.5	3,500	1,200	10.9	40.0	779.0
71220154	5 G 1.5	5,000	1,700	10.9	40.0	1,072.0
73220155	7 G 1.5	1,000	350	13.5	52.0	383.8
73220156	7 G 1.5	2,000	700	13.5	52.0	676.7

Assembled cables

Spiralised

Article number	Number of cores and mm ² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)	Copper index (kg/ 1.000 pieces)
73220157	7 G 1.5	3,500	1,200	13.5	52.0	1,153.4
73220158	7 G 1.5	5,000	1,700	13.5	52.0	1,588.7
73220159	3 G 2.5	1,000	350	10.6	40.0	273.6
73220160	3 G 2.5	2,000	700	10.6	40.0	460.8
73220161	3 G 2.5	3,500	1,200	10.6	40.0	770.4
73220162	3 G 2.5	5,000	1,700	10.6	40.0	1,022.4
71220163	5 G 2.5	1,000	350	13.4	51.0	498.0
71220164	5 G 2.5	2,000	700	13.4	51.0	867.6
71220165	5 G 2.5	3,500	1,200	13.4	51.0	1,380.0
71220166	5 G 2.5	5,000	1,700	13.4	51.0	1,884.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products. Versions without the mandatory LAPP designation, but with other solid lengths, end lengths and end forms available on request

Similar products

- ÖLFLEX® SPIRAL 400 P refer to page 230
- ÖLFLEX® SPIRAL 540 P with angular, isolated ground plug refer to page 234

Accessories

- SKINTOP® CLICK / CLICK-R refer to page 654

ÖLFLEX® SPIRAL 540 P with angular, isolated ground plug

Robust spiral cable with high restoring forces and earthing-type plug



Info

- Robust
- High restoring forces
- With angular earthing-type plug

Benefits

- Extension lengths of up to 3.5 times the unextended spiral length, high recoiling forces
- Safety colour: yellow

Application range

- Harsh conditions
- Mechanical engineering
- Construction industry
- Medical equipment
- In damp interiors or outdoors

Product features

- Good resistance of the outer sheath to cutting and abrasion
- High resistance to oil, low temperatures, microbes and hydrolysis
- Special, flame-retardant polyurethane sheath compound
- 16-A connector with protection rating IP 20

Approvals



- The VDE marking approval (VDE type certification) refers to the connector

Design

- Cable: ÖLFLEX(R) SPIRAL 540 P based on ÖLFLEX(R) 540 P
- Strands of tinned-copper wires
- Core insulation: TPE
- Outer sheath made of special polyurethane
- Length of straight ends: 1st end = 200 mm with moulded angular earthing-type plug, 2nd end = 600 mm with 30 mm stripping
- Other solid lengths, end lengths and end forms available on request
- 2-pin, angular plug with twin earthed contact system, extruded

Technical data

- Core identification code**
HD 308/VDE 0293-308: 3-core with protective conductor
- Approvals**
Plug: DIN VDE 620-1/standard sheet DIN 49441 R2
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Nominal voltage**
U₀: 250 V ac
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
- Temperature range**
Flexible use: -30°C to +50°C

Article number	Number of cores and mm ² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)	Copper index (kg/1.000 pieces)
73220852	3 G 0.75	1,000	300	7.0	24.0	70.1
73220853	3 G 0.75	2,000	600	7.0	24.0	122.8
73220854	3 G 0.75	3,500	1,000	7.0	24.0	193.2
73220855	3 G 1	1,000	300	7.4	29.0	110.0
73220856	3 G 1	2,000	600	7.4	29.0	196.7
73220863	3 G 1	3,500	1,000	7.4	29.0	312.3
73220860	3 G 1.5	1,000	300	8.9	32.0	148.6
73220861	3 G 1.5	2,000	600	8.9	32.0	262.8
73220862	3 G 1.5	3,500	1,000	8.9	32.0	415.1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. 1 piece in each polyester bag. Photographs are not to scale and do not represent detailed images of the respective products.

Versions without the mandatory LAPP designation, but with other solid lengths, end lengths and end forms (not necessarily VDE-registered) available on request. Please observe the safety information as per DIN VDE 0620-1, Plugs and socket-outlets for household and similar purposes - Part 1: General requirements, appendix E: "Installation only by persons with the relevant electrotechnical expertise and experience!"

Similar products

- ÖLFLEX® SPIRAL 540 P refer to page 233

UNITRONIC® SPIRAL

Spiral cable with outer PUR sheath and overall shielding for exact impulse transmission



Info

- Secure against electrical interferences



Benefits

- Overall screening prevents high frequency interference and guarantees accurate signal transmission
- Extended lengths of up to 4 times the unextended spiral length

Application range

- In measurement and control engineering
- Wherever screened cables with smallest dimensions are required

Product features

- Abrasion and cut-resistant
- Very high flexibility

Approvals



Design

- Strands of bare copper wires
- Core insulation: Based on PVC
- Screening: wrapped with braided copper wires
- Outer sheath: PUR compound
- Versions without the mandatory LAPP designation, but with other solid lengths, end lengths and end forms available on request

Technical data

- Core identification code**
DIN 47100
- Peak operating voltage**
250 V (not for power transmission)
- Specific insulation resistance**
> 10 GOhm x cm
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/
IEC 60228 class 6
- Test voltage**
1200 V
- Temperature range**
Flexible use: -5°C to +50°C

Article number	Number of cores and mm² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)	Copper index (kg/1.000 pieces)
73220200	2 x 0.14	400	100	4.0	15.0	16.5
73220201	2 x 0.14	800	200	4.0	15.0	23.8
73220202	2 x 0.14	1,200	300	4.0	15.0	29.7
73220203	2 x 0.14	1,600	400	4.0	15.0	36.9
73220204	2 x 0.14	2,000	500	4.0	15.0	48.0
73220205	3 x 0.14	400	100	4.2	18.0	21.0
73220206	3 x 0.14	800	200	4.2	18.0	30.8
73220207	3 x 0.14	1,200	300	4.2	18.0	43.5
73220208	3 x 0.14	1,600	400	4.2	18.0	54.8
73220209	3 x 0.14	2,000	500	4.2	18.0	63.8
73220210	4 x 0.14	400	100	4.4	19.0	23.4
73220211	4 x 0.14	800	200	4.4	19.0	33.6
73220212	4 x 0.14	1,200	300	4.4	19.0	45.8
73220213	4 x 0.14	1,600	400	4.4	19.0	58.6
73220214	4 x 0.14	2,000	500	4.4	19.0	67.2
73220215	5 x 0.14	400	100	5.1	20.0	24.4
73220216	5 x 0.14	800	200	5.1	20.0	38.1
73220217	5 x 0.14	1,200	300	5.1	20.0	50.4
73220218	5 x 0.14	1,600	400	5.1	20.0	60.4
73220219	5 x 0.14	2,000	500	5.1	20.0	72.0
73220220	6 x 0.14	400	100	5.4	21.0	31.1
73220221	6 x 0.14	800	200	5.4	21.0	44.8
73220222	6 x 0.14	1,200	300	5.4	21.0	56.3
73220223	6 x 0.14	1,600	400	5.4	21.0	77.9
73220224	6 x 0.14	2,000	500	5.4	21.0	73.9
73220230	12 x 0.14	400	100	7.0	27.0	56.4
73220231	12 x 0.14	800	200	7.0	27.0	95.2
73220232	12 x 0.14	1,200	300	7.0	27.0	118.1
73220233	12 x 0.14	1,600	400	7.0	27.0	161.0
73220234	12 x 0.14	2,000	500	7.0	27.0	179.2
73220235	18 x 0.14	400	100	7.8	29.0	75.1
73220236	18 x 0.14	800	200	7.8	29.0	110.5
73220237	18 x 0.14	1,200	300	7.8	29.0	150.2
73220238	18 x 0.14	1,600	400	7.8	29.0	198.9
73220239	18 x 0.14	2,000	500	7.8	29.0	221.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Photographs are not to scale and do not represent detailed images of the respective products.
 Versions without the mandatory LAPP designation, but with other solid lengths, end lengths and end forms available on request

Accessories

- SKINTOP® CLICK / CLICK-R refer to page 654

Assembled cables

Connection and extension cables

ÖLFLEX® PLUG H03VV-F Net Connection Cable

PVC net connection cable for electrical devices and machines



ÖLFLEX® PLUG H03VV-F Net Connection Cable



Info

- Other colours and designs are available upon request

■ Application range

- Electrical devices
- Appliances and machinery

■ Product features

- For additional information regarding international plugs, please refer to our cable configurator at www.lappkabel.de
- Apart from the cable related application restrictions to be paid attention to according to the application standard HD 516/VDE 0298-300 for this PVC cable H03VV-F, the fact that brighter outer sheath colours deviating from black significantly reduce the UV resistance of the outer sheath and, thus, the outdoor usability of the entire, finished cable has to be respected, too

■ Approvals



■ Design

- 1st end: Gated, rectangular earthing-type plug with double earthing contact
- 2nd end: 30 mm dismantled, with protection sleeves for the ends of the conductor
- Alternatively, on request: 1st end with moulded angular earthing-type plug with twin earthed contact, 2nd end with moulded, straight IEC coupling (see image)

■ Technical data

	Core identification code HD 308/VDE 0293-308: 3-core with protective conductor
	Approvals refer to above
	Conductor stranding Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
	Nominal voltage U ₀ : 250 V ac
	Test voltage 2000 V
	Protective conductor G = with GN-YE protective conductor
	Temperature range Flexible use: -5°C to +70°C

Article number	Number of cores and mm ² per conductor	Colour	Cable diameter (mm)	Length (m)	Copper index (kg/1.000 pieces)
1st end: moulded angular earthing-type plug with double earthed contact					
2nd end: 30 mm stripped, with conductor end sleeves					
70261130	3 G 0.75	black	5.4 - 6.8	1.5	32.4
70261131	3 G 0.75	black	5.4 - 6.8	2.0	43.2
70261132	3 G 0.75	black	5.4 - 6.8	3.0	64.8
70261136	3 G 0.75	grey	5.4 - 6.8	1.5	32.4
70261137	3 G 0.75	grey	5.4 - 6.8	2.0	43.2
70261138	3 G 0.75	grey	5.4 - 6.8	3.0	64.8
70261133	3 G 0.75	white	5.4 - 6.8	1.5	32.4
70261134	3 G 0.75	white	5.4 - 6.8	2.0	43.2
70261135	3 G 0.75	white	5.4 - 6.8	3.0	64.8

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Photographs are not to scale and do not represent detailed images of the respective products.

Please observe the safety information as per DIN VDE 0620-1, Plugs and socket-outlets for household and similar purposes - Part 1: General requirements, appendix E: "Installation only by persons with the relevant electrotechnical expertise and experience!"

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

ÖLFLEX® PLUG H05VV-F Net Connection Cable

PVC net connection cable for electrical devices and machines



Info

- Other colours and designs are available upon request



ÖLFLEX® PLUG H05VV-F Net Connection Cable

Application range

- Electrical devices
- Appliances and machinery

Product features

- For additional information regarding international plugs, please refer to our cable configurator at www.lappkabel.de
- Apart from the cable related application restrictions to be paid attention to according to the application standard HD 516/VDE 0298-300 for this PVC cable H05VV-F, the fact that brighter outer sheath colours deviating from black significantly reduce the UV resistance of the outer sheath and, thus, the outdoor usability of the entire, finished cable at direct sun irradiation has to be respected, too

Approvals



Design

- 1st end: Gated, rectangular earthing-type plug with double earthing contact
- 2nd end: 30 mm dismantled, with protection sleeves for the ends of the conductor
- Alternatively
 - 1st end: Gated, rectangular earthing-type plug with double earthing contact
 - 2nd end: straight, 3-pin IEC coupling, moulded

Technical data

- Core identification code**
According to VDE 0293-308 (table T9)
- Approvals**
refer to above
- Conductor stranding**
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
- Nominal voltage**
U₀: 250 V ac
- Test voltage**
2000 V
- Protective conductor**
G = with GN-YE protective conductor
- Temperature range**
Flexible use: -5°C to +70°C

Article number	Number of cores and mm ² per conductor	Colour	Cable diameter (mm)	Length (m)	Copper index (kg/1.000 pieces)
1st end: moulded angular earthing-type plug with double earthed contact					
2nd end: straight, 3-pin C13 IEC coupling, moulded					
73222334	3 G 1	black	6.3 - 8.0	2.5	72.5
73222336	3 G 1	grey	6.3 - 8.0	2.5	72.5
73222381	3 G 1.5	grey	7.4 - 9.4	5.0	12.9
73222335	3 G 1	white	6.3 - 8.0	2.5	72.5
2nd end: rectangular, 3-pin C13 IEC coupling, moulded					
74320106	3 G 1.5	black	7.4 - 9.4	3.5	101.5
74320092	3 G 1.5	black	7.4 - 9.4	7.5	324.0
1st end: moulded angular earthing-type plug with double earthed contact					
2nd end: 30 mm stripped, with conductor end sleeves					
70261139	3 G 1	black	6.3 - 8.0	1.5	43.5
70261140	3 G 1	black	6.3 - 8.0	2.0	58.0
70261141	3 G 1	black	6.3 - 8.0	3.0	87.0
70261166	3 G 1	black	6.3 - 8.0	5.0	145.0
70261145	3 G 1	grey	6.3 - 8.0	1.5	43.5
70261146	3 G 1	grey	6.3 - 8.0	2.0	58.0
70261147	3 G 1	grey	6.3 - 8.0	3.0	87.0
70261143	3 G 1	white	6.3 - 8.0	2.0	58.0
70261144	3 G 1	white	6.3 - 8.0	3.0	87.0
70261148	3 G 1.5	black	7.4 - 9.4	1.5	64.5
70261149	3 G 1.5	black	7.4 - 9.4	2.0	86.0
70261150	3 G 1.5	black	7.4 - 9.4	3.0	129.0
70261160	3 G 1.5	black	7.4 - 9.4	5.0	215.0
70261185	3 G 1.5	grey	7.4 - 9.4	1.0	43.2
70261154	3 G 1.5	grey	7.4 - 9.4	1.5	64.5
70261155	3 G 1.5	grey	7.4 - 9.4	2.0	86.0
70261156	3 G 1.5	grey	7.4 - 9.4	3.0	129.0
70362272	3 G 1.5	grey	7.4 - 9.4	4.0	172.0
70261151	3 G 1.5	white	7.4 - 9.4	1.5	64.5
70261152	3 G 1.5	white	7.4 - 9.4	2.0	86.0
70261153	3 G 1.5	white	7.4 - 9.4	3.0	129.0
70261163	3 G 2.5	black	9.2 - 11.4	3.0	216.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Photographs are not to scale and do not represent detailed images of the respective products.

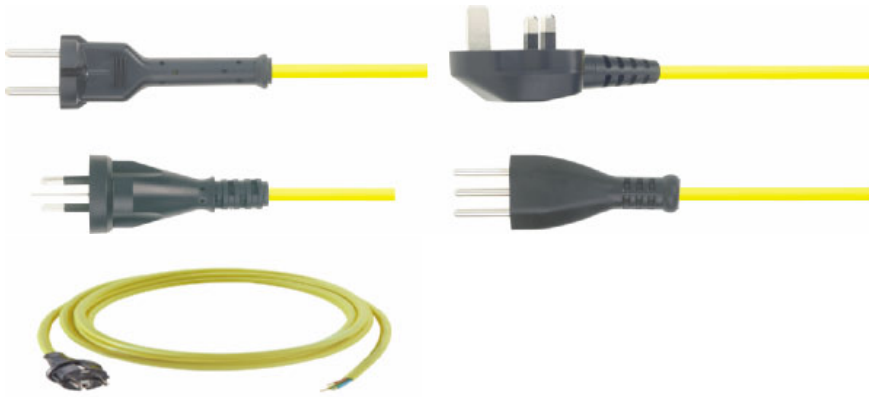
Please observe the safety information as per DIN VDE 0620-1, Plugs and socket-outlets for household and similar purposes - Part 1: General requirements, appendix E: "Installation only by persons with the relevant electrotechnical expertise and experience!"

Assembled cables

Connection and extension cables

ÖLFLEX® PLUG 540 P Connection Cable

Robust, VDE-registered connecting cable with DIN/VDE or international plugs



Info

- Available with international plugs
- Safety colour: yellow
- Images are for illustration purposes only

Benefits

- VDE cable registration: LAPP ÖLFLEX(R) 540 P, sold by the metre and assembled to size
- Safety colour: yellow
- VDE marking approval/VDE type certification for the straight central plug according to DIN/VDE in the item numbers table

- The VDE type certification/marketing approval refers to moulded DIN/VDE connectors. The related certifications can be found in the grey "Technical data" box
- The VDE registration refers to the "ÖLFLEX(R) 540 P" cable from U.I. Lapp GmbH used for these piece good assemblies

Application range

- Harsh conditions
- Mechanical engineering
- Construction industry
- Medical equipment
- In damp interiors or outdoors

Design

- Strands of tinned-copper wires
- Core insulation: TPE
- Outer sheath made of special polyurethane
- 1st end: Gated, straight contour or earthing-type plug
- 1st option for DIN/VDE connector with type certification: 2-core ÖLFLEX(R) 540 P cable in conjunction with 2-pin, straight, extruded, 16 A/250 Vac-to-ground DIN/VDE central contour plug without earthed contact according to DIN VDE 0620-1/DIN 49406-R and with plug protection rating IP 20
- 2nd alternative of DIN/VDE type certified plug: 3-core ÖLFLEX(R) 540 P cable in conjunction with 2-pole, straight, moulded, splash water protected, central, 16A/250Vac-to-ground, isolated ground DIN/VDE plug with double protection/earthing contact/pin system according to DIN VDE 0620-1/DIN 49441-R2/DIN 49441-2-AR2 and with plug protection type/category IP 44
- 2nd end: 30 mm dismantled, with protection sleeves for the ends of the conductor

Product features

- Good resistance of the outer sheath to cutting and abrasion
- High resistance to oil, low temperatures, microbes and hydrolysis
- Special, flame-retardant polyurethane sheath compound
- The products shown are also available for Switzerland, Australia, Denmark, Italy and the UK without the LAPP/ÖLFLEX name or LAPP certification on request. Please refer to our cable configuration tool, available online at www.lappkabel.de, for more details

Approvals



Technical data



Core identification code
According to VDE 0293-308 (table T9)



Approvals
Cable ÖLFLEX(R) 540 P: VDE reg. no. 6583 - 300/500 VAC up to 1.0 mm²; VDE reg. no. 6584 - 450/750 VAC as from 1.5 mm²
Harnesses 2-pole cable with straight, moulded, central contour plug without protective/earthing contact/pins: Plug type certification and marking licence DIN VDE 0620-1/DIN 49406-R; Harnesses 3-pole cable with straight, moulded, splash water protected, central isolated ground plug with double/outline protection/earthing contact by means of ground pins: Plug type certification and marking licence DIN VDE 0620-1/DIN 49441-R2/DIN 49441-2-AR2 in conjunction with plug protection type/category IP 44



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
Fine wire according to VDE 0295 Class 5/IEC 60228 Class 5



Minimum bending radius
Occasional flexing: 10 x outer diameter
Fixed installation: 4 x outer diameter



Nominal voltage
U₀: 250 V ac



Test voltage
Assembly: 2000 V
ÖLFLEX(R) 540 P: 3000 V



Protective conductor
G = with GN-YE protective conductor
X = without protective conductor



Temperature range
Occasional flexing and fixed installation: -40 °C to +80 °C

Article number	Number of cores and mm ² per conductor	Cable diameter (mm)	Length (m)	Copper index (kg/1.000 pieces)
1st option for DIN/VDE connector with type certification: 2-core ÖLFLEX(R) 540 P cable in conjunction with 2-pin, straight, extruded, 16 A/250 Vac-to-ground DIN/VDE central contour plug without earthed contact according to DIN VDE 0620-1/DIN 49406-R and with plug protection rating IP 20				
73220842	2 X 1	7.0	2.0	38.4
73220843	2 X 1	7.0	3.5	67.2
73220844	2 X 1	7.0	5.0	96.0
73221558	2 X 1.5	8.4	2.0	58.0
73221559	2 X 1.5	8.4	3.0	101.5
73221560	2 X 1.5	8.4	5.0	145.0
2nd alternative of DIN/VDE type certified plug: 3-core ÖLFLEX(R) 540 P cable in conjunction with 2-pole, straight, moulded, splash water protected, central, 16A/250Vac-to-ground, isolated ground DIN/VDE plug with double protection/earthing contact/pin system according to DIN VDE 0620-1/DIN 49441-R2/DIN 49441-2-AR2 and with plug protection type/category IP 44				
73220846	3 G 0.75	7.0	2.0	43.2
73220847	3 G 0.75	7.0	3.5	75.6
73220848	3 G 0.75	7.0	5.0	108.0
73221561	3 G 1	7.4	2.0	58.0
73221562	3 G 1	7.4	3.5	101.5
73221563	3 G 1	7.4	5.0	145.0
73220849	3 G 1.5	8.9	2.0	86.0
73220850	3 G 1.5	8.9	3.5	150.6
73220851	3 G 1.5	8.9	5.0	215.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

1 piece in each polyester bag

Photographs are not to scale and do not represent detailed images of the respective products.

Please observe the safety information as per DIN VDE 0620-1, Plugs and socket-outlets for household and similar purposes - Part 1: General requirements, appendix E: "Installation only by persons with the relevant electrotechnical expertise and experience!"

Accessories

- SKINTOP® CLICK / CLICK-R refer to page 654

ÖLFLEX® PLUG Extension Cable 540 P safety yellow

Earthing-type extension cable with straight plug and coupling

Application range

- Mechanical engineering
- Construction industry
- Agricultural equipment
- In damp interiors or outdoors

Product features

- Other lengths, customised versions, cable types and plug versions are available upon request
- Customised printing is available upon request

Approvals




Design

- Mounted, straight earthing-type plug (16 amp., 250 V, solid rubber, colour: black) in accordance with DIN 49440/441, protection rating: IP 44
- Mounted, straight earthing-type coupling with rubber cover (16 A, 250 V, solid rubber, colour: black) in accordance with DIN 49440/441, protection rating: IP 44



Technical data

 **Nominal voltage**
U₀: 250 V ac

Article number	Number of cores and mm ² per conductor	Cable diameter (mm)	Length (m)	Copper index (kg/1.000 pieces)
73222337	3 G 1.5	8.9	5.0	215.0
73222322	3 G 1.5	8.9	10.0	430.0
73222375	3 G 1.5	8.9	15.0	645.0
73222323	3 G 1.5	8.9	25.0	1,075.0
73222324	3 G 1.5	8.9	50.0	2,150.0
73222385	3 G 2.5	10.6	5.0	360.0
73222325	3 G 2.5	10.6	10.0	720.0
73222386	3 G 2.5	10.6	15.0	1,080.0
73222326	3 G 2.5	10.6	25.0	1,800.0
73222327	3 G 2.5	10.6	50.0	3,600.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® PLUG Extension Cable H07RN-F

Earthing-type extension cable with straight plug and coupling

Application range

- Mechanical engineering
- Construction industry
- Agricultural equipment
- In damp interiors or outdoors

Product features

- Other lengths, customised versions, cable types and plug versions are available upon request
- Customised printing is available upon request

Approvals




Design

- Mounted, straight earthing-type plug (16 amp., 250 V, solid rubber, colour: black) in accordance with DIN 49440/441, protection rating: IP 44
- Mounted, straight earthing-type coupling with rubber cover (16 A, 250 V, solid rubber, colour: black) in accordance with DIN 49440/441, protection rating: IP 44



Technical data

 **Nominal voltage**
U₀: 250 V ac

Article number	Number of cores and mm ² per conductor	Cable diameter (mm)	Length (m)	Copper index (kg/1.000 pieces)
73222383	3 G 1.5	9.6 - 12.5	5.0	216.0
73222328	3 G 1.5	9.6 - 12.5	10.0	432.0
73222329	3 G 1.5	9.6 - 12.5	25.0	1,075.0
73222330	3 G 1.5	9.6 - 12.5	50.0	2,150.0
73222384	3 G 2.5	11.5 - 14.5	5.0	360.0
73222331	3 G 2.5	11.5 - 14.5	10.0	720.0
73222332	3 G 2.5	11.5 - 14.5	25.0	1,800.0
73222333	3 G 2.5	11.5 - 14.5	50.0	3,600.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

Assembled cables

Connection and extension cables

ÖLFLEX® PLUG CEE Connection/ Extension Cable without phase shifter

H07RN-F-based connecting and extension cable for three-phase current



ÖLFLEX® PLUG CEE Connection/ Extension Cable without phase shifter



Info

- Formerly: ÖLFLEX PLUG CEE (400 V) Connection / Extension Cable

Application range

- For connections to any three-phase A.C. consumers
- Machines and systems on building sites
- Dry or damp rooms as well as outdoors taking into account HD 516/VDE 0298-300

Product features

- Also available with phase shifter (engine direction can be changed)
- Other dimensions, lengths, connectors, designs and customised versions are available upon request
- Customised printing is available upon request

Approvals



Design

- Mounted 5-pin CEE plug, 400 V, red, 6 o'clock in accordance with VDE 0623/EN 60309-2, splash-proof IP 44
- 80 mm stripped, with conductor end sleeves
- Mounted 5-pin CEE coupling, 400 V, red, 6 o'clock in accordance with VDE 0623/EN 60309-2, splash-proof IP 44

Technical data

- Core identification code**
According to VDE 0293-308 (table T9)
- Approvals**
H07RN-F
VDE 0282 Part 4/HD 22.4
- Based on**
VDE 0282
- Specific insulation resistance**
1 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
- Minimum bending radius**
Flexible use: 15 x cable diameter
- Nominal voltage**
U₀/U: 450/750 V
- Test voltage**
2500 V
- Temperature range**
Flexible use: -25°C to +60°C

Article number	Plug amps	Number of cores and mm² per conductor	Cable diameter (mm)	Length (m)	Copper index (kg/1.000 pieces)
ÖLFLEX® PLUG CEE connection cable					
71222231	16	5 G 1.5	11.2 - 14.4	2.5	180.0
71222239	16	5 G 1.5	11.2 - 14.4	5.0	360.0
71222232	16	5 G 2.5	13.3 - 17.0	2.5	300.0
71222240	16	5 G 2.5	13.3 - 17.0	5.0	600.0
71222241	32	5 G 2.5	13.3 - 17.0	5.0	600.0
71222234	32	5 G 4	15.6 - 19.9	2.5	480.0
71222242	32	5 G 4	15.6 - 19.9	5.0	960.0
71222243	32	5 G 6	17.5 - 22.2	5.0	1,440.0
ÖLFLEX® PLUG CEE extension cable					
71222292	16	5 G 1.5	11.2 - 14.4	10.0	720.0
71222295	16	5 G 2.5	13.3 - 17.0	10.0	1,200.0
71222296	16	5 G 2.5	13.3 - 17.0	25.0	3,000.0
71222298	32	5 G 2.5	13.3 - 17.0	10.0	1,200.0
71222299	32	5 G 2.5	13.3 - 17.0	25.0	3,000.0
71222301	32	5 G 4	15.6 - 19.9	10.0	1,920.0
71222302	32	5 G 4	15.6 - 19.9	25.0	4,800.0
71222304	32	5 G 6	17.5 - 22.2	10.0	2,880.0
71222305	32	5 G 6	17.5 - 22.2	25.0	7,200.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Photographs are not to scale and do not represent detailed images of the respective products.

Please observe the safety information as per DIN VDE 0620-1, Plugs and socket-outlets for household and similar purposes - Part 1: General requirements, appendix E: "Installation only by persons with the relevant electrotechnical expertise and experience!"

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

ÖLFLEX® PLUG CEE Connection/ Extension Cable with phase shifter

H07RN-F-based connecting and extension cable for three-phase current



Info

- Formerly: ÖLFLEX PLUG CEE (400 V) Connection / Extension Cable



ÖLFLEX® PLUG CEE Connection/ Extension Cable with phase shifter

Application range

- For connections to any three-phase A.C. consumers
- Machines and systems on building sites
- Dry or damp rooms as well as outdoors taking into account HD 516/VDE 0298-300

Product features

- Also available with phase shifter (engine direction can be changed)
- Other dimensions, lengths, connectors, designs and customised versions are available upon request
- Customised printing is available upon request

Approvals



Design

- Mounted 5-pin CEE plug, 400 V, red, 6 o'clock in accordance with VDE 0623/EN 60309-2, splash-proof IP 44
- 80 mm stripped, with conductor end sleeves
- Mounted 5-pin CEE coupling, 400 V, red, 6 o'clock in accordance with VDE 0623/EN 60309-2, splash-proof IP 44

Technical data

- Core identification code**
According to VDE 0293-308 (table T9)
- Approvals**
H07RN-F
VDE 0282 Part 4/HD 22.4
- Based on**
VDE 0282
- Specific insulation resistance**
1 GOhm x cm
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
Flexible use: 15 x cable diameter
- Nominal voltage**
U₀/U: 450/750 V
- Test voltage**
2500 V
- Temperature range**
Flexible use: -25°C to +60°C

Article number	Plug amps	Number of cores and mm ² per conductor	Cable diameter (mm)	Length (m)	Copper index (kg/1.000 pieces)
71002837	16	5 G 1.5	11.2 - 14.4	3.5	252.0
71002840	16	5 G 2.5	13.3 - 17.0	3.5	420.0
71002843	16	5 G 1.5	11.2 - 14.4	3.5	252.0
71002844	16	5 G 1.5	11.2 - 14.4	5.0	360.0
71002846	16	5 G 2.5	13.3 - 17.0	3.5	420.0
71002847	16	5 G 2.5	13.3 - 17.0	5.0	600.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

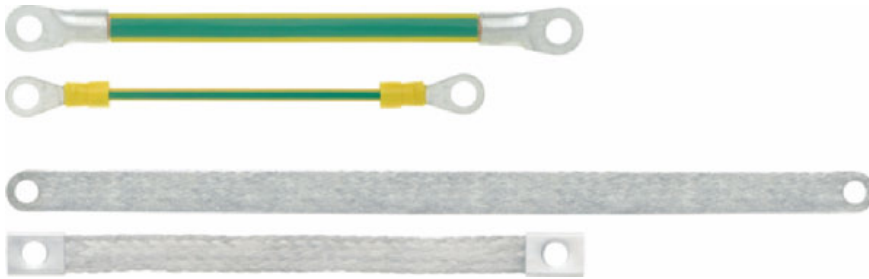
Photographs are not to scale and do not represent detailed images of the respective products.

Please observe the safety information as per DIN VDE 0620-1, Plugs and socket-outlets for household and similar purposes - Part 1: General requirements, appendix E: "Installation only by persons with the relevant electrotechnical expertise and experience!"

Assembled cables

Ground straps

Ground Straps / Flat Ground Straps



Application range

- Control cabinet manufacturing
- The protective earth safety measure is prescribed by standard
- Fixed and moving metal parts, such as doors in switch cabinet construction, must be earthed

Product features

- Fixed lengths for M6 and M8 screws

Approvals



Design

- Ground straps:
 - Strands of bare copper wires
 - PVC-based core insulation
 - Assembled with ring cable lugs
- Pressure-welded flat ground straps:
 - Strand made of tinned-copper wires
 - Welded ends
- Flat ground straps with sleeves:
 - Strands made of tinned-copper wires
 - Assembled with pressed contact sleeves

Technical data

- Core identification code**
Assembled ground straps
green/yellow
- Conductor stranding**
Assembled ground straps
IEC 60 228 Class 6
Assembled flat ground straps
IEC 60 228 Class 6, tin-plated
Extra-fine wire
- Minimum bending radius**
Assembled ground straps
7 x outer diameter
Assembled flat ground straps
5 x outer diameter
- Test voltage**
Assembled ground straps
2500 V
- Temperature range**
Assembled ground straps
-30°C to +70°C
Assembled flat ground straps
-5°C to +70°C

Artikelnummer	Cross-section (mm ²)	Article designation	For	Length (mm)	Copper index (kg/ 1.000 pieces)	PU
Ground straps						
4571120	4	Ground strap 1 x 4 / M6 / 170 mm	M6	170	6.5	25
4571121	16	SZ 2565.000/EB	M6	170	26.2	25
4571122	25	SZ 2566.000/EB	M6	170	40.8	25
4571123	4	SZ 2567.000/EB	M8	300	11.4	25
4571124	16	SZ 2568.000/EB	M8	300	46.2	25
4571125	25	SZ 2569.000/EB	M8	300	72.0	25
Pressure-welded flat ground straps						
4571132	10	SZ 2412.210/FEP	M6	200	18.0	25
4571133	16	SZ 2412.216/FEP	M8	200	29.0	25
4571134	25	SZ 2412.225/FEP	M8	200	45.0	25
4571135	10	SZ 2412.310/FEP	M6	300	27.0	25
4571136	16	SZ 2412.316/FEP	M8	300	43.5	25
4571137	25	SZ 2412.325/FEP	M8	300	67.5	25
Flat ground straps with sleeves						
4571126	10	SZ 2412.210/FEH	M6	200	18.0	25
4571127	16	SZ 2412.216/FEH	M8	200	29.0	25
4571128	25	SZ 2412.225/FEH	M8	200	45.0	25
4571129	10	SZ 2412.310/FEH	M6	300	27.0	25
4571130	16	SZ 2412.316/FEH	M8	300	43.5	25
4571131	25	SZ 2412.325/FEH	M8	300	67.5	25

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

Pre-wired front plug for PLC SIMATIC® S7-300



Info

- In addition to our standard types, other versions with different colours are also available upon request as UNITRONIC® LiYCY, or in tension spring design
- We would be glad to help you find solutions for your specific requirements



Benefits

- Pre-assembled and pre-wired front plugs for *SIMATIC® S7, the leading supplier of programmable controllers (PLCs) around the world
- Single cores used are extra-thin and allow space-saving installation

Product features

- Original Siemens-connectors are used exclusively
- The diameter is smaller than that of a H05V-K single core (0.5 mm²)

Approvals



- For more information on multi-standard single cores, see UL(MTW)-CSA-HAR Style 1015

Design

- The front plugs are in full contact with the single cores of 0.75 mm² or AWG 22 in dark blue (RAL 5010), cores numbered in white according to the allocation in the plug, spacing approx. 20 mm, opposite end cleanly cut
- Conductor end-sleeves or other contacts are available upon request

Note

- Cutting, marking, stripping, crimping and screwing used to be separate operations but the pre-wired front plug for *SIMATIC® S7 provides you with the following advantages:
- Customise the construction by simply removing the cores
- Quick wiring
- Error minimisation: Mix-up of single cores can be ruled out

Article number	Colour	mm ²	Length (m)	Copper index kg/ 1.000 pieces	Weight (kg/ 1000 pieces)
Pre-wired front plug for PLC SIMATIC® S7-300 (392-1AJ00-0AA0) 20-pin, screw-on version					
70268724	dark blue (RAL 5010)	0.75	1.0	144.0	350
70268409	dark blue (RAL 5010)	0.75	2.0	288.0	500
70267059	dark blue (RAL 5010)	0.75	3.0	432.0	700
70262618	dark blue (RAL 5010)	0.75	4.0	576.0	900
70267060	dark blue (RAL 5010)	0.75	5.0	720.0	1,150
Pre-wired front plug for PLC SIMATIC® S7-300 (392-1AM00-0AA0) 40-pin, screw-on version					
70268725	dark blue (RAL 5010)	0.75	1.0	288.0	800
70268410	dark blue (RAL 5010)	0.75	2.0	576.0	1,000
70268411	dark blue (RAL 5010)	0.75	3.0	864.0	1,400
70260001	dark blue (RAL 5010)	0.75	4.0	1,152.0	1,800
70268412	dark blue (RAL 5010)	0.75	5.0	1,440.0	2,250
70260018	dark blue (RAL 5010) - with UL(MTW) single cores	0.50 / AWG22	2.0	384.0	1,000
70260021	dark blue (RAL 5010) - with UL(MTW) single cores	0.50 / AWG22	5.0	960.0	2,250

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Siemens part designations (SIMATIC® etc.) are registered trademarks of Siemens AG, and are listed for comparison purposes only.
 Article numbers refer to genuine Lapp products.
 Photographs are not to scale and do not represent detailed images of the respective products.

Pre-wired front plug for PLC SIMATIC® S7-400



Pre-wired front plug for PLC SIMATIC® S7-400



Info

- Crimp, screw and spring model for SIMATIC® S7-400
- We would be glad to help you find solutions for your specific requirements

Benefits

- Single cores used are extra-thin and allow space-saving installation

Product features

- Original Siemens-connectors are used exclusively
- The diameter is smaller than that of a H05V-K single core (0.5 mm²)

Approvals



- For more information on multi-standard single cores, see UL(MTW)-CSA-HAR Style 1015

Design

- The front plugs are in full contact with the single cores of 0.75 mm² or AWG 22 in dark blue (RAL 5010), cores numbered in white according to the allocation in the plug, spacing approx. 20 mm, opposite end cleanly cut
- Conductor end-sleeves or other contacts are available upon request

Article number	Colour	mm ²	Length (m)	Copper index kg/1.000 pieces	Weight (kg/1000 pieces)
Pre-wired front plug for PLC SIMATIC® S7-400 (492-1CL00-0AA0) 48-pin, crimp version					
70268421	dark blue (RAL 5010)	0.75	5.0	1,695.0	2,500
Pre-wired front plug for PLC SIMATIC® S7-400 (492-1AL00-0AA0) 48-pin, screw-on version					
70268423	dark blue (RAL 5010)	0.75	3.0	1,017.0	1,600
70268424	dark blue (RAL 5010)	0.75	5.0	1,695.0	2,500
Pre-wired front plug for PLC SIMATIC® S7-400 (492-1BL00-0AA0) 48-pin, spring version					
70260046	dark blue (RAL 5010)	0.75	4.0	1,356.0	2,000
70268427	dark blue (RAL 5010)	0.75	5.0	1,695.0	2,500
70260053	dark blue (RAL 5010) - with UL(MTW) single cores	0.50 / AWG22	2.0	442.0	1,100

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 SIMATIC® is a registered trademark of Siemens AG
 Article numbers refer to genuine Lapp products.
 Photographs are not to scale and do not represent detailed images of the respective products.

New

Type 2 charging cable 7-way spiral one-sided



New

Type 2 cable 7-way spiral two-sided



RoHS ✓



Info

- Assemblies with type 2 coupling available on request

RoHS ✓



Info

- Assemblies with type 2 coupling available on request

Benefits

- Robust
- Resistant to oil, dust and water
- Special cable design for a long service life
- Flexible at low temperatures
- Fire: Low corrosive smoke emission

Application range

- Electric and hybrid cars
- Charging stations for cars

Product features

- Type 2 charging connector according to VDE-AR-E-2623-2
- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

Design

- Cable for 1-phase charging up to 16 A: Ölflex Charge 3G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 16 A: Ölflex Charge 5G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 32 A: Ölflex Charge 5G 6 mm² + 2 x 0.5 mm²
- 16 A charging: every connector has a built-in 680 ohm resistor
- 32 A charging: every connector has a built-in 220 ohm resistor

Technical data

- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Nominal voltage**
400 V
- Temperature range**
-25 °C to +80 °C

Article number	Spiral length, extended (mm)	Outer sheath colour	Copper index (kg/km)	Weight (kg/km)	PU
Type 2 angled connector, orange spiral-cable, cut off cleanly					
74880039	4,000	orange	738.0	2200	1
74880043	4,000	orange	1,170.0	2900	1
74880047	4,000	orange	2,390.0	4500	1
Type 2 straight connector, yellow spiral-cable, cut off cleanly					
74880016	4,000	yellow	738.0	2200	1
74880020	4,000	yellow	1,170.0	2900	1
74880024	4,000	yellow	2,390.0	4500	1
Type 2 angled connector, orange spiralled cable, type 2 angled connector					
74880040	4,000	orange	689.0	2500	1
74880044	4,000	orange	1,090.0	3200	1
74880048	4,000	orange	2,150.0	4600	1
Type 2 straight connector, yellow spiral-cable, type 2 straight connector					
74880017	4,000	yellow	689.0	2500	1
74880021	4,000	yellow	1,090.0	3200	1
74880050	4,000	yellow	2,150.0	4600	1

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products.

Assembled cables

eMobility - Assembled charging line, 7-pin

New

Type 2 charging cable 7-way one-sided



Info

- Assemblies with type 2 coupling available on request

New

Type 2 charging cable 7-way two-sided



Info

- Assemblies with type 2 coupling available on request

Benefits

- Robust
- Resistant to oil, dust and water
- Special cable design for a long service life
- Flexible at low temperatures
- Fire: Low corrosive smoke emission

Application range

- Electric and hybrid cars
- Charging stations for cars

Product features

- Type 2 charging connector according to VDE-AR-E-2623-2
- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

Design

- Cable for 1-phase charging up to 16 A: Ölflex Charge 3G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 16 A: Ölflex Charge 5G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 32 A: Ölflex Charge 5G 6 mm² + 2 x 0.5 mm²
- 16 A charging: every connector has a built-in 680 ohm resistor
- 32 A charging: every connector has a built-in 220 ohm resistor

Technical data



Conductor stranding
Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5



Nominal voltage
400 V



Temperature range
-25°C to +80°C

Article number	Spiral length, extended (mm)	Outer sheath colour	Copper index (kg/km)	Weight (kg/km)	PU
Type 2 angled connector, orange cable, cut off cleanly					
74880037	4,000	orange	335.0	1300	1
74880041	4,000	orange	531.0	1600	1
74880045	4,000	orange	1,216.0	2500	1
Type 2 straight connector, yellow cable, cut off cleanly					
74880014	4,000	yellow	335.0	1300	1
74880018	4,000	yellow	531.0	1600	1
74880022	4,000	yellow	1,216.0	2500	1
Type 2 angled connector, orange cable, type 2 angled connector					
74880038	4,000	orange	342.0	1700	1
74880042	4,000	orange	541.0	2050	1
74880046	4,000	orange	1,216.0	3200	1
Type 2 straight connector, yellow cable, type 2 straight connector					
74880015	4,000	yellow	342.0	1700	1
74880019	4,000	yellow	541.0	2050	1
74880023	4,000	yellow	1,240.0	3200	1

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products.

New

Type 2 charging cable 7-way Helix two-sided



Info

- Dimensionally stable helix design
- Lower space requirement, lightweight design
- Assemblies with type 2 coupling available on request

Benefits

- Retains the patented helix form in daily use
- Resistant to oil, dust and water
- Special cable design for a long service life
- Flexible at low temperatures
- Fire: Low corrosive smoke emission

Application range

- Electric and hybrid cars
- Charging stations for cars

Product features

- Type 2 charging connector according to VDE-AR-E-2623-2
- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

Design

- Cable for 1-phase charging up to 16 A: Ölflex Charge 3G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 16 A: Ölflex Charge 5G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 32 A: Ölflex Charge 5G 6 mm² + 2 x 0.5 mm²
- 16 A charging: every connector has a built-in 680 ohm resistor
- 32 A charging: every connector has a built-in 220 ohm resistor

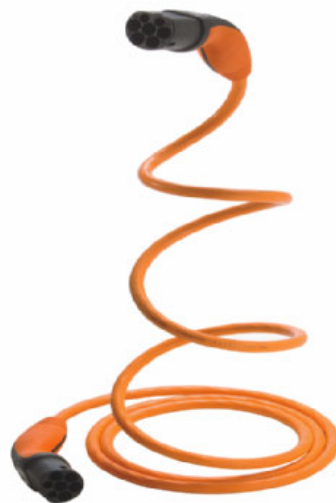
Technical data

- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Nominal voltage**
400 V
- Temperature range**
-25 °C to +80 °C



Article number	Spiral length, extended (mm)	Outer sheath colour	Copper index (kg/km)	Weight (kg/km)	PU
74880051	4,000	orange	355.9	1957	1
74880052	4,000	orange	564.2	2026	1
74880053	4,000	orange	1,293.3	3016	1

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products.



ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

SILVYN®

FLEXIMARK®

ACCESSORIES

APPENDIX

Assembled cables

eMobility - Assembled charging socket, 7-pin

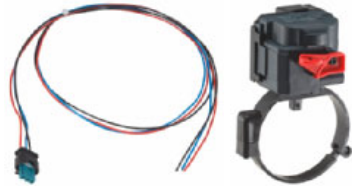
New

Type 2 charging socket



New

Type 2 Accessories



Benefits

Type 2 charging socket

- Pre-assembled for fast installation
- Robust against mechanical impacts

Application range

Type 2 charging socket

- Electric and hybrid cars
- Charging stations for cars

Product features

Type 2 charging socket

- Three different versions for all installation situations
- Optional with hinged lid for increased dust and water protection
- Types for front and back wall assembly
- Type 2 charging connector according to VDE-AR-E-2623-2

Type 2 Accessories

- The electromechanical locking prevents detaching of the connector during charging

Technical data

	Conductor stranding Fine wire according to VDE 0295 Class 5 / IEC 60228 Class 5
	Minimum bending radius 4 x outer diameter (OD) for normal use; 2 x OD for short-term bending
	Nominal voltage 400 V
	Temperature range -25°C to +80°C

Article number	Number of cores and mm ² per conductor	Länge in m	Copper index (kg/km)	PU
Type 2 charging socket, back wall assembly				
74880000	H07V-K 5G4mm ² + 2x 0,5mm ²	1.0	199.6	1
74880001	H07V-K 5G6mm ² + 2x 0,5mm ²	1.0	299.6	1
74880002	H07V-K 5G10mm ² + 2x 0,5mm ²	1.0	489.6	1
Type 2 charging socket, round cover				
74880003	H07V-K 5G4mm ² + 2x 0,5mm ²	1.0	199.6	1
74880004	H07V-K 5G6mm ² + 2x 0,5mm ²	1.0	299.6	1
74880005	H07V-K 5G10mm ² + 2x 0,5mm ²	1.0	489.6	1
Type 2 charging socket, round cover, hinged lid				
74880006	H07V-K 5G4mm ² + 2x 0,5mm ²	1.0	199.6	1
74880007	H07V-K 5G6mm ² + 2x 0,5mm ²	1.0	299.6	1
74880008	H07V-K 5G10mm ² + 2x 0,5mm ²	1.0	489.6	1
Type 2 charging socket, square cover, hinged lid				
74880009	H07V-K 5G4mm ² + 2x 0,5mm ²	1.0	199.6	1
74880010	H07V-K 5G6mm ² + 2x 0,5mm ²	1.0	299.6	1
74880011	H07V-K 5G10mm ² + 2x 0,5mm ²	1.0	489.6	1
Electromechanical lock, actuator				
74880012				1
Supply line for actuator, pigtail				
74880013	3x FLRY bl/rt/sw	1.0		1

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

New

Type F charging cable 3-way spiral



New

Type F charging cable 3-way



Benefits

- Robust
- Resistant to oil, dust and water
- Wear-resistant
- Flexible at low temperatures
- Fire: Low corrosive smoke emission

Application range

- Electric and hybrid cars
- Charging stations for cars

Product features

- Type F charging plug
- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

Design

- Cable for 1-phase charging up to 16 A: Ölflex 540P 3G 2.5 mm²

Technical data



Approvals

IEC 60309
VDE 0623



Conductor stranding

Fine wire according to VDE 0295 Class 5/
IEC 60228 Class 5



Nominal voltage

2+PE: 230V



Temperature range

-25 °C to +80 °C

Article number	Spiral length, extended (mm)	Outer sheath colour	Copper index (kg/km)	Weight (kg/km)	PU
Type F straight connector, yellow spiral-cable, type F straight connector					
74880030	4,000	yellow	519.0	1350	1
Type F straight connector, yellow cable, type F straight connector					
74880029	4,000	yellow	300.0	850	1

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products.

Assembled cables

eMobility - Assembled charging line, 3-pin, 5-pin

New

CEE charging cable 3-way spiral



New

CEE Charging cable 3-way



Benefits

- Robust
- Resistant to oil, dust and water
- Wear-resistant
- Flexible at low temperatures
- Fire: Low corrosive smoke emission

Application range

- Electric and hybrid cars
- Charging stations for cars

Product features

- CEE charging plug, 3-pin
- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

Design

- Cable for 1-phase charging up to 16 A: Ölflex 540P 3G 2.5 mm²

Technical data



Approvals
IEC 60309
VDE 0623



Conductor stranding
Fine wire according to VDE 0295 Class 5/
IEC 60228 Class 5



Nominal voltage
2+PE: 230V



Temperature range
-25°C to +80°C

Article number	Spiral length, extended (mm)	Outer sheath colour	Copper index (kg/km)	Weight (kg/km)	PU
CEE straight 3-pin connector, yellow spiralsed cable, CEE straight 3-pin connector					
74880032	4,000	yellow	598.0	1450	1
CEE straight 3-pin connector, yellow cable, CEE straight 3-pin connector					
74880031	4,000	yellow	300.0	950	1

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

CEE charging cable 5-way spiral



New

CEE charging cable 5-way



Benefits

- Robust
- Resistant to oil, dust and water
- Wear-resistant
- Flexible at low temperatures
- Fire: Low corrosive smoke emission

Application range

- Electric and hybrid cars
- Charging stations for cars

Product features

CEE charging cable 5-way spiral

- CEE charging plug, 5-pin
- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

CEE charging cable 5-way

- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

Design

- Cable for 3-phase charging up to 16 A: Ölflex 540P 5G 2.5 mm²

Technical data



Approvals

IEC 60309
VDE 0623



Conductor stranding

Fine wire according to VDE 0295 Class 5/
IEC 60228 Class 5



Nominal voltage

4+PE: 400V



Temperature range

-25 °C to +80 °C

Article number	Spiral length, extended (mm)	Outer sheath colour	Copper index (kg/km)	Weight (kg/km)	PU
CEE straight 5-pin connector, yellow spiralised cable, CEE straight 5-pin connector					
74880034	4,000	yellow	864.0	2150	1
74880036	4,000	yellow	2,132.0	4600	1
CEE straight 5-pin connector, yellow cable, CEE straight 5-pin connector					
74880033	4,000	yellow	500.0	1400	1
74880035	4,000	yellow	1,199.0	2860	1

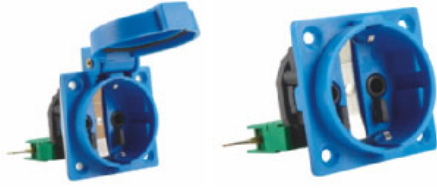
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products.

Assembled cables

eMobility - Assembled charging socket, 3-pin, 5-pin

New

Type F Charging socket 3-way



New

CEE charging socket 3-way



New

CEE charging socket 5-way



Benefits

- Easy to assemble
- Robust against mechanical impacts

Product features

Type F Charging socket 3-way

- Optional with hinged lid for increased dust and water protection
- IP 44
- IP 54 with hinged lid
- Flange 50 x 50 mm
- Bore hole, 38 x 38 mm
- With “normally open” auxiliary contact

CEE charging socket 3-way

- IP 44
- IP 54 with hinged lid
- Flange, 85 x 85 mm
- Bore hole, 70 x 70 mm
- With “normally open” auxiliary contact
- QUICK-CONNECT

CEE charging socket 5-way

- IP 44
- IP 54 with hinged lid
- Flange, 85 x 85 mm
- Bore hole, 70 x 70 mm
- With “normally open” auxiliary contact
- QUICK-CONNECT

Technical data



Approvals
IEC 60309
VDE 0620



Nominal voltage
230 V



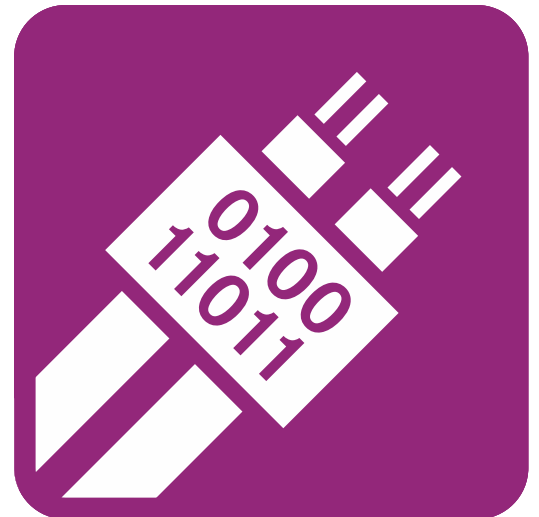
Temperature range
-25°C to +80°C

Article number	Copper index (kg/km)	PU
Type F charging socket, 2+PE, 1-phase charging up to 16 A		
74880025	2,150.0	1
Type F charging socket, 2+PE, with hinged lid, 1-phase charging up to 16 A		
74880026		1
CEE charging socket, 2+PE, with hinged lid, 1-phase charging up to 16 A		
74880027		1
CEE charging socket, 4+PE, with hinged lid, 3-phase charging up to 16 A		
74880028		1
CEE charging socket, 4+PE, with hinged lid, 3-phase charging up to 32 A		
74880049		1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Low frequency data transmission cables	
UNITRONIC® colour codes	256
DIN colour code	258
Halogen-free	269
UL/CSA-approved	272
Highly flexible application	273
Highly flexible and UL/CSA-approved	276
Intrinsically safe circuits	278
Stranded conductor variants	281
Low capacitance	286
Metal foil screened pairs	288
Computer cables (RE)	289
Process control cables (RD)	291
Installation cable for industrial electronics	292
Telephone cables	
Indoor cables	294
Halogen-free installation and fire alarm cables	297
Outdoor cables	299
Cables for bus system AS-INTERFACE	
Sensor/actuator communication	300
Cables for bus systems PROFIBUS-DP/FMS/FIP	
Characteristic impedance: 135 - 165 ohm	302
Accessories for PROFIBUS /-DP	
EPIC® Data Connectors	312
Cables for bus systems RS485/RS422	
Characteristic impedance: 100 - 120 ohm	324
Cables for bus system PROFIBUS-PA	
Characteristic impedance: 100 ohm	326
Cables for bus system DeviceNet	
Characteristic impedance: 120 ohm	327
Cables for bus system CAN UL/CSA-approved	
Accessories for CAN	
EPIC® Data Connectors	330
Cables for bus system Foundation Fieldbus	
Characteristic impedance: 100 ohm	332
Cables for bus system CC-Link	
Impedance: 110 ohm	333
Cables for bus system SAFETY BUS	
Characteristic impedance: 120 ohm	334
Cables for bus system INTERBUS (IBS)	
Characteristic impedance: 100 ohm	335
Cables for bus system EIB	
Characteristic impedance: 75 ohm	337
UNITRONIC® Fieldbus	
3-pin sensor/actuator cordsets	338
4-pin sensor/actuator cordsets	346
5-pin sensor/actuator cordsets	353
8-pin sensor/actuator cables	356
Screened sensor/actuator cordsets	358
Y connectors	360
Valve connectors	364
Passive sensor/actuator boxes	369
Accessories for Sensor/Actuator Boxes	373
Field mountable connectors and wall ducts	377
Active Sensor/Actuator Components	383
Accessories for AS-Interface modules	388
BUS System Components	391
Power cable M12	399
Coxial cables	
High frequencies	401



Low frequency data transmission cables

UNITRONIC® colour codes		UNITRONIC® BUS PB YY	305
UNITRONIC® 100	256	UNITRONIC® BUS PB BURIAL FC	306
UNITRONIC® 100 CY	256	UNITRONIC® BUS PB Y 7-W FC BK	New 306
DIN colour code		UNITRONIC® BUS PB FD P	307
UNITRONIC® LiYY	258	UNITRONIC® BUS PB FD P A	307
UNITRONIC® LiYY A	260	UNITRONIC® BUS PB FD P FC	308
UNITRONIC® LiYCY	261	UNITRONIC® BUS PB FD FRNC FC	309
UNITRONIC® LiYCY A	263	UNITRONIC® BUS PB FD P COMBI	309
UNITRONIC® LiYY (TP)	264	UNITRONIC® BUS PB FD P HYBRID	310
UNITRONIC® LiYCY (TP)	265	UNITRONIC® BUS PB FD Y HYBRID	310
UNITRONIC® LiYCY (TP) A	266	UNITRONIC® BUS PB TORSION	311
UNITRONIC® PUR CP	267	UNITRONIC® BUS PB FESTOON	311
UNITRONIC® PUR CP (TP)	268		
Halogen-free		Accessories for PROFIBUS /-DP	
UNITRONIC® LiHH	269	EPIC® Data Connectors	
UNITRONIC® LiHCH	270	EPIC® Data PROFIBUS Connectors 35° Screw Terminals	312
UNITRONIC® LiHCH (TP)	271	EPIC® Data PROFIBUS Connectors 35° Fast Connect	313
UL/CSA-approved		EPIC® Data PROFIBUS Connectors 90° Screw Terminals	314
UNITRONIC® 300 / UNITRONIC® 300 CY	272	EPIC® Data PROFIBUS Connectors 90° Spring type	315
Highly flexible application		EPIC® Data PROFIBUS Connectors 90° Fast Connect	316
UNITRONIC® FD	273	EPIC® Data PROFIBUS Connectors 90° LED Screw Terminals	317
UNITRONIC® FD CY	274	EPIC® Data PROFIBUS Connectors 90° LED Fast Connect	318
UNITRONIC® FD P plus	275	EPIC® Data PROFIBUS Connectors ATEX Screw Terminals	319
Highly flexible and UL/CSA-approved		EPIC® Data PROFIBUS Connectors REPEATER	320
UNITRONIC® FD CP plus	276	EPIC® Data PROFIBUS Connectors 180° Screw Terminals	321
UNITRONIC® FD CP (TP) plus	277	EPIC® Data PROFIBUS Connectors 180° Fast Connect	322
Intrinsically safe circuits		EPIC® Data PROFIBUS Connectors 90° M12	New 323
UNITRONIC® EB CY (TP)	278		
UNITRONIC® EB JE-LiYCY...BD	279	Cables for bus systems RS485/RS422	
UNITRONIC® EB JE-Y(ST)Y 0,8 BD	280	Characteristic impedance: 100 - 120 ohm	
Stranded conductor variants		UNITRONIC® BUS LD	324
UNITRONIC® LiYCY-CY	281	UNITRONIC® BUS LD FD P	325
UNITRONIC® LiFYCY (TP)	282		
UNITRONIC® CY PiDY (TP)	283	Cables for bus system PROFIBUS-PA	
UNITRONIC® LiYD11Y	284	Characteristic impedance: 100 ohm	
UNITRONIC® ST	285	UNITRONIC® BUS PA	326
Low capacitance			
UNITRONIC® Li2YCY (TP)	286	Cables for bus system DeviceNet	
UNITRONIC® Li2YCY (TP) fine-wired	286	Characteristic impedance: 120 ohm	
UNITRONIC® Li2YCYv (TP)	286	UNITRONIC® DeviceNet THICK + THIN	327
Metal foil screened pairs		UNITRONIC® DeviceNet FD THICK+THIN	328
UNITRONIC® Li2YCY PiMF	288		
Computer cables (RE)		Cables for bus system CAN UL/CSA-approved	
RE-2Y(ST)Yv	289	UNITRONIC® BUS CAN	329
RE-2Y(ST)Yv PiMF	290	UNITRONIC® BUS CAN FD P	329
Process control cables (RD)			
RD-Y(ST)Y	291	Accessories for CAN	
Installation cable for industrial electronics		EPIC® Data Connectors	
JE-Y(ST)Y ...BD	292	EPIC® Data CAN-Bus Connectors 90°	330
JE-LiYCY ...BD	293	EPIC® Data CAN-Bus Connectors 180°	331
Telephone cables		Cables for bus system Foundation Fieldbus	
Indoor cables		Characteristic impedance: 100 ohm	
J-Y(ST)Y ...LG Indoor Cable	294	UNITRONIC® BUS FF	332
J-Y(ST)Y ...LG Fire Alarm Cable	295		
J-2Y(ST)Y ...ST III BD	296	Cables for bus system CC-Link	
Halogen-free installation and fire alarm cables		Impedance: 110 ohm	
J-H(ST)H ...BD	297	UNITRONIC® BUS CC	333
J-H(ST)H ...BD Fire Alarm Cable	298	UNITRONIC® BUS CC FD P FRNC	333
Outdoor cables			
A-2Y(L)2Y ...ST III BD Telephone Outdoor Cable	299	Cables for bus system SAFETY BUS	
A-2YF(L)2Y ...ST III BD Outdoor Cable	299	Characteristic impedance: 120 ohm	
		UNITRONIC® BUS SAFETY	334
Cables for bus system AS-INTERFACE		Cables for bus system INTERBUS (IBS)	
Sensor/actuator communication		Characteristic impedance: 100 ohm	
UNITRONIC® BUS ASI	New 300	UNITRONIC® BUS IBS	335
UNITRONIC® BUS ASI FD	New 301	UNITRONIC® BUS IBS Yv	335
		UNITRONIC® BUS IBS FD P	336
Cables for bus systems PROFIBUS-DP/FMS/FIP		Cables for bus system EIB	
Characteristic impedance: 135 - 165 ohm		Characteristic impedance: 75 ohm	
UNITRONIC® BUS PB	302	UNITRONIC® BUS EIB / KNX	337
UNITRONIC® BUS PB ROBUST	303		
UNITRONIC® BUS PB 105	303	UNITRONIC® Fieldbus	
UNITRONIC® BUS PB FRNC FC	304	3-pin sensor/actuator cordsets	
UNITRONIC® BUS PB ARM	304	S/A cable: M12 connector on free conductor end	338
UNITRONIC® BUS PB Yv	305	S/A cable: M12 socket on free conductor end	New 339
		S/A cable: M12 connector on M12 socket	340
		S/A cable: M12 connector on M8 socket	341
		S/A cable: M8 connector on free conductor end	New 342
		S/A cable: M8 socket on free conductor end	343
		S/A cable: M8 connector on M8 socket	344

S/A cable: M8 connector on M12 socket	345	Field mountable connectors and wall ducts	
4-pin sensor/actuator cordsets		Field mountable S/A connectors M12	New 377
S/A cable: M12 connector on free conductor end	346	Field mountable S/A connectors M8	New 378
S/A cable: M12 socket on free conductor end	New 347	UNITRONIC® SENSOR	379
S/A cable: M12 connector on M12 socket	New 348	S/A M12 flush-type connectors with M16 fastening thread	New 380
S/A cable: M12 connector on M8 socket	349	S/A M12 flush-type connectors with PG9 fastening thread	New 381
S/A cable: M8 connector on free conductor end	New 350	S/A M8 flush-type connectors	382
S/A cable: M8 socket on free conductor end	351	Fitting nut for flush-type connectors	382
S/A cable: M8 connector on M8 socket	New 352	Active Sensor/Actuator Components	
5-pin sensor/actuator cordsets		AS-Interface Modules (IP67)	383
S/A cable: M12 connector on free conductor end	353	AS-Interface Modules (IP30)	384
S/A cable: M12 socket on free conductor end	354	PROFIBUS Modules	385
S/A cable: M12 connector on M12 socket	New 355	DeviceNet Modules	386
8-pin sensor/actuator cables		CANopen Modules	387
S/A cable: M12 connector/socket on free conductor end	New 356	Accessories for AS-Interface modules	
S/A cable: M12 connector on M12 socket	New 357	AS-Interface Distributor	388
Screened sensor/actuator cordsets		AS-Interface counter module	389
S/A cable: shielded, M12 connector on free conductor end	New 358	AS-Interface power supply	389
S/A cable: shielded, M12 socket on free conductor end	New 359	AS-Interface network extension	390
Y connectors		AS-Interface plug terminals	390
S/A cable: straight M12 Y plug on 2x free conductor end	360	BUS System Components	
S/A cable: straight M12 Y plug on 2x M12 socket	361	PROFIBUS cable: M12 connector on free conductor end	New 391
S/A cable: straight M12 Y plug on 2x M8 socket	362	PROFIBUS Cable: M12 connector M12 on M12 socket	New 392
Y distributor	363	DeviceNet/CANopen Cable, M12 connector on free conductor end	393
Valve connectors		S/A DeviceNet/CANopen cable, M12 connector on M12 socket	394
S/A cable: 3-pos., valve connector on free conductor end	364	BUS M12 connectors that can be assembled	395
S/A cable: 3-pos., valve connector on straight M12 plug	365	Terminating resistor M12 for DeviceNet/CANopen/PROFIBUS	396
S/A cable: 5-pos., valve connector on free conductor end, for pressure switch	366	M12 T distributor for PROFIBUS	397
S/A cable: 5-pos., valve connector on straight M12 plug, for pressure switch	367	S/A T-connector M12 as parallel distributor	398
Field mountable valve connectors	New 368	Power cable M12	
Passive sensor/actuator boxes		Power cable: M12 connector on free conductor	399
S/A box with M8 slots and master cable	369	Power cable: straight M12 connector on straight M12 socket	400
S/A box, M8 slots and master cable connection M16/M12	370	Coaxial cables	
S/A box with M12 slots and master cable	New 371	High frequencies	
S/A box with M12 slots and master cable connection	372	Coaxial - RG	401
Accessories for Sensor/Actuator Boxes		Multi coaxial cables RG 59 B/U	402
UNITRONIC® SENSOR master cable bulk stock	373	Coaxial cables RGB	402
M16 socket with connected master cable	374		
M12 socket with connected master cable	375		
Screw plug for unoccupied sockets	376		
Complete connection hood with 4, 6 or 8 slots	376		

UNITRONIC® 100

Control and signal cable with small cross-sections



Info

- UNITRONIC® colour code with protective conductor

UNITRONIC® 100 CY

Screened control and signal cable with small cross-sections



Application range

- These control and signal cables are used in the milliampere range for computer systems, electronic control equipment, office machines, balances etc. and wherever the thinnest possible control cables are required.

Product features

UNITRONIC® 100

- Robust, flexible and resistant outer sheath
- Small outer diameter despite high number of cores
- Flame-retardant according to IEC 60332.1.2
- 3 cores with earth wire (green-yellow)
2 cores (black/blue)

UNITRONIC® 100 CY

- Robust, flexible and resistant outer sheath
- Small outer diameter despite high number of cores
- Cable similar to UNITRONIC® 100, but with copper braiding
- Flame-retardant according to IEC 60332.1.2
- 3 cores with earth wire (green-yellow)
2 cores (black/blue)

Approvals



Design

UNITRONIC® 100

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of PVC
- Outer sheath made of PVC
- Outer sheath colour: grey (RAL 7001)

UNITRONIC® 100 CY

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of PVC
- Inner sheath made of PVC
- For the cross section of 0.14 mm², a polyester tape is used underneath the screen braiding instead of the inner sheath.
- Tinned-copper braiding
- Outer sheath made of PVC
- Outer sheath colour: grey (RAL 7001)

Technical data



Core identification code

Refer to Appendix T7 for the UNITRONIC® colour codes



Mutual capacitance

Approx. 120 nF/km



Peak operating voltage

(not for power applications):
500 V



Based on

VDE 0814: (DIN 47414)
or VDE 0812



Specific insulation resistance

> 10 GOhm x cm



Inductivity

approx. 0.7 mH/km



Conductor stranding

Stranded, fine-wire
0.34 mm², 7-wire



Minimum bending radius UNITRONIC® 100

For flexible use:
15 x outer diameter
Fixed installation: 4 x outer diameter

UNITRONIC® 100 CY

For flexible use: 20 x outer diameter
Fixed installation: 6 x outer diameter



Test voltage

Core/core: 1500 V



Protective conductor

Green-yellow



Temperature range

Fixed installation: -30 °C to +80 °C
Occasional flexing: -5 °C to +70 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® 100				
0028009	2 x 0,14	3.0	2.8	12
0028010	3 x 0,14	3.2	4.2	17
0028011	4 x 0,14	3.4	5.4	19
0028012	5 x 0,14	3.7	7.0	22
0028014	7 x 0,14	4.0	9.8	27
0028015	10 x 0,14	5.0	14.0	41
0028019	24 x 0,14	7.2	33.6	94
0028020	27 x 0,14	7.4	36.5	107
0028023	40 x 0,14	8.9	54.0	152
0028025	52 x 0,14	10.0	72.8	198
0028030	3 x 0,25	3.8	7.5	21
0028031	7 x 0,25	4.9	17.5	48
0028032	10 x 0,25	6.4	25.0	77
0028033	14 x 0,25	6.9	35.0	95
0028034	16 x 0,25	7.3	40.0	112
0028035	21 x 0,25	8.5	52.5	139
0028036	24 x 0,25	9.0	60.0	163
0028037	27 x 0,25	9.2	67.5	171
0028038	30 x 0,25	9.9	75.0	187
0028039	36 x 0,25	10.7	90.0	235
0028040	40 x 0,25	11.6	100.0	266

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0028041	44 x 0,25	12.0	110.0	290
0028042	52 x 0,25	12.5	130.0	343
0028044	61 x 0,25	13.3	152.5	398
0028047	3 x 0,34	4.2	10.5	33
0028048	7 x 0,34	5.5	22.8	62
0028050	14 x 0,34	7.8	47.6	118
0028051	16 x 0,34	8.3	54.4	131
0028054	27 x 0,34	10.8	88.0	208
0028056	36 x 0,34	12.1	118.0	292
0028057	40 x 0,34	13.1	131.0	330
0028059	52 x 0,34	14.6	170.0	424
UNITRONIC® 100 CY				
0034006	2 x 0,14	3.7	12.0	20
0034007	3 x 0,14	3.9	13.0	28
0034008	4 x 0,14	4.1	14.3	33
0034009	5 x 0,14	4.4	15.5	38
0034010	7 x 0,14	4.7	20.3	49
0034011	10 x 0,14	5.7	34.3	66
0034012	14 x 0,14	6.3	32.0	80
0034013	16 x 0,14	6.6	40.9	90
0034016	27 x 0,14	8.1	70.6	148
0031031	3 x 0,25	5.4	20.2	48
0031066	4 x 0,25	5.7	24.0	61
0031067	5 x 0,25	6.3	29.0	72
0031032	7 x 0,25	6.7	37.6	82
0031033	10 x 0,25	8.2	48.8	129
0031034	14 x 0,25	8.7	64.6	147
0031068	2 x 0,34	5.6	20.0	45
0031048	3 x 0,34	5.8	24.1	62
0031069	4 x 0,34	6.4	29.0	65
0031070	5 x 0,34	6.9	42.0	95
0031049	7 x 0,34	7.3	50.0	106
0031050	10 x 0,34	9.0	67.7	167
0031052	16 x 0,34	10.5	95.0	219

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

■ Accessories

UNITRONIC® 100

- Universal strip stripping and cutting tool refer to page 906
- STAR STRIP stripping tool refer to page 906

UNITRONIC® 100 CY

- SKINTOP® MS-SC-M refer to page 668
- Multipurpose shears A and B refer to page 902
- Universal strip stripping and cutting tool refer to page 906
- STAR STRIP stripping tool refer to page 906

UNITRONIC® LiYY

Data transmission cable with colour code acc. to DIN 47100



Info

- The classic for multi-functional use

Benefits

- Space-saving installation due to small cable diameters
- Multifunctional application possibilities
- Depending on the quantity, the outer sheath can also be produced in other colours to match your application needs

Application range

- UNITRONIC® LiYY is also used as a control and signal cable in electronics of computer systems, electronic control equipment, office machines, balances, etc.
- Dry or damp rooms
- Occasional flexing

Product features

- Despite the large number of cores, LiYY data cables have small outer diameters
- Core colour code in accordance with DIN 47100 but no colour repetition
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of PVC
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
DIN 47100 without colour repetition, refer to Appendix T9
- Mutual capacitance**
Approx. 120 nF/km
- Peak operating voltage**
(not for power applications)
at 0.14 mm²: 350 V
at ≥ 0.25 mm²: 500 V
- Based on**
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Stranded, fine-wire
0.34 mm², 7-wire
- Minimum bending radius**
For flexible use: 10 x outer diameter
- Test voltage**
At 0.14 mm²: 1200 V
> 0.14 mm²: 1500 V
- Temperature range**
Fixed installation: -40°C to +80°C
Flexing: -5°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiYY				
0028202	2 x 0.14	3.2	2.7	13.2
0028203	3 x 0.14	3.4	4.0	16
0028204	4 x 0.14	3.6	5.4	18.9
0028205	5 x 0.14	3.9	6.7	22.2
0028207	7 x 0.14	4.2	9.4	28.4
0028208	8 x 0.14	4.9	10.2	35.2
0028210	10 x 0.14	5.2	13.5	41.2
0028212	12 x 0.14	5.6	16.2	48.4
0028214	14 x 0.14	5.8	18.9	52.9
0028216	16 x 0.14	6.1	21.6	59.1
0028220	20 x 0.14	7.0	27.0	70.8
0028225	25 x 0.14	7.8	33.6	87.2
0028236	36 x 0.14	8.6	48.6	126.8
0028237	37 x 0.14	8.9	49.7	118
0028240	40 x 0.14	9.3	54.0	139.1
0028250	50 x 0.14	10.4	67.5	170.9
0028256	56 x 0.14	10.7	78.4	187
0028302	2 x 0.25	3.8	4.8	18
0028303	3 x 0.25	4.0	7.2	22
0028304	4 x 0.25	4.3	9.6	26.2
0028305	5 x 0.25	4.7	12.0	31
0028307	7 x 0.25	5.1	16.8	42
0028308	8 x 0.25	6.2	19.2	49.2
0028310	10 x 0.25	6.8	24.0	58
0028312	12 x 0.25	7.0	28.8	67
0028314	14 x 0.25	7.3	33.6	75.3
0028316	16 x 0.25	7.7	38.4	84.3
0028318	18 x 0.25	8.1	43.2	93
0028320	20 x 0.25	8.6	48.0	102
0028325	25 x 0.25	9.6	60.0	134
0028330	30 x 0.25	10.3	72.0	155
0028332	32 x 0.25	10.7	76.8	164
0028336	36 x 0.25	11.1	86.4	182.2
0028337	37 x 0.25	11.4	88.8	185
0028340	40 x 0.25	12.0	96.1	200
0028350	50 x 0.25	12.9	120.0	257.1
0028402	2 x 0.34	4.2	6.6	25
0028403	3 x 0.34	4.4	9.9	31
0028404	4 x 0.34	4.8	13.1	43.2
0028405	5 x 0.34	5.5	16.5	53.8
0028407	7 x 0.34	5.9	22.8	62
0028408	8 x 0.34	7.1	26.1	73.1
0028410	10 x 0.34	7.6	32.6	82
0028412	12 x 0.34	7.8	39.1	102

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0028414	14 x 0.34	8.2	45.7	109
0028416	16 x 0.34	8.7	52.0	127
0028420	20 x 0.34	9.6	65.2	159.3
0028421	21 x 0.34	10.4	68.6	167
0028425	25 x 0.34	11.2	81.6	190
0028430	30 x 0.34	11.6	98.0	226
0028436	36 x 0.34	12.5	118.0	284
0028440	40 x 0.34	13.5	131.0	317
0028450	50 x 0.34	15.0	163.0	407
0028502	2 x 0.50	4.7	9.6	40
0028503	3 x 0.50	5.0	14.4	47
0028504	4 x 0.50	5.6	19.2	56
0028505	5 x 0.50	6.1	24.0	65
0028507	7 x 0.50	6.9	33.6	82
0028508	8 x 0.50	8.0	38.4	90
0028510	10 x 0.50	8.6	48.0	117
0028512	12 x 0.50	8.9	58.0	133
0028516	16 x 0.50	10.2	77.0	170
0028520	20 x 0.50	11.4	96.0	214
0028525	25 x 0.50	12.3	120.0	265
0028530	30 x 0.50	13.2	144.0	304
0028540	40 x 0.50	15.8	192.0	392
0028602	2 x 0.75	5.1	14.4	48
0028603	3 x 0.75	5.6	21.6	57
0028604	4 x 0.75	6.1	28.8	69
0028605	5 x 0.75	6.9	36.0	78
0028607	7 x 0.75	7.5	50.0	112
0028608	8 x 0.75	8.7	58.0	126
0028610	10 x 0.75	9.4	72.0	149
0028612	12 x 0.75	10.1	86.0	176
0028616	16 x 0.75	11.2	115.0	218
0028620	20 x 0.75	12.4	144.0	274
0028625	25 x 0.75	14.0	180.0	285
0028702	2 x 1.00	5.6	19.2	55
0028703	3 x 1.00	5.9	29.0	70
0028705	5 x 1.00	7.3	48.0	98
0028802	2 x 1.50	6.8	29.0	74
0028803	3 x 1.50	7.2	43.0	89
0028804	4 x 1.50	7.8	58.0	105

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® LiYY (TP) refer to page 264

Accessories

- STAR STRIP stripping tool refer to page 906

UNITRONIC® LiYY A

Data transmission cable with colour code acc. to DIN 47100 - UL/CSA recognized

LAPP KABEL STUTTGART UNITRONIC® LiYY A



Info

- A for Advanced here: UL and CSA approvals

Benefits

- For the North American market
- For various applications

Application range

- Wiring of devices, machines and plants intended for export to the North American market or countries where UL-/CSA approved cables are used.

Product features

- Flame-retardant according to IEC 60332.1.2 & CSA FT1
- Colour-coded in accordance with DIN 47100
- Can be used for Maxi TERMI-POINT® wiring

Approvals



Design

- Multi-wire strand made of tinned copper wires
- Core insulation: Based on PVC
- Outer sheath made of special PVC compound
Outer sheath colour: dark grey (chrome)

Technical data

- Core identification code**
DIN 47100 without colour repetition, refer to Appendix T9
- Approvals**
UL AWM Style 2464
CSA AWM I/II A
- Peak operating voltage**
(not for power applications)
300 V
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Stranded, 7-wire
- Minimum bending radius**
For flexible use:
15 x outer diameter
- Test voltage**
1500 V
- Temperature range**
Fixed installation: -40°C to +80°C
Flexing: -5°C to +70°C

Article number	Number of cores and AWG per conductor	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiYY A					
0022403	3 x AWG26/7	3 x 0.14	3.8	4.2	19.7
0022404	4 x AWG26/7	4 x 0.14	4.0	5.6	23
0022405	5 x AWG26/7	5 x 0.14	4.3	7.0	25
0022408	8 x AWG26/7	8 x 0.14	5.1	11.2	34
0022412	12 x AWG26/7	12 x 0.14	5.7	16.8	47
0022416	16 x AWG26/7	16 x 0.14	6.3	22.4	58
0022421	21 x AWG26/7	21 x 0.14	7.1	29.4	63
0022502	2 x AWG24/7	2 x 0.23	4.0	4.6	26.2
0022505	5 x AWG24/7	5 x 0.23	4.8	11.3	39.4
0022508	8 x AWG24/7	8 x 0.23	5.7	16.5	52.5
0022512	12 x AWG24/7	12 x 0.23	6.6	27.6	72.2
0022602	2 x AWG22/7	2 x 0.34	4.8	6.8	32.8
0022603	3 x AWG22/7	3 x 0.34	5.0	10.2	35
0022604	4 x AWG22/7	4 x 0.34	5.4	13.6	45.9
0022605	5 x AWG22/7	5 x 0.34	5.9	17.0	55.8
0022607	7 x AWG22/7	7 x 0.34	6.4	23.3	68.9
0022608	8 x AWG22/7	8 x 0.34	7.0	27.2	75.5
0022612	12 x AWG22/7	12 x 0.34	8.5	40.8	103
0022616	16 x AWG22/7	16 x 0.34	9.5	54.4	131.2
0022624	24 x AWG22/7	24 x 0.34	11.3	81.6	190
0022632	2 x AWG20/7	2 x 0.50	5.3	11.2	29
0022642	2 x AWG19/19	2 x 0.75	5.9	15.0	48

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 152 m; Drum 305 m

TERMI-POINT® is a registered trademark of AMP

Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® LIYCY

Screened data transmission cable with colour code acc. to DIN 47100

LAPP KABEL STUTTGART UNITRONIC® LIYCY

Benefits

- Overall braid minimises electrical interference
- Multifunctional application possibilities

Application range

- Screened cables with small dimensions are suitable for use in computer systems, instrumentation technology, office equipment, balances.
- Dry or damp rooms

Product features

- Colour-coded in accordance with DIN 47100
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of PVC
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
DIN 47100 without colour repetition, refer to Appendix T9
- Mutual capacitance**
C/C approx. 120 nF/km
C/S: approx. 160 nF/km
- Peak operating voltage**
(not for power applications)
at 0.14 mm²: 350 V
at ≥ 0.25 mm²: 500 V
- Based on**
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Stranded, fine-wire
0.34 mm², 7-wire
- Minimum bending radius**
For flexible use: 15 x outer diameter
Fixed installation: 6 x outer diameter
- Test voltage**
At 0.14 mm²: 1200 V
> 0.14 mm²: 1500 V
- Temperature range**
Fixed installation: -40°C to +80°C
Flexing: -5°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LIYCY				
0034302	2 x 0.14	3.9	12.0	20
0034303	3 x 0.14	4.1	13.0	28
0034304	4 x 0.14	4.3	14.3	33
0034305	5 x 0.14	4.6	15.5	38
0034306	6 x 0.14	4.9	18.2	38
0034307	7 x 0.14	4.9	19.0	49
0034308	8 x 0.14	5.8	21.2	56
0034310	10 x 0.14	6.1	28.5	66
0034312	12 x 0.14	6.3	30.4	78
0034314	14 x 0.14	6.7	32.0	80
0034315	15 x 0.14	6.9	37.8	86
0034316	16 x 0.14	7.0	43.0	90
0034318	18 x 0.14	7.3	48.8	104
0034320	20 x 0.14	7.7	53.9	116
0034321	21 x 0.14	7.9	55.5	121
0034325	25 x 0.14	8.4	63.0	149
0034328	28 x 0.14	8.5	66.1	153
0034330	30 x 0.14	8.7	69.0	158
0034332	32 x 0.14	9.0	73.6	164
0034336	36 x 0.14	9.3	83.0	183
0034340	40 x 0.14	10.4	87.5	210
0034344	44 x 0.14	10.7	110.5	225
0034350	50 x 0.14	11.1	122.5	253
0034402	2 x 0.25	4.5	16.0	32
0034403	3 x 0.25	4.7	21.0	37
0034404	4 x 0.25	5.0	24.0	41.3
0034405	5 x 0.25	5.6	29.0	51.2
0034406	6 x 0.25	6.0	30.0	58
0034407	7 x 0.25	6.0	37.0	65
0034408	8 x 0.25	7.1	42.0	73
0034410	10 x 0.25	7.5	46.0	82
0034412	12 x 0.25	7.7	53.0	98
0034414	14 x 0.25	8.0	59.0	99
0034415	15 x 0.25	8.3	61.0	111
0034416	16 x 0.25	8.4	64.0	124
0034418	18 x 0.25	8.8	83.0	143
0034420	20 x 0.25	9.3	88.0	152.3
0034421	21 x 0.25	9.6	93.0	161
0034425	25 x 0.25	10.7	114.0	172
0034428	28 x 0.25	10.8	126.0	181.1
0034430	30 x 0.25	11.0	132.0	189
0034432	32 x 0.25	11.4	138.0	203
0034436	36 x 0.25	11.8	148.0	220
0034440	40 x 0.25	12.7	157.0	248

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0034450	50 x 0.25	13.8	178.0	318
0034461	61 x 0.25	15.0	205.0	365.2
0034502	2 x 0.34	4.9	21.0	37
0034503	3 x 0.34	5.1	27.0	49
0034504	4 x 0.34	5.7	28.0	59
0034505	5 x 0.34	6.2	30.0	66
0034506	6 x 0.34	6.8	45.0	79
0034507	7 x 0.34	6.8	48.0	83
0034508	8 x 0.34	7.8	52.0	94
0034510	10 x 0.34	8.3	74.0	129.2
0034512	12 x 0.34	8.5	80.0	142
0034514	14 x 0.34	8.9	86.0	154
0034515	15 x 0.34	9.2	90.0	155
0034516	16 x 0.34	9.4	94.0	160
0034518	18 x 0.34	10.2	103.0	173
0034520	20 x 0.34	10.7	112.0	192
0034521	21 x 0.34	11.1	116.0	199.2
0034525	25 x 0.34	11.9	135.0	259
0034528	28 x 0.34	12.0	153.0	280
0034530	30 x 0.34	12.3	159.0	291.1
0034532	32 x 0.34	13.0	165.0	305
0034536	36 x 0.34	13.4	179.0	331
0034540	40 x 0.34	14.8	200.0	365
0034550	50 x 0.34	15.9	235.0	431
0034602	2 x 0.50	5.6	29.0	54
0034603	3 x 0.50	5.9	38.0	67
0034604	4 x 0.50	6.3	43.0	77
0034605	5 x 0.50	7.0	51.0	90
0034606	6 x 0.50	7.6	59.0	104
0034607	7 x 0.50	7.6	65.0	112
0034608	8 x 0.50	8.7	70.0	135
0034610	10 x 0.50	9.3	88.0	160
0034612	12 x 0.50	9.6	99.0	177
0034618	18 x 0.50	11.8	134.0	239
0034620	20 x 0.50	12.1	149.0	276
0034625	25 x 0.50	13.7	211.0	352
0034630	30 x 0.50	14.5	230.0	397
0034702	2 x 0.75	6.0	38.0	64
0034703	3 x 0.75	6.3	49.0	76
0034704	4 x 0.75	7.0	58.0	92
0034705	5 x 0.75	7.6	67.0	109
0034707	7 x 0.75	8.2	100.0	156
0034710	10 x 0.75	10.5	130.0	187
0034712	12 x 0.75	10.8	154.0	218
0034718	18 x 0.75	13.0	195.0	327
0034725	25 x 0.75	15.3	280.0	454
0034730	30 x 0.75	15.8	312.0	486
0034802	2 x 1.00	6.3	43.0	72
0034803	3 x 1.00	6.8	56.0	90
0034804	4 x 1.00	7.3	68.0	109
0034805	5 x 1.00	8.0	79.0	126
0034807	7 x 1.00	8.6	118.0	171
0034810	10 x 1.00	11.1	140.0	228
0034812	12 x 1.00	11.4	168.0	259
0034818	18 x 1.00	13.4	252.0	389
0034825	25 x 1.00	16.2	335.0	517
0034902	2 x 1.50	7.5	58.0	90
0034903	3 x 1.50	7.9	74.0	115
0034904	4 x 1.50	8.5	108.0	153
0034905	5 x 1.50	9.3	129.0	176
0034907	7 x 1.50	10.5	164.0	220
0034912	12 x 1.50	13.7	254.0	376
0034918	18 x 1.50	16.3	350.0	519
0034925	25 x 1.50	19.9	550.0	901

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

■ **Similar products**

- UNITRONIC® LiYCY (TP) refer to page 265

■ **Accessories**

- SKINTOP® MS-SC refer to page 719
- Multipurpose shears A and B refer to page 902

UNITRONIC® LiYCY A

Screened data transmission cable with colour code acc. to DIN 47100 – UL/CSA recognized

Info

- A for Advanced here: UL and CSA approvals



Benefits

- Overall braid minimises electrical interference
- For the North American market
- Can be used for Maxi TERMI-POINT® wiring

Application range

- Wiring of devices, machines and plants intended for export to the North American market or countries where UL-/CSA approved cables are used.

Product features

- Colour-coded in accordance with DIN 47100
- Flame-retardant according to IEC 60332.1.2 & CSA FT1

Approvals



Design

- Multi-wire strand made of tinned copper wires
- Core insulation: Based on PVC
- Tinned-copper braiding
- Outer sheath made of special PVC compound
Outer sheath colour: dark grey (chrome)

Technical data

- Core identification code**
DIN 47100 without colour repetition, refer to Appendix T9
- Approvals**
UL AWM Style 2464
CSA AWM I/II A
- Peak operating voltage**
(not for power applications)
300 V
- Specific insulation resistance**
> 20 GOhm x cm
- Minimum bending radius**
For flexible use:
15 x outer diameter
- Test voltage**
1500 V
- Temperature range**
Fixed installation: -40°C to +80°C
Flexing: -5°C to +70°C

Article number	Number of cores and AWG per conductor	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiYCY A					
0044602	2 x AWG26/7	2 x 0.14	4.3	15.6	29.5
0044604	4 x AWG26/7	4 x 0.14	4.7	18.0	33
0044652	2 x AWG24/7	2 x 0.23	4.7	17.6	36.1
0044655	5 x AWG24/7	5 x 0.23	5.5	28.5	51
0044658	8 x AWG24/7	8 x 0.23	6.4	31.1	72.2
0044662	12 x AWG24/7	12 x 0.23	7.3	51.8	96
0044702	2 x AWG22/7	2 x 0.34	5.5	17.6	32
0044703	3 x AWG22/7	3 x 0.34	5.7	21.2	36
0044704	4 x AWG22/7	4 x 0.34	6.1	27.3	44
0044705	5 x AWG22/7	5 x 0.34	6.6	30.8	53
0044707	7 x AWG22/7	7 x 0.34	7.1	46.4	71
0044712	12 x AWG22/7	12 x 0.34	8.9	66.8	120
0044716	16 x AWG22/7	16 x 0.34	9.8	83.9	145
0044721	21 x AWG22/7	21 x 0.34	11.3	109.4	170
0044732	2 x AWG20/7	2 x 0.50	6.0	24.4	41
0044733	3 x AWG20/7	3 x 0.50	6.3	29.9	47
0044735	5 x AWG20/7	5 x 0.50	7.3	49.2	72
0044738	8 x AWG20/7	8 x 0.50	8.5	70.8	102
0044850	7 x AWG18/19	7 x 1.00	8.9	93.2	160.8
0044851	10 x AWG18/19	10 x 1.00	11.5	130.9	200
0044912	12 x AWG16/19	12 x 1.50	13.7	248.6	375

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: Coil 152 m; Drum 305 m
 TERMI-POINT® is a registered trademark of AMP
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® LiYCY (TP) A refer to page 266

Accessories

- KS 15 cable shears refer to page 903

UNITRONIC® LiYY (TP)

Data transmission cable with colour code acc. to DIN 47100 and twisted pairs



Info

- TP = twisted pair

Benefits

- Twisted pair (TP) decouples the cable circuits

Application range

- Electronic devices tend to leave little room for installing cables, meaning short travel distances and small bending radii are required. This cable ideally meets these requirements.
- Dry or damp rooms

Product features

- Twisted in pairs to reduce decoupling. As a result, additional screening is often not required.
- Colour-coded in accordance with DIN 47100
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation made of PVC
- TP structure
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data



Core identification code
DIN 47100, refer to Appendix T9



Mutual capacitance
Approx. 120 nF/km



Peak operating voltage
(not for power applications)
at 0.14 mm²: 350 V
at ≥ 0.25 mm²: 500 V



Based on
VDE 0812



Specific insulation resistance
> 20 GOhm x cm



Inductivity
approx. 0.65 mH/km



Conductor stranding
Fine copper wire strands



Minimum bending radius
For flexible use: 10 x outer diameter



Test voltage
At 0.14 mm²: 1200 V
> 0.14 mm²: 1500 V



Temperature range
Fixed installation: -40°C to +80°C
Flexing: -5°C to +70°C

Article number	Number of pairs and conductor cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiYY (TP)				
0035101	2 x 2 x 0.14	4.8	5.4	25.5
0035102	3 x 2 x 0.14	4.9	8.0	32
0035103	4 x 2 x 0.14	5.5	10.7	38.5
0035104	5 x 2 x 0.14	5.7	13.4	45.5
0035105	6 x 2 x 0.14	6.2	16.1	51
0035108	10 x 2 x 0.14	8.0	26.9	77.5
0035110	12 x 2 x 0.14	8.2	32.3	94.5
0035113	16 x 2 x 0.14	9.1	43.0	110.5
0035160	2 x 2 x 0.25	6.1	9.6	38
0035161	3 x 2 x 0.25	6.2	14.4	48
0035162	4 x 2 x 0.25	6.9	19.2	59
0035163	6 x 2 x 0.25	7.8	28.8	80
0035164	8 x 2 x 0.25	9.2	38.4	98
0035165	10 x 2 x 0.25	10.3	48.0	115
0035170	2 x 2 x 0.5	7.9	19.2	72
0035171	3 x 2 x 0.5	8.0	28.8	83
0035172	4 x 2 x 0.5	8.7	38.4	115
0035174	8 x 2 x 0.5	12.2	76.8	206
0035175	10 x 2 x 0.5	13.2	96.0	247

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- For special applications with additional screening, UNITRONIC® LiYCY (TP) is recommended

Accessories

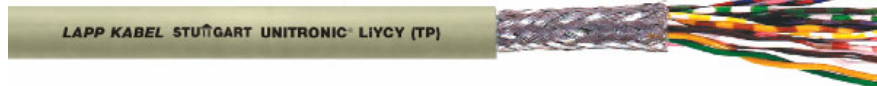
- KS 15 cable shears refer to page 903

UNITRONIC® LiYCY (TP)

Screened data transmission cable with colour code acc. to DIN 47100 and twisted pairs

Info

- TP = twisted pair



Benefits

- Overall braid minimises electrical interference
- Twisted pair (TP) decouples the cable circuits

Application range

- Can be used multifunctional in electronics of computer systems, electronic control equipment, office machines, balances, etc.
- Dry or damp rooms

Product features

- Data transmission cable with good shielding effect
- Good protection against capacitive interference from electric fields (e.g. power cable)
- Colour-coded in accordance with DIN 47100
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation made of PVC
- TP structure
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
DIN 47100, refer to Appendix T9
- Mutual capacitance**
C/C approx. 120 nF/km
C/S: approx. 160 nF/km
- Peak operating voltage**
(not for power applications)
at 0.14 mm²: 350 V
at ≥ 0.25 mm²: 500 V
- Based on**
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
Approx. 0.50 mH/km
- Conductor stranding**
Fine copper wire strands
- Minimum bending radius**
For flexible use:
15 x outer diameter
Fixed installation: 6 x outer diameter
- Test voltage**
At 0.14 mm²: 1200 V
> 0.14 mm²: 1500 V
- Temperature range**
Fixed installation: -40°C to +80°C
Flexing: -5°C to +70°C

Article number	Number of pairs and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiYCY (TP)				
0035131	2 x 2 x 0.14	5.7	18.5	39
0035141	3 x 2 x 0.14	5.8	23.0	48
0035132	4 x 2 x 0.14	6.2	26.6	54
0035133	6 x 2 x 0.14	7.1	48.5	85
0035150	8 x 2 x 0.14	8.2	53.7	97
0035134	10 x 2 x 0.14	8.7	59.0	110
0035135	12 x 2 x 0.14	8.9	66.0	142
0035136	16 x 2 x 0.14	10.2	79.0	154
0035142	20 x 2 x 0.14	11.3	97.0	184
0035137	25 x 2 x 0.14	12.5	113.0	238
0035800	2 x 2 x 0.25	6.3	28.0	54
0035801	3 x 2 x 0.25	7.1	39.6	68.5
0035802	4 x 2 x 0.25	7.6	44.9	81
0035803	6 x 2 x 0.25	8.5	69.5	115
0035804	8 x 2 x 0.25	10.3	76.9	130
0035805	10 x 2 x 0.25	11.0	102.0	158
0035806	12 x 2 x 0.25	11.3	120.0	190
0035807	16 x 2 x 0.25	12.5	146.5	238
0035808	25 x 2 x 0.25	16.1	205.0	344
0035810	2 x 2 x 0.5	8.6	48.1	93
0035811	3 x 2 x 0.5	8.7	73.7	129
0035812	4 x 2 x 0.5	9.4	82.0	146
0035813	6 x 2 x 0.5	11.1	110.0	198
0035814	8 x 2 x 0.5	13.1	139.0	259
0035816	12 x 2 x 0.5	14.9	198.3	354
0035817	16 x 2 x 0.5	16.5	240.0	459
0035820	2 x 2 x 0.75	8.5	58.0	106
0035821	3 x 2 x 0.75	9.4	84.0	140
0035822	4 x 2 x 0.75	10.7	108.0	179
0035827	5 x 2 x 0.75	11.1	126.0	215
0035823	6 x 2 x 0.75	12.1	146.0	246
0035824	8 x 2 x 0.75	14.7	180.0	305
0035825	12 x 2 x 0.75	16.2	261.0	456
0035830	2 x 2 x 1	9.0	84.0	142
0035831	3 x 2 x 1	10.4	96.0	173
0035832	4 x 2 x 1	11.3	121.0	212
0035836	5 x 2 x 1	11.8	161.0	266

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® Li2YCY (TP) fine-wired refer to page 286
- UNITRONIC® CY PiDY (TP) refer to page 283
- We recommend our UNITRONIC® CY PiDY (TP) if paired screening is required due to crosstalk attenuation.

Accessories

- SKINTOP® MS-SC-M refer to page 668
- Multipurpose shears A and B refer to page 902
- STAR STRIP stripping tool refer to page 906

UNITRONIC® LIYCY (TP) A

Screened data transmission cable with colour code acc. to DIN 47100 and twisted pairs - UL/CSA recognized

LAPP KABEL STÜTTGART UNITRONIC® LIYCY(TP) A



Info

- A for Advanced here: UL and CSA approvals

Benefits

- For the North American market
- Data transmission cable with good shielding effect
- Overall braid minimises electrical interference
- Twisted pair (TP) decouples the cable circuits
- Can be used for Maxi TERMI-POINT® wiring

Application range

- Wiring of devices, machines and plants intended for export to the North American market or countries where UL-/CSA approved cables are used.

Product features

- Colour-coded in accordance with DIN 47100
- Flame-retardant according to IEC 60332.1.2 & CSA FT1

Approvals



Design

- Multi-wire strand made of tinned copper wires
- Core insulation: Based on PVC
- TP structure
- Tinned-copper braiding
- Outer sheath made of special PVC compound
Outer sheath colour: dark grey (chrome)

Technical data

- Core identification code**
DIN 47100 without colour repetition, refer to Appendix T9
- Approvals**
UL AWM Style 2464
CSA AWM I/II A
- Peak operating voltage**
(not for power applications)
300 V
- Specific insulation resistance**
> 20 GOhm x cm
- Test voltage**
1500 V
- Temperature range**
Fixed installation: -40°C to +80°C
Flexing: -5°C to +70°C

Article number	Number of cores and AWG per conductor	Number of pairs and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LIYCY (TP) A					
0066202	2 x 2 x AWG26/7	2 x 2 x 0.14	5.7	18.0	45.9
0066204	4 x 2 x AWG26/7	4 x 2 x 0.14	6.4	24.0	58
0066205	5 x 2 x AWG26/7	5 x 2 x 0.14	6.6	30.0	58
0066208	8 x 2 x AWG26/7	8 x 2 x 0.14	7.9	53.0	85
0066210	10 x 2 x AWG26/7	10 x 2 x 0.14	8.7	55.0	106
0066212	12 x 2 x AWG26/7	12 x 2 x 0.14	8.9	64.0	113
0066216	16 x 2 x AWG26/7	16 x 2 x 0.14	10.2	87.0	149
0066232	2 x 2 x AWG24/7	2 x 2 x 0.23	6.1	24.5	57
0066233	3 x 2 x AWG24/7	3 x 2 x 0.23	6.7	28.9	62
0066234	4 x 2 x AWG24/7	4 x 2 x 0.23	6.9	33.5	70
0066235	5 x 2 x AWG24/7	5 x 2 x 0.23	7.5	46.3	91
0066238	2 x 2 x AWG22/7	2 x 2 x 0.34	7.4	38.0	45
0066239	3 x 2 x AWG22/7	3 x 2 x 0.34	8.1	45.1	64
0066240	4 x 2 x AWG22/7	4 x 2 x 0.34	8.8	54.6	75
0066242	2 x 2 x AWG20/7	2 x 2 x 0.5	8.2	49.7	93
0066243	3 x 2 x AWG20/7	3 x 2 x 0.5	9.1	60.1	102
0066244	4 x 2 x AWG20/7	4 x 2 x 0.5	10.2	78.7	120
0066262	2 x 2 x AWG19/19	2 x 2 x 0.75	9.0	65.2	140

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: Coil 152 m; Drum 305 m
 TERMI-POINT® is a registered trademark of AMP
 Photographs are not to scale and do not represent detailed images of the respective products.

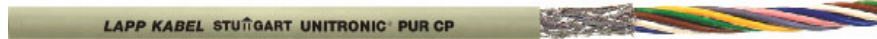
Accessories

- DATA STRIP stripping tool refer to page 907

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

UNITRONIC® PUR CP

Screened data transmission cable with PUR outer sheath for harsh conditions



Benefits

- Data transmission cable with PUR sheath for increased mechanical stress, wear- and tear-resistant,
- Overall braid minimises electrical interference
- Increased durability under harsh conditions thanks to robust PUR outer sheath

Application range

- 7-wire stranded conductor can be used for Maxi TERMI-POINT® wiring (for this product the 0,34mm² version only)
- Further development of the UNITRONIC® range for harsher ambient conditions where robust and screened cables in small dimensions are required.

Product features

- Low-adhesive surface
- PUR outer sheath is resistant to most oils and hydraulic fluids
- Special notch and tear-resistance
- Colour-coded in accordance with DIN 47100
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of PVC
- Tinned-copper braiding
- Outer sheath made of PUR
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
DIN 47100, refer to Appendix T9
- Mutual capacitance**
C/C approx. 120 nF/km
C/S: approx. 160 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Based on**
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Stranded, fine-wire
0.34 mm², 7-wire
- Minimum bending radius**
For flexible use: 15 x outer diameter
Fixed installation: 6 x outer diameter
- Test voltage**
At 0.14 mm²: 1200 V
> 0.14 mm²: 1500 V
- Temperature range**
Fixed installation: -30 °C to +80 °C
Flexing: -5°C to +70°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® PUR CP				
0032801	3 x 0.25	4.7	21.0	40
0032802	4 x 0.25	5.0	24.0	44
0032803	5 x 0.25	5.6	29.0	55
0032804	7 x 0.25	6.0	37.0	68
0032805	10 x 0.25	7.5	46.0	85
0032806	12 x 0.25	7.7	59.0	91
0032810	2 x 0.34	4.9	21.0	40
0032812	4 x 0.34	5.7	28.0	63
0032813	5 x 0.34	6.2	30.0	69
0032814	7 x 0.34	6.8	48.0	86
0032821	3 x 0.50	5.9	38.0	70
0032822	4 x 0.50	6.3	43.0	80
0032823	5 x 0.50	7.0	51.0	94
0032824	7 x 0.50	7.6	65.0	115
0032825	10 x 0.50	9.3	88.0	140
0032830	2 x 0.75	6.0	38.0	67
0032831	3 x 0.75	6.3	49.0	79
0032834	7 x 0.75	8.2	100.0	160
0032836	12 x 0.75	10.8	154.0	225

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 TERMI-POINT® is a registered trademark of AMP
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® PUR CP (TP) refer to page 268

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SMARTSTRIP stripping tool refer to page 907

UNITRONIC® PUR CP (TP)

Screened data transmission cable with PUR outer sheath and twisted pairs for harsh conditions



Info

- TP = twisted pair

Benefits

- Data transmission cable with PUR sheath for increased mechanical stress, wear- and tear-resistant,
- Overall braid minimises electrical interference
- Twisted pair (TP) decouples the cable circuits
- Increased durability under harsh conditions thanks to robust PUR outer sheath

Application range

- For harsh environmental conditions where robust and screened cables with small dimensions are necessary

Product features

- Low-adhesive surface
- PUR outer sheath is resistant to most oils and hydraulic fluids
- Special notch and tear-resistance
- Colour-coded in accordance with DIN 47100
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation made of PVC
- TP structure
- Tinned-copper braiding
- Outer sheath made of PUR
Outer sheath colour: pebble grey (RAL 7032)

Technical data



Core identification code
DIN 47100, refer to Appendix T9



Mutual capacitance
C/C approx. 120 nF/km
C/S: approx. 160 nF/km



Peak operating voltage
(not for power applications) 250 V



Based on
VDE 0814: (DIN 47414)
or VDE 0812



Specific insulation resistance
> 20 GOhm x cm



Inductivity
approx. 0.65 mH/km



Conductor stranding
Fine copper wire strands



Minimum bending radius
For flexible use:
15 x outer diameter
Fixed installation: 6 x outer diameter



Test voltage
At 0.14 mm²: 1200 V
> 0.14 mm²: 1500 V



Temperature range
Fixed installation: -30 °C to +80 °C
Flexing: -5 °C to +70 °C

Article number	Number of pairs and conductor cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® PUR CP (TP)				
0032850	2 x 2 x 0.25	6.3	28.0	54
0032851	3 x 2 x 0.25	7.1	40.0	66
0032852	4 x 2 x 0.25	7.6	45.0	81
0032854	6 x 2 x 0.25	8.5	70.0	115
0032860	2 x 2 x 0.5	8.6	48.0	93
0032861	3 x 2 x 0.5	8.7	74.0	129
0032862	4 x 2 x 0.5	9.4	82.0	146
0032864	6 x 2 x 0.5	11.1	110.0	198
0032872	4 x 2 x 0.75	10.7	108.0	179
0032873	5 x 2 x 0.75	11.1	126.0	215

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SMARTSTRIP stripping tool refer to page 907

UNITRONIC® LIHH

Halogen-free data transmission cable with colour code acc. to DIN 47100



Benefits

- Halogen-free: to protect human life and valuable assets in the event of a fire, through low smoke density and low amount of corrosive gases

Application range

- Suitable for areas with a high density of people, e.g. public buildings or transport systems, as well as high-value property that must be protected in the event of a fire.
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- 7-wire stranded conductor can be used for Maxi TERMI-POINT® wiring (for this product the 0,34mm² version only)
- Dry or damp rooms

Product features

- Robust outer sheath makes the cable resistant
- Small outer diameters despite a high number of cores
- Low smoke zero halogen (LSZH)
- Colour-coded in accordance with DIN 47100
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire/multi-wire (0,34 mm²) strand made of bare copper wires
- Core insulation made of special halogen-free compound
- Outer sheath made of special halogen-free compound
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
DIN 47100 without colour repetition, refer to Appendix T9
- Mutual capacitance**
Approx. 80 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Based on**
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Stranded, fine-wire
0.34 mm², 7-wire
- Minimum bending radius**
For flexible use: 10 x outer diameter
Fixed installation: 6 x outer diameter
- Test voltage**
1200 V
- Temperature range**
Fixed installation: -30 °C to +80 °C
Flexing: -5 °C to +70 °C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LIHH				
0037100	2 x 0.14	3.4	2.7	12
0037101	3 x 0.14	3.6	4.0	15
0037102	4 x 0.14	3.8	5.4	17
0037103	5 x 0.14	4.1	6.7	22
0037104	6 x 0.14	4.4	8.1	25
0037105	7 x 0.14	4.4	9.4	26
0037106	8 x 0.14	5.1	10.8	29
0037107	10 x 0.14	5.4	13.4	35
0037108	12 x 0.14	5.8	16.1	43
0037109	20 x 0.14	7.2	26.8	73
0037110	25 x 0.14	8.0	34.6	91
0037120	2 x 0.25	4.0	4.8	22
0037121	3 x 0.25	4.2	7.2	25
0037122	4 x 0.25	4.5	9.6	28
0037123	5 x 0.25	4.9	12.0	34
0037124	6 x 0.25	5.3	14.4	39
0037125	7 x 0.25	5.3	16.8	42
0037126	8 x 0.25	6.4	19.2	50
0037127	10 x 0.25	7.0	24.0	60
0037128	12 x 0.25	7.2	28.8	67
0037129	16 x 0.25	7.9	38.4	85

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0037140	2 x 0.34	4.4	6.5	28
0037141	3 x 0.34	4.6	9.8	30
0037142	4 x 0.34	5.0	13.1	40
0037143	5 x 0.34	5.7	16.3	44
0037144	7 x 0.34	6.1	22.8	60
0037146	10 x 0.34	7.8	32.6	80
0037147	12 x 0.34	8.0	39.2	97
0037150	2 x 0.5	4.9	9.6	31
0037151	3 x 0.5	5.2	14.4	37
0037152	4 x 0.5	5.8	19.2	45
0037153	5 x 0.5	6.3	24.0	58
0037154	7 x 0.5	7.0	33.6	72
0037155	12 x 0.5	9.1	57.6	117
0037160	2 x 0.75	5.3	14.4	41
0037162	4 x 0.75	6.3	28.8	60
0037163	5 x 0.75	7.1	36.0	70
0037164	7 x 0.75	7.7	50.4	85
0037165	12 x 0.75	10.4	86.4	165
0037171	3 x 1	6.1	28.8	57
0037172	4 x 1	6.6	38.4	67
0037181	3 x 1.5	7.4	43.2	72
0037182	4 x 1.5	8.0	57.6	87

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 TERMI-POINT® is a registered trademark of AMP
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® LIHCH refer to page 270

Accessories

- KT 11 cable shears refer to page 903
- DATA STRIP stripping tool refer to page 907

UNITRONIC® LIHCH

Screened halogen-free data transmission cable with colour code acc. to DIN 47100



Benefits

- Halogen-free: to protect human life and valuable assets in the event of a fire, through low smoke density and low amount of corrosive gases
- Overall braid minimises electrical interference

Application range

- Suitable for areas with a high density of people, e.g. public buildings or transport systems, as well as high-value property that must be protected in the event of a fire.
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- For use in computer systems, instrumentation systems, office equipment, balances - wherever screened, halogen-free, small-diameter cables are needed.
- 7-wire stranded conductor can be used for Maxi TERMI-POINT® wiring (for this product the 0,34mm² version only)

Product features

- Low smoke zero halogen (LSZH)
- Flame-retardant according to IEC 60332.1.2
- Colour-coded in accordance with DIN 47100

Approvals



Design

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of special halogen-free compound
- Tinned-copper braiding
- Outer sheath made of special halogen-free compound
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
DIN 47100 without colour repetition, refer to Appendix T9
- Mutual capacitance**
C/C approx. 80 nF/km
C/S approx. 120 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Based on**
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Stranded, fine-wire
0.34 mm², 7-wire
- Minimum bending radius**
For flexible use:
15 x outer diameter
Fixed installation: 6 x outer diameter
- Test voltage**
1200 V
- Temperature range**
Fixed installation: -30 °C to +80 °C
Flexing: -5°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LIHCH				
0037302	2 x 0.14	4.1	12.0	22
0037303	3 x 0.14	4.3	14.1	25
0037304	4 x 0.14	4.5	15.9	29
0037306	6 x 0.14	5.1	22.0	35
0037307	7 x 0.14	5.1	24.0	38
0037308	8 x 0.14	6.0	26.0	41
0037312	12 x 0.14	6.5	30.4	78
0037316	16 x 0.14	7.2	43.0	90
0037325	25 x 0.14	8.7	63.0	149
0037402	2 x 0.25	4.7	15.0	25
0037403	3 x 0.25	4.9	18.0	30
0037404	4 x 0.25	5.2	22.0	35
0037406	6 x 0.25	6.2	30.0	49
0037407	7 x 0.25	6.2	32.0	52
0037408	8 x 0.25	7.3	35.0	58
0037410	10 x 0.25	7.7	42.0	81
0037425	25 x 0.25	10.9	114.0	172
0037502	2 x 0.34	5.1	17.0	30
0037503	3 x 0.34	5.3	21.0	35
0037504	4 x 0.34	5.9	25.0	42
0037505	5 x 0.34	6.4	30.0	53
0037507	7 x 0.34	7.0	42.0	73
0037508	8 x 0.34	8.0	45.0	84
0037510	10 x 0.34	8.5	63.0	101

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0037516	16 x 0.34	9.6	94.0	160
0037525	25 x 0.34	12.1	144.0	259
0037602	2 x 0.5	5.8	29.0	38
0037603	3 x 0.5	6.1	35.0	47
0037604	4 x 0.5	6.5	45.0	67
0037605	5 x 0.5	7.2	50.0	76
0037606	6 x 0.5	7.8	59.0	84
0037607	7 x 0.5	7.8	68.0	91
0037608	8 x 0.5	8.9	75.0	135
0037610	10 x 0.5	9.5	93.0	131
0037612	12 x 0.5	9.8	99.0	177
0037618	18 x 0.5	11.7	134.0	239
0037625	25 x 0.5	13.9	211.0	352
0037702	2 x 0.75	6.2	35.0	45
0037703	3 x 0.75	6.5	46.0	69
0037704	4 x 0.75	7.2	56.0	80
0037705	5 x 0.75	7.8	70.0	99
0037707	7 x 0.75	8.3	90.0	120
0037802	2 x 1	6.5	43.0	72
0037803	3 x 1	7.0	56.0	90
0037804	4 x 1	7.5	68.0	109
0037807	7 x 1	8.8	118.0	171
0037902	2 x 1.5	7.7	58.0	90
0037903	3 x 1.5	8.1	74.0	115
0037905	5 x 1.5	9.5	129.0	176

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 TERMI-POINT® is a registered trademark of AMP
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® LIHCH (TP) refer to page 271

Accessories

- SKINTOP® MS-SC-M refer to page 668
- Multipurpose shears A and B refer to page 902

UNITRONIC® LIHCH (TP)

Screened halogen-free data transmission cable with colour code acc. to DIN 47100 and twisted pairs



Info

- TP = twisted pair



Benefits

- Halogen-free: to protect human life and valuable assets in the event of a fire, through low smoke density and low amount of corrosive gases
- Overall braid minimises electrical interference
- Twisted pair (TP) decouples the cable circuits

Application range

- Suitable for areas with a high density of people, e.g. public buildings or transport systems, as well as high-value property that must be protected in the event of a fire.
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- For use in computer systems, instrumentation systems, office equipment, balances - wherever screened, halogen-free, small-diameter cables are needed.

Product features

- Low smoke zero halogen (LSZH)
- Flame-retardant according to IEC 60332.1.2
- Colour-coded in accordance with DIN 47100

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation made of special halogen-free compound
- TP structure
- Tinned-copper braiding
- Outer sheath made of special halogen-free compound
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
DIN 47100 without colour repetition, refer to Appendix T9
- Mutual capacitance**
C/C approx. 80 nF/km
C/S approx. 120 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Based on**
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Coupling**
At 1 kHz: approx. 300 pF/100 m
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Fine copper wire strands
- Minimum bending radius**
For flexible use:
15 x outer diameter
Fixed installation: 6 x outer diameter
- Test voltage**
1200 V
- Temperature range**
Fixed installation: -30 °C to +80 °C
Flexing: -5°C to +70°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LIHCH (TP)				
0038302	2 x 2 x 0.14	5.9	18.5	39
0038303	3 x 2 x 0.14	6.0	23.0	48
0038304	4 x 2 x 0.14	6.4	26.6	54
0038306	6 x 2 x 0.14	7.3	48.5	85
0038308	8 x 2 x 0.14	8.4	53.7	97
0038310	10 x 2 x 0.14	8.9	59.0	110
0038312	12 x 2 x 0.14	9.1	66.0	142
0038316	16 x 2 x 0.14	10.4	79.0	154
0038320	20 x 2 x 0.14	11.5	97.0	184
0038325	25 x 2 x 0.14	12.7	113.0	238
0038402	2 x 2 x 0.25	7.2	28.0	54
0038403	3 x 2 x 0.25	7.3	39.6	66
0038404	4 x 2 x 0.25	7.8	44.9	81
0038406	6 x 2 x 0.25	8.7	69.5	115
0038408	8 x 2 x 0.25	10.5	76.9	130

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0038412	12 x 2 x 0.25	11.5	120.0	190
0038416	16 x 2 x 0.25	12.7	146.5	238
0038602	2 x 2 x 0.5	8.8	48.1	93
0038603	3 x 2 x 0.5	8.9	73.7	129
0038604	4 x 2 x 0.5	9.6	82.0	146
0038606	6 x 2 x 0.5	11.3	110.0	198
0038608	8 x 2 x 0.5	13.3	139.0	259
0038612	12 x 2 x 0.5	15.1	198.3	354
0038616	16 x 2 x 0.5	16.7	240.0	459
0038702	2 x 2 x 0.75	9.5	58.0	106
0038703	3 x 2 x 0.75	9.6	84.0	140
0038704	4 x 2 x 0.75	10.9	108.0	179
0038708	8 x 2 x 0.75	14.9	180.0	305
0038802	2 x 2 x 1	10.5	84.0	142
0038803	3 x 2 x 1	10.6	96.0	173
0038804	4 x 2 x 1	11.5	121.0	212
0038805	5 x 2 x 1	12.0	161.0	266

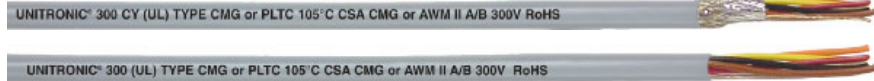
Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-SC-M refer to page 668
- Multipurpose shears A and B refer to page 902

UNITRONIC® 300 / UNITRONIC® 300 CY

Control and signal cables with small cross sections - UL/CSA listed



Info

- Unscreened + screened control and signal cables for industrial applications
- PLTC = Power Limited Tray Cable

Benefits

- Several approvals, such as UL Type PLTC, UL CMG, UL Oil Res I, CSA CMG and CE.
- For the North American market

Approvals



Application range

- Control and signal cables for internal and external wiring

Design

- Fine-wire strand made of tinned-copper wires
- Core insulation made of PVC compound
- UNITRONIC® 300 CY with overall foil tape wrapping, drain wire, tin-plated copper braiding (75 % coverage)
- Oil-resistant, grey PVC outer sheath

Product features

- UV-resistant and oil-resistant cable (OIL RES I)
- AWG24 has no PLTC approval
- Exposed run for AWG18 & AWG16
- PLTC for trays ("Exposed Run"/Open Wiring) Allows cabling without cable duct.

Technical data

- Core identification code**
refer to Appendix T9
- Approvals**
UL CMG, PLTC, Open Wiring, AWM 2464, Oil Res I
CSA CMG/FT4, CSA AWM II A/B, NOM SCFI 1994
- Minimum bending radius**
During installation: 4 x cable diameter
Screened: 6 x outer diameter
- Nominal voltage**
according to UL: 300 V
IEC: not for power transmission
- Test voltage**
2000V
- Temperature range**
-25°C to +105°C

Article number	Article designation	Number of cores and AWG size	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® 300					
301602	UNITRONIC® 300	2 x AWG16	6.7	25.0	83
301802	UNITRONIC® 300	2 x AWG18	6.1	18.3	61
302006	UNITRONIC® 300	6 x AWG20	7.5	29.5	97
302204	UNITRONIC® 300	4 x AWG22	5.0	13.7	33
302210	UNITRONIC® 300	10 x AWG22	7.0	34.2	67
302220	UNITRONIC® 300	20 x AWG22	9.0	68.5	116
302225	UNITRONIC® 300	25 x AWG22	10.5	85.6	142
UNITRONIC® 300 CY					
301602S	UNITRONIC® 300 CY	2 x AWG16	7.6	50.6	101
301606S	UNITRONIC® 300 CY	6 x AWG16	9.9	105.7	210
301802S	UNITRONIC® 300 CY	2 x AWG18	6.8	37.2	75
301803S	UNITRONIC® 300 CY	3 x AWG18	7.3	49.1	85
301804S	UNITRONIC® 300 CY	4 x AWG18	7.9	59.6	104
301825S	UNITRONIC® 300 CY	25 x AWG18	16.8	278.4	448
302002S	UNITRONIC® 300 CY	2 x AWG20	6.3	28.3	60
302004S	UNITRONIC® 300 CY	4 x AWG20	7.3	40.2	88
302006S	UNITRONIC® 300 CY	6 x AWG20	8.4	55.1	119
302206S	UNITRONIC® 300 CY	6 x AWG22	6.4	35.7	68

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: Coil 152 m; Drum 305 m
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® TRAY II refer to page 49
- ÖLFLEX® TRAY II CY refer to page 50

Accessories

- Universal strip stripping and cutting tool refer to page 906
- STAR STRIP stripping tool refer to page 906

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

UNITRONIC® FD

Highly flexible data transmission cable with PVC outer sheath for power chain use

LAPP KABEL STUTTGART UNITRONIC-FD

Benefits

- Optimized cable construction for power chain use

Application range

- Automated production processes require data transmission cables that offer high flexibility and durability
- UNITRONIC® FD series cables are specially designed for power chain use

Product features

- The PVC outer sheath prevents adhesion to other cables in the power chain
- Flame-retardant according to IEC 60332.1.2
- Please follow the installation guidelines in Appendix T3.

Approvals



Design

- Extra-fine wire strand made of bare copper wires
- Core insulation made of PVC
- Outer sheath made of PVC
Outer sheath colour: grey (RAL 7001)

Technical data

- Core identification code**
DIN 47100, refer to Appendix T9
- Mutual capacitance**
C/C: approx. 100 nF/km
- Peak operating voltage**
(not for power applications)
350 V
- Based on**
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Stranded, extra-fine wire in accordance with VDE 0295, single wire diameter 0.1 mm
- Minimum bending radius**
For flexible use:
5 x outer diameter
- Test voltage**
1500 V
- Temperature range**
Fixed installation: -40°C to +70°C
Flexing: -5°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD				
0027841	3 x 0.14	4.1	4.2	26
0027842	4 x 0.14	4.4	5.6	31
0027843	5 x 0.14	4.7	7.0	35
0027844	7 x 0.14	5.4	9.8	50
0027845	10 x 0.14	6.4	14.0	63
0027846	14 x 0.14	6.5	19.6	77
0027847	18 x 0.14	7.1	25.2	91
0027848	25 x 0.14	8.6	35.0	125
0027855	2 x 0.25	4.6	5.0	27
0027856	3 x 0.25	4.7	7.5	33
0027857	4 x 0.25	5.1	10.0	40
0027858	5 x 0.25	5.6	12.5	51
0027859	7 x 0.25	6.4	17.5	51
0027860	10 x 0.25	7.7	25.0	84
0027861	14 x 0.25	7.8	35.0	108
0027863	18 x 0.25	8.8	45.0	130
0027865	25 x 0.25	10.8	62.5	178
0027870	2 x 0.34	4.9	6.8	30
0027871	3 x 0.34	5.2	10.2	43
0027872	4 x 0.34	5.7	13.6	57
0027873	5 x 0.34	6.2	17.0	65
0027874	7 x 0.34	7.1	23.8	85
0027875	10 x 0.34	8.8	34.0	117
0027876	14 x 0.34	8.9	47.6	151
0027877	18 x 0.34	10.0	61.2	182
0027878	25 x 0.34	12.3	85.0	250

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® FD CY refer to page 274
- UNITRONIC® FD P plus refer to page 275

UNITRONIC® FD CY

Screened highly flexible data transmission cable with PVC outer sheath for power chain use



Benefits

- Optimized cable construction for power chain use
- Overall braid minimises electrical interference

Application range

- Automated production processes require data transmission cables that offer high flexibility and durability, as well as excellent screening
- UNITRONIC® FD series cables are specially designed for power chain use

Product features

- The PVC outer sheath prevents adhesion to other cables in the power chain
- Flame-retardant according to IEC 60332.1.2
- Please follow the installation guidelines in Appendix T3.

Approvals



Design

- Extra-fine wire strand made of bare copper wires
- Core insulation made of PVC
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: grey (RAL 7001)

Technical data

	Core identification code DIN 47100, refer to Appendix T9
	Mutual capacitance C/G approx. 110 nF/km C/S: approx. 110 nF/km
	Peak operating voltage (not for power applications) 350 V
	Based on VDE 0812
	Specific insulation resistance > 20 GOhm x cm
	Inductivity approx. 0.65 mH/km
	Conductor stranding Stranded, extra-fine wire in accordance with VDE 0295, single wire diameter 0.1 mm
	Minimum bending radius For flexible use: 7.5 x outer diameter
	Test voltage 1500 V
	Temperature range Fixed installation: -40°C to +70°C Flexing: -5°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD CY				
0027411	3 x 0.14	4.7	14.1	37
0027412	4 x 0.14	5.0	15.5	42
0027413	5 x 0.14	5.4	18.3	47
0027414	7 x 0.14	6.0	27.6	70
0027416	10 x 0.14	7.0	39.3	90
0027418	14 x 0.14	7.1	45.3	106
0027420	18 x 0.14	7.7	54.1	123
0027422	25 x 0.14	9.2	68.4	163
0027425	2 x 0.25	5.1	14.9	39
0027426	3 x 0.25	5.4	18.8	46
0027427	4 x 0.25	5.8	21.3	53
0027428	5 x 0.25	6.2	31.0	71
0027429	7 x 0.25	7.0	39.6	75
0027431	10 x 0.25	8.5	53.9	114
0027434	14 x 0.25	8.6	64.2	141
0027436	18 x 0.25	9.4	78.4	167
0027438	25 x 0.25	11.4	101.0	221
0027440	2 x 0.34	5.6	16.1	47
0027441	3 x 0.34	5.9	28.7	63
0027442	4 x 0.34	6.3	35.7	81
0027443	5 x 0.34	6.8	39.1	89
0027444	7 x 0.34	7.7	52.7	117
0027446	10 x 0.34	9.4	67.4	155
0027448	14 x 0.34	9.5	85.3	194
0027450	18 x 0.34	10.7	99.7	225
0027452	25 x 0.34	12.9	155.0	327

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® FD CP plus refer to page 276

Accessories

- SKINTOP® MS-SC-M refer to page 668
- STAR STRIP stripping tool refer to page 906

UNITRONIC® FD P plus

Highly flexible data transmission cable with PUR outer sheath

LAPP KABEL STUTTGART UNITRONIC® FD P plus



Info

- Flexible at low temperatures
- Low capacitance
- Halogen-free

Benefits

- Optimized cable construction for power chain use
- Wide temperature range for applications in harsh climatic environments
- High mechanical strength

Application range

- Highly flexible data cable with PUR outer sheath, meets the highest service life requirements, even under harsh climatic conditions.
- Multifunctional-use, e.g. for packaging industry and storage and retrieval units

Product features

- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- Flexible down to -40°C
- The cable is halogen-free and has low capacitance
- Flame-retardant according to IEC 60332.1.2
- Adhesion-free, resistant to hydrolysis and microbes

Approvals



Design

- Extra-fine wire strand made of bare copper wires
- Core insulation: Based on Polyolefin
- Outer sheath made of special PUR compound
Outer sheath colour: grey (RAL 7001)

Technical data

- Core identification code**
DIN 47100, refer to Appendix T9
- Mutual capacitance**
C/C approx. 60 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Specific insulation resistance**
> 5 GOhm x km
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Stranded, extra-fine wire in accordance with VDE 0295, single wire diameter 0.1 mm
- Minimum bending radius**
For flexible use:
5 x outer diameter
- Test voltage**
1500 V
- Temperature range**
-40°C to +80°C

Article number	Number of cores and mm ² per conductor	AWG size	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD P plus					
0028650	3 x 0.14	26 AWG	4.1	4.1	25
0028651	4 x 0.14	26 AWG	4.4	5.6	30
0028652	5 x 0.14	26 AWG	4.7	7.0	34
0028653	7 x 0.14	26 AWG	5.4	9.8	48
0028654	10 x 0.14	26 AWG	6.4	14.0	60
0028655	14 x 0.14	26 AWG	6.5	19.6	74
0028656	18 x 0.14	26 AWG	7.1	25.2	87
0028657	25 x 0.14	26 AWG	8.6	35.0	120
0028658	2 x 0.25	24 AWG	4.5	5.0	27
0028659	3 x 0.25	24 AWG	4.7	7.5	32
0028660	4 x 0.25	24 AWG	5.1	10.0	39
0028661	5 x 0.25	24 AWG	5.6	12.5	49
0028662	7 x 0.25	24 AWG	6.4	17.5	61
0028663	10 x 0.25	24 AWG	7.7	25.0	80
0028664	14 x 0.25	24 AWG	7.8	35.0	103
0028665	18 x 0.25	24 AWG	8.8	45.0	125
0028666	25 x 0.25	24 AWG	10.8	62.5	171
0028667	2 x 0.34	22 AWG	4.9	6.8	33
0028668	3 x 0.34	22 AWG	5.2	10.2	41
0028669	4 x 0.34	22 AWG	5.7	13.6	55
0028670	5 x 0.34	22 AWG	6.2	17.0	62
0028671	7 x 0.34	22 AWG	7.1	23.8	80
0028672	10 x 0.34	22 AWG	8.8	34.0	110
0028673	14 x 0.34	22 AWG	8.9	47.6	144
0028674	18 x 0.34	22 AWG	10.0	61.2	175
0028675	25 x 0.34	22 AWG	12.3	85.0	239

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SMARTSTRIP stripping tool refer to page 907

UNITRONIC® FD CP plus

Screened highly flexible data transmission cable with PUR outer sheath - UL/CSA-listed



Info

- Flexible at low temperatures
- Low capacitance
- Halogen-free

Benefits

- Wide temperature range for applications in harsh climatic environments
- High mechanical strength
- Approval: UL/CSA type CMX in accordance with UL 444 and CSA C22.2 no. 214-02
- Optimized cable construction for power chain use
- Overall braid minimises electrical interference

Application range

- Highly flexible data transmission cable complies with the most stringent service life requirements, even in harsh climatic conditions, UL/CSA-approved
- Multifunctional-use, e.g. for packaging industry and storage and retrieval units
- Ideal for export-oriented machinery and equipment manufacturers
- For the North American market

Product features

- The cable is halogen-free and has low capacitance
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- Adhesion-free, resistant to hydrolysis and microbes
- Flexible down to -40°C
- Flame-retardant according to IEC 60332-1-2 and VW-1 acc. to UL-1581

Approvals



Design

- Extra-fine wire strand made of bare copper wires
- Core insulation: Based on Polyolefin
- Tinned-copper braiding
- Outer sheath made of special PUR compound
Outer sheath colour: grey (RAL 7001)

Technical data

- Core identification code**
DIN 47100, refer to Appendix T9
- Approvals**
CMX (UL/CSA)
- Mutual capacitance**
C/C approx. 60 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Specific insulation resistance**
> 5 GOhm x km
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Stranded, extra-fine wire in accordance with VDE 0295, single wire diameter 0.1 mm
- Minimum bending radius**
For flexible use: 7.5 x outer diameter
- Test voltage**
Core/core: 1500 V
Core/screen: 500 V
- Temperature range**
-40 °C to +80 °C

Article number	Number of cores and mm ² per conductor	AWG size	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD CP plus					
0028880	2 x 0.14	26 AWG	4.5	11.2	33
0028881	3 x 0.14	26 AWG	4.7	14.1	36
0028882	4 x 0.14	26 AWG	5.1	15.5	40
0028883	5 x 0.14	26 AWG	5.4	18.3	45
0028884	7 x 0.14	26 AWG	6.0	27.8	67
0028885	10 x 0.14	26 AWG	7.0	39.3	87
0028886	14 x 0.14	26 AWG	7.1	45.3	102
0028887	18 x 0.14	26 AWG	7.7	54.1	118
0028888	25 x 0.14	26 AWG	9.2	68.4	157
0028889	2 x 0.25	24 AWG	5.1	14.9	38
0028890	3 x 0.25	24 AWG	5.4	18.8	45
0028891	4 x 0.25	24 AWG	5.8	21.3	52
0028892	5 x 0.25	24 AWG	6.2	31.0	69
0028893	7 x 0.25	24 AWG	7.0	39.6	84
0028894	10 x 0.25	24 AWG	8.5	53.9	109
0028895	14 x 0.25	24 AWG	8.6	64.2	136
0028896	18 x 0.25	24 AWG	9.4	78.4	161
0028897	25 x 0.25	24 AWG	11.4	101.0	213
0028898	2 x 0.34	22 AWG	5.6	18.1	45
0028899	3 x 0.34	22 AWG	5.9	28.7	61
0028900	4 x 0.34	22 AWG	6.3	35.7	77
0028901	5 x 0.34	22 AWG	6.8	39.1	83
0028902	7 x 0.34	22 AWG	7.7	52.7	109
0028903	10 x 0.34	22 AWG	9.4	67.4	147
0028904	14 x 0.34	22 AWG	9.5	85.8	186
0028905	18 x 0.34	22 AWG	10.7	99.7	216
0028906	25 x 0.34	22 AWG	12.9	155.0	314

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® FD CP (TP) plus refer to page 277

Accessories

- SKINTOP® MS-SC-M refer to page 668
- STAR STRIP stripping tool refer to page 906

UNITRONIC® FD CP (TP) plus

Screened highly flexible data transmission cable with PUR outer sheath and twisted pairs - UL/CSA-listed



Info

- Flexible at low temperatures
- Low capacitance
- Halogen-free

Benefits

- Wide temperature range for applications in harsh climatic environments
- High mechanical strength
- Approval: UL/CSA type CMX in accordance with UL 444 and CSA C22.2 no. 214-02
- Overall braid minimises electrical interference
- Twisted pair (TP) decouples the cable circuits

Application range

- Ideal for export-oriented machinery and equipment manufacturers
- Power chains
- Linear robots
- Automated handling equipment
- For the North American market

Product features

- The cable is halogen-free and has low capacitance
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains



- Adhesion-free, resistant to hydrolysis and microbes
- Flexible down to -40°C
- Flame-retardant according to IEC 60332-1-2 and VW-1 acc. to UL-1581

Approvals



Design

- Extra-fine wire strand made of bare copper wires
- Core insulation: Based on Polyolefin
- TP structure
- Tinned-copper braiding
- Outer sheath made of special PUR compound
Outer sheath colour: grey (RAL 7001)

Technical data

- Core identification code**
DIN 47100, refer to Appendix T9
- Approvals**
CMX (UL/CSA)
- Mutual capacitance**
Up to 0.5 mm²: 60 nF/km
Up to 1.0 mm²: 70 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Specific insulation resistance**
> 5 GOhm x km
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Stranded, extra-fine wire, Class 6, in accordance with VDE 0295
- Minimum bending radius**
7.5 x outer diameter
- Test voltage**
Core/core: 1500 V
Core/screen: 500 V
- Temperature range**
-40 °C to +80 °C

Article number	Number of pairs and mm ² per conductor	AWG size	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD CP (TP) plus					
0030910	2 x 2 x 0.14	26 AWG	6.2	19.4	42
0030911	3 x 2 x 0.14	26 AWG	6.5	23.4	53
0030912	4 x 2 x 0.14	26 AWG	7.0	27.1	59
0030913	5 x 2 x 0.14	26 AWG	7.6	37.4	75
0030914	6 x 2 x 0.14	26 AWG	7.8	49.4	91
0030915	8 x 2 x 0.14	26 AWG	9.1	54.8	109
0030916	10 x 2 x 0.14	26 AWG	10.5	60.1	120
0030962	1 x 2 x 0.25	24 AWG	5.1	14.0	27
0030919	2 x 2 x 0.25	24 AWG	7.3	32.0	60
0030920	3 x 2 x 0.25	24 AWG	7.7	38.4	72
0030921	4 x 2 x 0.25	24 AWG	8.6	43.2	85
0030922	5 x 2 x 0.25	24 AWG	9.3	51.5	103
0030923	6 x 2 x 0.25	24 AWG	9.6	71.8	131
0030924	8 x 2 x 0.25	24 AWG	11.3	74.4	155
0030925	10 x 2 x 0.25	24 AWG	13.0	90.0	186
0030926	14 x 2 x 0.25	24 AWG	13.2	111.2	219
0030963	1 x 2 x 0.34	22 AWG	5.6	20.0	36
0030928	2 x 2 x 0.34	22 AWG	8.2	41.0	81
0030929	3 x 2 x 0.34	22 AWG	8.7	52.0	101
0030930	4 x 2 x 0.34	22 AWG	9.5	59.0	119
0030932	6 x 2 x 0.34	22 AWG	11.0	86.2	165
0030933	8 x 2 x 0.34	22 AWG	12.8	107.3	221
0030934	10 x 2 x 0.34	22 AWG	14.9	131.1	274
0030964	1 x 2 x 0.5	20 AWG	6.2	22.0	47
0030937	2 x 2 x 0.5	20 AWG	9.3	50.0	99
0030938	3 x 2 x 0.5	20 AWG	10.1	71.8	130
0030939	4 x 2 x 0.5	20 AWG	11.1	74.4	148
0030940	5 x 2 x 0.5	20 AWG	12.3	84.5	168
0030941	6 x 2 x 0.5	20 AWG	12.7	99.6	194
0030942	8 x 2 x 0.5	20 AWG	15.1	144.3	284
0030943	10 x 2 x 0.5	20 AWG	17.2	176.0	343
0030944	14 x 2 x 0.5	20 AWG	17.5	215.4	401
0030965	1 x 2 x 0.75	19 AWG	6.6	34.0	61
0030946	2 x 2 x 0.75	19 AWG	10.2	60.0	112
0030947	3 x 2 x 0.75	19 AWG	10.9	85.7	157
0030948	4 x 2 x 0.75	19 AWG	12.2	93.6	172
0030950	6 x 2 x 0.75	19 AWG	14.2	130.4	231
0030951	8 x 2 x 0.75	19 AWG	16.4	192.2	342
0030952	10 x 2 x 0.75	19 AWG	19.3	258.0	466
0030953	14 x 2 x 0.75	19 AWG	19.8	316.6	545
0030955	1 x 2 x 1	18 AWG	7.0	42.0	71
0030956	2 x 2 x 1	18 AWG	11.0	73.0	129
0030957	3 x 2 x 1	18 AWG	11.9	93.6	169
0030958	4 x 2 x 1	18 AWG	13.1	117.8	204
0030959	5 x 2 x 1	18 AWG	14.7	139.0	237

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- STAR STRIP stripping tool refer to page 906

UNITRONIC® EB CY (TP)

Screened data transmission cable with twisted pairs and blue outer sheath



Info

- Hazard protection type -i- is required where there is a risk of explosion

Benefits

- Overall braid minimises electrical interference
- Twisted pair (TP) decouples the cable circuits

Application range

- Reliable data transmission in intrinsically safe circuits
- In EMC-sensitive environments (electromagnetic compatibility)

Product features

- Complies with VDE 0165 Section 12.2.2.6. Marking of cables for hazard type -i- (intrinsically safe) is specified
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation made of PVC
- TP structure
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: sky blue (RAL 5015)

Technical data

- Core identification code**
DIN 47100, refer to Appendix T9
- Mutual capacitance**
C/C approx. 100 nF/km
C/S approx. 140 nF/km
- Peak operating voltage**
(not for power applications)
900 V
- Based on**
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Strand, fine-wire in accordance with VDE 0295, Class 5/IEC 60228 Cl. 5
- Minimum bending radius**
For flexible use:
15 x outer diameter
Fixed installation: 6 x outer diameter
- Test voltage**
2500 V
- Temperature range**
Fixed installation: -30 °C to +80 °C
Flexing: -5 °C to +70 °C

Article number	Number of pairs and conductor cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® EB CY (TP)				
0012620	2 x 2 x 0.75	8.7	58.0	106
0012621	3 x 2 x 0.75	9.6	84.0	140
0012622	4 x 2 x 0.75	10.9	108.0	179
0012624	6 x 2 x 0.75	12.3	146.0	246
0012626	10 x 2 x 0.75	16.1	220.0	392

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Multipurpose shears A and B refer to page 902
- SKINTOP® K-M ATEX plus blue refer to page 661

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

UNITRONIC® EB JE-LiYCY...BD

Screened data transmission cable with blue outer sheath for industrial electronics



Benefits

- UNITRONIC® EB JE-LiYCY...BD is a connecting cable for electronics used in measurement and control engineering, and can also be used as pulse and data transmission cable
- Can be used for Maxi TERMI-POINT® wiring
- Overall braid minimises electrical interference
- Twisted pair (TP) decouples the cable circuits

Application range

- Industrial electronics
- Measurement and control technology
- For fixed installation on and under plaster, in dry and damp rooms.
- For outdoor use this cable should be installed under plaster only.

Product features

- Complies with VDE 0165 Section 12.2.2.6. Marking of cables for hazard type -i- (intrinsically safe) is specified
- Flame-retardant according to IEC 60332.1.2
- The 2-pair version (2 x 2 x 0.5) is twisted into a star quad
- Printed text may differ from illustration

Approvals



Design

- Multi-wire strand made of bare copper wires
- Core insulation made of PVC
- TP structure
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: sky blue (RAL 5015)

Technical data

- Core identification code**
according to VDE 0815, refer to Appendix T 10
- Mutual capacitance**
Approx. 100 nF/km
- Peak operating voltage**
(not for power applications) 225 V
- Based on**
VDE 0815
- Coupling**
Approx. 200 pF/100 m
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Stranded, multi-wire, VDE 0295, Class 2/IEC 60228 Class 2.
- Minimum bending radius**
For flexible use:
15 x outer diameter
Fixed installation: 6 x outer diameter
- Test voltage**
Core/core: 500 V
Core/screen: 2000 V
- Loop resistance**
max. 78.4 ohm/km
- Temperature range**
Fixed installation: -40°C to +70°C
Flexing: -5°C to +70°C

Article number	Number of pairs and conductor cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® EB JE-LiYCY...BD				
0034220	2 x 2 x 0.5	7.5	51.0	95
0034221	4 x 2 x 0.5	10.0	87.0	155
0034222	8 x 2 x 0.5	13.0	144.0	260
0034223	12 x 2 x 0.5	15.5	193.0	340
0034224	16 x 2 x 0.5	17.0	249.0	430
0034225	20 x 2 x 0.5	18.5	298.0	495
0034226	24 x 2 x 0.5	20.5	348.0	605
0034227	32 x 2 x 0.5	22.5	441.0	738
0034228	40 x 2 x 0.5	24.0	531.0	845

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 TERMI-POINT® is a registered trademark of AMP
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Multipurpose shears A and B refer to page 902
- SKINTOP® K-M ATEX plus blue refer to page 661
- STAR STRIP stripping tool refer to page 906

UNITRONIC® EB JE-Y(ST)Y 0,8 BD

Static screened installation cable with blue outer sheath for industrial electronics



Info

- Hazard protection type -i- is required where there is a risk of explosion

Benefits

- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic field

Application range

- Connecting cable for measurement and control technology
- Industrial electronics
- For fixed installation on and under plaster, in dry and damp rooms.
- For outdoor use this cable should be installed under plaster only.

Product features

- Complies with VDE 0165 Section 12.2.2.6. Marking of cables for hazard type -i- (intrinsically safe) is specified
- Flame-retardant according to IEC 60332.1.2
- 2 cores twisted into a pair, and 4 pairs into units (for 2 x 2 x 0.8 as star quad cable)
- Printed text may differ from illustration

Approvals



Design

- Solid bare copper conductor
- Core insulation made of PVC
- TP structure
- Foil wrapping, static screening made of aluminium-laminated plastic film with copper drain wire
- Outer sheath made of PVC
Outer sheath colour: sky blue (RAL 5015)

Technical data

- Core identification code**
according to VDE 0815, refer to Appendix T10 on "Ring Printing"
- Mutual capacitance**
Approx. 100 nF/km
- Peak operating voltage**
(not for power applications) 225 V
- Based on**
VDE 0815
- Insulation resistance**
> 100 MOhm
- Coupling**
Approx. 200 pF/100 m
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Single-wire solid conductor, 0.8 mm Ø
0.8 mm: 0.50 mm²
- Minimum bending radius**
Fixed installation: 6 x outer diameter
- Test voltage**
Core/core: 500 V
Core/screen: 2000 V
- Loop resistance**
max. 73.2 Ohm/km
- Temperature range**
Fixed installation: -40°C to +70°C

Article number	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® EB JE-Y(ST)Y 0.8 BD				
0034120	2 x 2 x 0.8	6.0	25.0	60
0034121	4 x 2 x 0.8	8.5	45.0	100
0034122	8 x 2 x 0.8	11.0	85.0	165
0034123	12 x 2 x 0.8	13.0	126.0	240
0034125	20 x 2 x 0.8	16.0	206.0	360
0034126	32 x 2 x 0.8	20.0	327.0	555

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 100/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® K-M ATEX plus blue refer to page 661

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

UNITRONIC® LIYCY-CY
Screened data transmission cable with individually screened cores



Benefits

- Overall braid minimises electrical interference
- Individually screened cores minimise crosstalk between cables routed in parallel

Application range

- When a lossless transmission of data has to be guaranteed in fields with strong interference, cables with individually-screened cores and an additional overall screening are used.
- Dry or damp rooms

Product features

- Data transmission cable with double copper screening
- Wire-screen can be used as outer conductor
- The cable remains flexible despite multiple screening
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation made of PVC
- Tinned-copper braiding for each core
- Inner sheath made of PVC over each screened core
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
DIN 47100, refer to Appendix T9
- Mutual capacitance**
Approx. 230 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Based on**
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
Approx. 0.2 mH/km
- Conductor stranding**
Fine copper wire strands
- Minimum bending radius**
For flexible use:
15 x outer diameter
- Test voltage**
1200 V
- Temperature range**
Fixed installation: -30 °C to +80 °C
Flexing: -5 °C to +70 °C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LIYCY-CY				
0032302	2 x 0.25	6.5	41.5	69
0032303	3 x 0.25	7.1	53.0	106
0032304	4 x 0.25	7.7	65.0	130
0032305	5 x 0.25	8.4	78.0	161
0032307	7 x 0.25	10.0	94.0	196

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® CY PiDY (TP) refer to page 283

Accessories

- SKINTOP® MS-SC-M refer to page 668
- Multipurpose shears A and B refer to page 902
- Universal strip stripping and cutting tool refer to page 906
- DATA STRIP stripping tool refer to page 907

UNITRONIC® LIFCY (TP)

Screened miniature data transmission cable

LAPP KABEL STUÏGART UNITRONIC LIFCY (TP)



Info

- TP = twisted pair

Benefits

- TP structure minimises crosstalk
- Overall braid minimises electrical interference

Application range

- For protection against high-frequency interference, screened, fine-wire cables are used in many devices.
- Additional decoupling through TP structure.
- Examples: microelectronics, hearing aids etc.

Product features

- Very small dimensions
- Colour-coded in accordance with DIN 47100
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Extra-fine wire strand made of bare copper wires
- Core insulation made of PVC
- TP structure
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data



Core identification code
DIN 47100, refer to Appendix T9



Mutual capacitance
C/C approx. 80 nF/km
C/S approx. 120 nF/km



Peak operating voltage
(not for power applications) 150 V



Based on
VDE 0812



Specific insulation resistance
> 20 GOhm x cm



Coupling
At 1 kHz: approx. 300 pF/100 m



Inductivity
approx. 0.65 mH/km



Conductor stranding
Stranded, extra-fine wire,
cross-section 0.08 mm²



Minimum bending radius
7.5 x outer diameter



Test voltage
800 V



Temperature range
Fixed installation: -30°C to +70°C
Flexible use: -5°C to +50°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LIFCY (TP)				
0034231	4 x 2 x 0.08	5.1	19.4	37
0034233	8 x 2 x 0.08	6.7	23.7	76

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-SC-M refer to page 668
- EASY STRIP 2 stripping and cutting tool refer to page 905
- Multipurpose shears A and B refer to page 902
- DATA STRIP stripping tool refer to page 907

UNITRONIC® CY PiDY (TP)

Screened data transmission cable with copper-wrapped twisted pairs



Info

- PiDY = Pairs with copper wire wrapping and PVC sheath
- TP = twisted pair

Benefits

- TP structure minimises crosstalk
- Individually screened pairs and the overall braid minimise electrical interference enormously

Application range

- Cable should be used in areas with high levels of electromagnetic interferences
- For fixed installation and flexible use
- Dry or damp rooms

Product features

- The cable remains flexible despite multiple screening
- Flame-retardant according to IEC 60332.1.2
- Colour-coded in accordance with DIN 47100

Approvals



Design

- Fine-wire strand made of bare copper wires
- Core insulation made of PVC
- Cores twisted into pairs
- Copper wrapping over pairs
- Inner sheath made of PVC over screened pairs
- Tinned-copper braiding
- Outer sheath made of PVC
- Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
DIN 47100, refer to Appendix T9
- Mutual capacitance**
C/C approx. 120 nF/km
C/S: approx. 160 nF/km
- Peak operating voltage**
(not for power applications)
350 V
- Based on**
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Stranded conductor, fine-wire
- Minimum bending radius**
Fixed installation: 6 x outer diameter
- Test voltage**
1200 V
- Loop resistance**
< 160 Ohm/km
- Temperature range**
Fixed installation: -30°C to +70°C
Flexible use: -5°C to +50°C
- Characteristic impedance**
Approx. 65 Ohm

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® CY PiDY (TP)				
0034250	2 x 2 x 0.25	9.3	59.6	112
0034251	3 x 2 x 0.25	9.8	72.7	136
0034252	4 x 2 x 0.25	11.1	88.2	168
0034253	5 x 2 x 0.25	11.8	103.8	201
0034254	6 x 2 x 0.25	12.8	125.7	244
0034255	7 x 2 x 0.25	14.1	143.6	274
0034256	8 x 2 x 0.25	15.4	161.0	325
0034257	10 x 2 x 0.25	17.1	186.8	342
0034258	12 x 2 x 0.25	18.3	239.5	416
0034259	16 x 2 x 0.25	20.3	316.7	542

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® Li2YCY PiMF refer to page 288

Accessories

- SKINTOP® MS-SC-M refer to page 668
- Universal strip stripping and cutting tool refer to page 906
- STAR STRIP stripping tool refer to page 906

UNITRONIC® LiYD 11Y

Data transmission cable with copper wrapping and PUR outer sheath

LAPP KABEL STUÏGART UNITRONIC LiYD 11Y



Benefits

- UNITRONIC® LiYD 11Y has an overall screening which prevents external electrical interference and guarantees precise pulse transmission.
- PUR outer sheath is highly resistant to mineral oils and abrasion

Application range

- Cables are intended for use in industrial environments, where screened cables are required. They have very small cross-sections and have excellent mechanical and chemical resistance.

Product features

- Cut and abrasion-resistant PUR outer sheath
- The PUR outer sheath is resistant to wear and tear.
- Flame-retardant according to IEC 60332.1.2
- Spiral versions are also available except for the 7-core version

Approvals



Design

- Extra-fine wire strand made of bare copper wires
- Core insulation made of PVC
- Screening: wrapped with bare copper wires
- Outer sheath made of PUR
Outer sheath colour: black (RAL 9005)

Technical data

- Core identification code**
DIN 47100 without colour repetition, refer to Appendix T9
- Mutual capacitance**
C/C approx. 140 nF/km
C/S approx. 150 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Based on**
VDE 0812
- Specific insulation resistance**
> 20 GOhm x cm
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Stranded, extra-fine wire
- Minimum bending radius**
For flexible use:
10 x outer diameter
Fixed installation:
6 x outer diameter
- Test voltage**
1200 V
- Temperature range**
Fixed installation: -30 °C to +80 °C
Flexing: -5 °C to +70 °C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiYD 11Y				
0033202	2 x 0.14	4.1	9.6	20
0033203	3 x 0.14	4.3	11.0	25
0033204	4 x 0.14	4.5	12.0	27
0033205	5 x 0.14	4.8	14.4	33
0033206	6 x 0.14	5.5	17.6	38
0033207	7 x 0.14	5.9	21.5	41
0033212	12 x 0.14	7.2	33.2	62
0033218	18 x 0.14	8.0	44.2	83
0033302	2 x 0.25	4.7	11.8	25
0033303	3 x 0.25	5.3	15.6	31
0033304	4 x 0.25	5.6	18.2	36
0033305	5 x 0.25	6.0	21.4	42
0033306	6 x 0.25	6.8	26.1	49
0033312	12 x 0.25	8.4	48.1	81

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® SPIRAL refer to page 235

Accessories

- Multipurpose shears A and B refer to page 902
- Universal strip stripping and cutting tool refer to page 906
- DATA STRIP stripping tool refer to page 907

UNITRONIC® ST

Static screened data transmission cable similar to UL AWM 2092



Benefits

- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic field

Application range

- UNITRONIC® ST data transmission cables are especially designed for the transmission of the smallest measurement and control signals at minimal space requirements.
- For fixed and limited flexible installation
- For use in dry, damp and wet rooms

Product features

- Protection against interferences at medium and high frequencies by aluminium foil, combination of flexibility and good screening (normal requirements).
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- 7-wire tinned stranded copper conductor
- Core insulation made of polyethylene (PE)
- Plastic-laminated aluminium foil with tinned copper drain wire
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
1: transparent 2: black (3: red)
- Mutual capacitance**
C/C approx. 90 nF/km
C/S approx. 160 nF/km
- Peak operating voltage**
(not for power applications):
500 V
- Based on**
UL 2092 / 2093
- Specific insulation resistance**
> 5 GOhm x km
- Inductivity**
approx. 0.65 mH/km
- Minimum bending radius**
10 x outer diameter
- Test voltage**
1500 V
- Temperature range**
Fixed installation: -40°C to +80°C
Flexing: -5°C to +70°C
- Characteristic impedance**
Approx. 95 Ohm

Article number	Number of conductors and AWG size	Conductor cross-section (mm²)	Core insulation material	Outer sheath material	Outer diameter (mm)	Copper index (kg/km)	Type no.
UNITRONIC® ST							
0033000	2 x AWG 20/7	0.52	PE	PVC	5.2	17.2	Belden 8762
0033001	3 x AWG 20/7	0.52	PE	PVC	5.3	23.0	Belden 8772

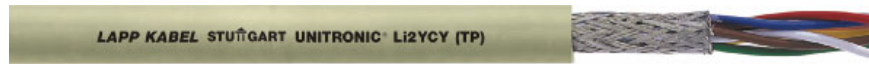
Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Universal strip stripping and cutting tool refer to page 906
- DATA STRIP stripping tool refer to page 907

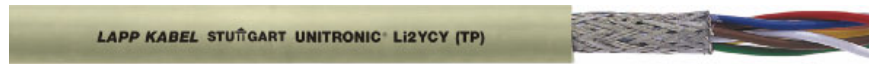
UNITRONIC® Li2YCY (TP)

Screened data transmission cable mit PE core insulation, 7-wire strands and twisted pairs



UNITRONIC® Li2YCY (TP) fine-wired

Screened data transmission cable mit PE core insulation, fine wire strands and twisted pairs



UNITRONIC® Li2YCYv (TP)

Screened data transmission cable mit PE core insulation, reinforced outer sheath and twisted pairs



Benefits

- 7-wire stranded conductor (UNITRONIC® Li2YCY (TP) and UNITRONIC® Li2YCYv (TP)) can be used for Maxi TERMI-POINT® wiring
- Overall braid minimises electrical interference
- TP structure minimises crosstalk

Application range

- The UNITRONIC® Li2YCYv (TP) model with reinforced black outer sheath (Yv) is suitable for indoors and outdoors, as well as direct burial in the ground.
- UNITRONIC® Li2YCY (TP) is particularly suitable for wiring data systems with transmission rates up to 10 Megabits per second, and is qualified for the RS422 and RS485 interfaces.
- Cables of this type are intended for limited flexible use, and for fixed installation in dry or damp interiors

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- UNITRONIC® Li2YCY (TP)**
- 7-wire tinned stranded copper conductor
 - Core insulation made of polyethylene (PE)
 - TP structure
 - Tinned-copper braiding
 - Outer sheath made of PVC
 - Outer sheath colour: pebble grey (RAL 7032)
- UNITRONIC® Li2YCY (TP) fine-wired**
- Similar to UNITRONIC® Li2YCY (TP), but with fine-wire conductor design
- UNITRONIC® Li2YCYv (TP)**
- Similar to UNITRONIC® Li2YCY (TP), but with reinforced PVC outer sheath (Yv)
 - Outer sheath colour: black (RAL 9005)

Technical data

- Core identification code**
DIN 47100, refer to Appendix T9
- Mutual capacitance**
UNITRONIC® Li2YCY (TP)
At 800 Hz: max. 60 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Based on**
UNITRONIC® Li2YCY (TP)
VDE 0812
- Specific insulation resistance**
> 5 GOhm x km
- Inductivity**
UNITRONIC® Li2YCY (TP)
approx. 0.65 mH/km
- Conductor stranding**
UNITRONIC® Li2YCY (TP)
Stranded conductor, based on VDE 0881, 7-wire
UNITRONIC® Li2YCY (TP) fine-wired
Stranded conductor, fine-wire
UNITRONIC® Li2YCYv (TP)
Stranded conductor, based on VDE 0881, 7-wire
- Minimum bending radius**
For flexible use:
15 x outer diameter
Fixed installation: 6 x outer diameter
- Short-range crosstalk attenuation**
Up to 1 MHz min. 50 dB
Up to 10 MHz min. 40 dB
- Test voltage**
UNITRONIC® Li2YCY (TP)
Core/core: 2000 V
Core/screen: 1000 V
- Temperature range**
Fixed installation: -30 °C to +80 °C
Flexing: -5 °C to +70 °C
- Characteristic impedance**
100 Ohm +/- 15

Article number	Number of pairs and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® Li2YCY (TP)				
0031320	2 x 2 x 0,22	6.5	24.2	59
0031321	3 x 2 x 0,22	7.1	28.6	66
0031322	4 x 2 x 0,22	7.3	34.2	78
0031323	8 x 2 x 0,22	9.1	70.0	125
0031324	10 x 2 x 0,22	10.4	76.0	143
0031335	1 x 2 x 0,34	5.8	20.0	44
0031325	2 x 2 x 0,34	7.7	34.1	79
0031326	3 x 2 x 0,34	8.9	43.0	89
0031327	4 x 2 x 0,34	8.7	47.0	101

Article number	Number of pairs and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0031328	8 x 2 x 0,34	11.0	85.8	176
0031336	1 x 2 x 0,5	6.3	29.0	53
0031330	2 x 2 x 0,5	8.5	37.0	85
0031331	3 x 2 x 0,5	9.3	55.0	105
0031332	4 x 2 x 0,5	9.6	60.0	122
0031333	8 x 2 x 0,5	12.7	113.3	213
0031334	10 x 2 x 0,5	14.8	154.0	261
UNITRONIC® Li2YCY (TP) fine-wire				
0031370	1 x 2 x 0,25	5.7	14.0	38
0031371	2 x 2 x 0,25	6.9	28.0	56
0031372	3 x 2 x 0,25	7.5	39.6	64
0031373	5 x 2 x 0,25	8.3	50.0	93
UNITRONIC® Li2YCYy (TP) black for outdoor installation and direct burial				
0031350	2 x 2 x 0,22	8.1	24.2	79
0031351	3 x 2 x 0,22	8.7	28.6	93
0031352	4 x 2 x 0,22	8.8	34.2	100
0031353	8 x 2 x 0,22	10.7	70.0	156
0031354	10 x 2 x 0,22	12.0	76.0	185
0031365	1 x 2 x 0,34	7.4	20.0	69
0031355	2 x 2 x 0,34	9.3	34.1	102
0031356	3 x 2 x 0,34	10.0	43.0	117
0031357	4 x 2 x 0,34	10.3	52.8	130
0031358	8 x 2 x 0,34	12.6	85.8	206
0031366	1 x 2 x 0,5	7.9	29.0	79
0031360	2 x 2 x 0,5	10.1	37.0	120
0031361	3 x 2 x 0,5	10.9	55.0	142
0031362	4 x 2 x 0,5	11.2	60.0	160
0031363	8 x 2 x 0,5	13.9	113.3	251
0031364	10 x 2 x 0,5	16.0	148.0	303

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 TERMI-POINT® is a registered trademark of AMP
 Photographs are not to scale and do not represent detailed images of the respective products.

- Accessories**
- SKINTOP® MS-SC-M refer to page 668
 - Multipurpose shears A and B refer to page 902
 - STAR STRIP stripping tool refer to page 906
 - STEEL GUN HT-338 cable tie pliers refer to page 963
 - LS steel cable ties refer to page 961

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

UNITRONIC® Li2YCY PiMF

Screened data transmission cable mit PE core insulation and pairs in metalfoil



Benefits

- Data transmission cable with low capacitance, pair screening and overall copper braiding
- 7-wire stranded conductor can be used for Maxi TERMI-POINT® wiring
- Individually screened pairs and the overall braid minimise electrical interference enormously
- TP structure minimises crosstalk

Application range

- UNITRONIC® Li2YCY PiMF with individual screening of the pairs is particularly suitable for wiring data systems and controls in large industrial plants, for the transmission of sensitive signals and high bit rates for enhanced requirements in near-end cross-talk attenuation and high electrical interference in the circuits
- For measurement value transmission and serial 2-wire interfaces
- Cables of this type are intended for limited flexible use, and for fixed installation in dry or damp interiors

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- 7-wire or fine wire (1mm²) tinned stranded copper conductor
- Core insulation made of polyethylene (PE)
- Cores twisted into pairs
- Foil wrapping, static screening made of aluminium-laminated plastic film with copper drain wire for each pair
- Bare copper screen braiding
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
0.22 mm²-0.5 mm²: according to DIN 47100, see table T9
1.0 mm²: see design data
- Mutual capacitance**
At 800 Hz:
0.22 mm² max. 70 nF/km
0.34 mm² max. 70 nF/km
0.5 mm² max. 75 nF/km
1.0 mm² max. 85 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Insulation resistance**
> 5 GOhm x km
- Inductivity**
Approx. 0.4 mH/km
- Conductor stranding**
7- or fine-wired strand according to VDE 0881
- Minimum bending radius**
Fixed installation: 10 x outer diameter
- Short-range crosstalk attenuation**
Up to 1 MHz min. 80 dB
- Test voltage**
Core/core: 2000 V
Core/screen: 1000 V
- Temperature range**
Fixed installation: -30 °C to +80 °C
Flexing: -5°C to +70°C
- Characteristic impedance**
at f > 1 MHz: approx. 85 Ohm

Article number	Number of pairs and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® Li2YCY PiMF				
7-wire				
0034040	2 x 2 x 0.22	7.7	33.0	75.4
0034041	3 x 2 x 0.22	8.1	42.0	86
0034042	4 x 2 x 0.22	8.7	50.0	99
0034043	8 x 2 x 0.22	10.9	85.0	161.4
0034044	10 x 2 x 0.22	12.5	100.0	186.4
0034045	2 x 2 x 0.34	9.0	43.0	70
0034046	3 x 2 x 0.34	9.4	55.0	85
0034047	4 x 2 x 0.34	9.8	64.0	103
0034048	8 x 2 x 0.34	12.9	127.0	191
0034049	10 x 2 x 0.34	14.9	150.0	230
7-wire				
0034060	2 x 2 x 0.5	8.5	51.0	96
0034061	3 x 2 x 0.5	10.4	66.0	116
0034062	4 x 2 x 0.5	11.3	71.0	141
0034063	5 x 2 x 0.5	11.8	92.0	180
0034064	8 x 2 x 0.5	14.5	153.0	271
0034065	10 x 2 x 0.5	16.6	182.0	327
Fine wire				
0034070	2 x 2 x 1	9.9	82.0	126
0034071	3 x 2 x 1	11.8	109.0	156
0034072	4 x 2 x 1	12.7	133.0	193
0034073	10 x 2 x 1	19.7	326.0	492

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
TERMI-POINT® is a registered trademark of AMP
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- STAR STRIP stripping tool refer to page 906
- KS 20 cable shears refer to page 904

RE-2Y(ST)Yv

Instrumentation cable with reinforced outer sheath



Benefits

- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic field
- TP structure minimises crosstalk

Application range

- RE-2Y(ST)Yv is intended for use when modern process computers have to process large volumes of data, e.g. high-capacity computer systems in waste incineration plants or sewage treatment plants.
- These cables are suitable for fixed installation in dry or damp rooms, and the version with a black outer sheath can also be used outdoors or for direct burial.

Product features

- Colour: black (based on RAL 9005) or blue for intrinsically safe systems (based on RAL 5015)
- Flame-retardant according to IEC 60332.1.2

- Printed text may differ from illustration

Approvals



Design

- 7-wire bare stranded copper conductor, PE core insulation, cores twisted into pairs, pairs in layers plus 1 core for communication (core colour: orange)
- The communication core is omitted on single-pair versions
- Foil wrapping, static screening made of aluminium-laminated plastic film with tinned drain wire
- Reinforced PVC outer sheath

Technical data

- Core identification code**
a-core: black; b-core: white with consecutive numbers: 1-1, 2-2, 3-3, 4-4 etc.
Three-way version: black, white, red
- Mutual capacitance**
(guideline values at 800 Hz):
C/C: 0.5 mm²: max. 75 nF/km
(guideline values at 800 Hz):
C/C: 1.3 mm²: max. 100 nF/km
- Peak operating voltage**
300 V (not for power applications)
- Insulation resistance**
> 5 GOhm x km
- Conductor resistance**
0.5 mm²: max. 39.2 ohm/km
1.3 mm²: max. 14.3 ohm/km
- Minimum bending radius**
Fixed installation: 7.5 x outer diameter
- Short-range crosstalk attenuation**
At 60 kHz: min. 0.88 dB/km
- Test voltage**
Core/core: 2000 V
Core/screen: 1000 V
- Temperature range**
Fixed installation: -40°C to +70°C
Flexible use: -5°C to +50°C
- Characteristic impedance**
approx. 100 ohms

Article number	Number of pairs and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
RE-2Y(ST)Yv				
0.5 mm² blue				
0032400	1 x 2 x 0.5	7.2	15.0	74
0032401	2 x 2 x 0.5	9.5	30.0	117
0032402	4 x 2 x 0.5	11.1	50.0	140
0032403	8 x 2 x 0.5	13.4	90.0	215
0032405	12 x 2 x 0.5	15.5	130.0	280
0032407	20 x 2 x 0.5	17.9	210.0	385
0.5 mm² black				
0032411	1 x 2 x 0.5	7.2	15.0	74
0032412	2 x 2 x 0.5	9.5	30.0	117
0032413	4 x 2 x 0.5	11.1	50.0	140
0032414	8 x 2 x 0.5	13.4	90.0	215
0032415	10 x 2 x 0.5	14.5	110.0	220
0032417	16 x 2 x 0.5	17.0	170.0	352
0032418	20 x 2 x 0.5	17.9	210.0	385
0032420	36 x 2 x 0.5	22.6	370.0	656
0032421	48 x 2 x 0.5	27.1	490.0	854
1.3 mm² blue				
0032422	1 x 2 x 1.3	8.6	31.0	102
0032423	2 x 2 x 1.3	11.5	62.0	161
0032424	4 x 2 x 1.3	13.8	114.0	230
0032425	8 x 2 x 1.3	16.9	218.0	377
0032426	12 x 2 x 1.3	19.3	322.0	520
0032427	16 x 2 x 1.3	22.8	426.0	656
0032428	24 x 2 x 1.3	27.5	684.0	952
0032429	1 x 3 x 1.3	9.1	44.0	116
1.3 mm² black				
0032430	1 x 2 x 1.3	8.6	31.0	102
0032431	2 x 2 x 1.3	11.5	62.0	161
0032432	4 x 2 x 1.3	13.8	114.0	230
0032433	8 x 2 x 1.3	16.9	218.0	377
0032434	12 x 2 x 1.3	19.3	322.0	515
0032435	16 x 2 x 1.3	22.8	426.0	656
0032436	24 x 2 x 1.3	27.5	684.0	995

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

RE-2Y(ST)Yv PiMF

Instrumentation cable with reinforced outer sheath and pairs in metalfoil



Benefits

- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic field
- Twisted pair (TP) decouples the cable circuits

Application range

- RE-2Y(ST)Y PiMF is intended for use when modern process computers have to process large volumes of data, e.g. high-capacity computer systems in waste incineration plants or sewage treatment plants.
- These cables are suitable for fixed installation in dry or damp rooms, and the version with a black outer sheath can also be used outdoors or for direct burial.

Product features

- Computer cable with screened pairs and reinforced outer sheath
- Colour: black (based on RAL 9005) or blue for intrinsically safe systems (based on RAL 5015)
- Flame-retardant according to IEC 60332.1.2
- Printed text may differ from illustration

Approvals



Design

- 7-wire bare stranded copper conductor, PE core insulation, cores twisted into pairs, pair screening made of aluminium-laminated plastic foil with bare copper drain wire, PiMF marking using numbered foil, pairs in layers and 1 core for communication (core colour: orange)
- The communication core is omitted on single-pair versions
- Aluminium-laminated plastic foil static screen with tinned drain wire
- Reinforced PVC outer sheath

Technical data

- Core identification code**
a-core: black; b-core: white with consecutive numbers: 1-1, 2-2, 3-3, 4-4 etc.
- Mutual capacitance**
(at 800 Hz max):
C/C: 0.5 mm²: 75 nF/km
(at 800 Hz max):
C/C: 1.3 mm²: 100 nF/km
- Peak operating voltage**
(not for power applications)
300 V
- Insulation resistance**
> 5 GOhm x km
- Inductivity**
max. 0.75 mH/km
- Conductor resistance**
0.5 mm²: max. 39.2 ohm/km
1.3 mm²: max. 14.2 ohm/km
- Minimum bending radius**
Fixed installation: 7.5 x outer diameter
- Short-range crosstalk attenuation**
At 60 kHz: min. 1.02 dB/km
- Test voltage**
Core/core: 2000 V
Core/screen: 600 V
- Temperature range**
Fixed installation: -40°C to +70°C
Flexible use: -5°C to +50°C
- Characteristic impedance**
approx. 100 ohms

Article number	Number of pairs and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
RE-2Y(ST)Yv PiMF				
0.5 mm² blue				
0032438	2 x 2 x 0.5	10.0	35.0	128
0032439	4 x 2 x 0.5	11.6	60.0	170
0032441	10 x 2 x 0.5	15.9	136.0	246
0032442	12 x 2 x 0.5	16.7	161.0	351
0032443	16 x 2 x 0.5	19.1	212.0	430
0032444	20 x 2 x 0.5	19.9	262.0	496
0032446	36 x 2 x 0.5	25.5	465.0	850
0.5 mm² black				
0032448	2 x 2 x 0.5	10.0	35.0	128
0032449	4 x 2 x 0.5	11.6	60.0	170
0032450	8 x 2 x 0.5	14.4	121.0	261
0032451	10 x 2 x 0.5	15.9	136.0	246
0032452	12 x 2 x 0.5	16.7	161.0	351
0032453	16 x 2 x 0.5	19.1	212.0	430
0032456	36 x 2 x 0.5	25.5	465.0	850
1.3 mm² blue				
0032458	2 x 2 x 1.3	12.4	68.0	184
1.3 mm² black				
0032464	2 x 2 x 1.3	12.4	68.0	184
0032465	4 x 2 x 1.3	14.2	124.0	269
0032466	8 x 2 x 1.3	18.5	239.0	442
0032467	12 x 2 x 1.3	22.2	353.0	593
0032469	24 x 2 x 1.3	29.0	697.0	1104

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

RD-Y(ST)Y

Static screened data transmission cable for control technology



Benefits

- In order to reduce costs, the multi-wire stranded copper cable has been provided for Maxi TERMI-POINT® connecting technology. This wiring method (semi-automatic) considerably reduces the time and the costs required for installation.
- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic field
- Twisted pair construction permits largely interference-free operation (decoupling).

Application range

- RD-Y(St)Y is used as a data transmission cable for applications such as control centres, monitoring systems and control units
- Designed for fixed installations and installations in enclosed rooms.

Product features

- Colour: grey (based on RAL 7000) or blue for intrinsically safe systems (based on RAL 5015)
- Printed text may differ from illustration

Approvals



Design

- 7-wire bare stranded copper conductor
- Core insulation made of PVC
- Cores twisted into pairs, 4 pairs twisted into a bundle, bundles in layers, bundles labelled using numbered foil
- Aluminium-laminated plastic foil static screen with tinned drain wire
- Outer sheath made of PVC

Technical data



Core identification code

- Pair no. 1: a-conductor: blue
b-conductor: red
- Pair no. 2: a-conductor: grey
b-conductor: yellow
- Pair no. 3: a-core: green
b-core brown
- Pair no. 4: a-core: white
b-core black



Mutual capacitance

At 800 Hz:
≤ 100 nF/km
The values may be exceeded by 20 % on cables with up to 4 double cores.



Peak operating voltage

(not for power applications) 225 V



Insulation resistance

Core/core ≥ 100 MΩm x km
Core/screen ≥ 100 MΩm x km



Conductor resistance

(loop): ≤ 73.6 Ωm/km

Cable attenuation/attenuation

At 1 kHz: approx. 1.2 dB/km
At 10 kHz: approx. 3.0 dB/km



Minimum bending radius

Fixed installation: 7.5 x outer diameter

Short-range crosstalk attenuation

At 10 kHz and 500 m cable length: min. 60 dB



Test voltage

50 Hz, 2 min. C/C: 2000 V
50 Hz, 2 min. C/S: 2000 V



Temperature range

Fixed installation: -40°C to +70°C
Flexible use: -5°C to +50°C



Characteristic impedance

At 1 kHz: approx. 370 Ωm
At 10 kHz: approx. 130 Ωm

Article number	Number of pairs and mm ² per conductor	Number of bundles	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
RD-Y(ST)Y grey					
0032470	2 x 2 x 0.5		6.5	25.0	65
0032471	4 x 2 x 0.5	1	9.0	45.0	110
0032472	8 x 2 x 0.5	2	11.5	85.0	180
0032474	16 x 2 x 0.5	4	15.5	165.0	310
0032475	24 x 2 x 0.5	6	19.0	245.0	450
0032476	32 x 2 x 0.5	8	21.0	325.0	560
0032477	48 x 2 x 0.5	12	25.5	485.0	810
RD-Y(ST)Y blue					
0032479	2 x 2 x 0.5		6.5	25.0	65

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

MAXI-TERMI-POINT® is a registered trademark of AMP

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- STAR STRIP stripping tool refer to page 906

JE-Y(ST)Y ...BD

Static screened installation cable for industrial electronics



Benefits

- Perfect for cost-effective installation, e.g. connections with insulation displacement technology (IDC).
- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic field
- Twisted pair (TP) decouples the cable circuits

Application range

- JE-Y(St)Y...BD is a connection cable for fixed installation in industrial control systems, as required in measurement, control, signalling and data applications
- For fixed installation on and under plaster, in dry and damp rooms.
- For outdoor use this cable should be installed under plaster only.

Product features

- The 2-pair version (2 x 2 x 0.8) is twisted into a star quad
- Flame-retardant according to IEC 60332.1.2
- Printed text may differ from illustration

Approvals



Design

- Solid bare copper conductor
- Core insulation: Based on PVC
- 2 cores twisted into a pair, and 4 pairs into units (for 2 x 2 x 0.8 as star quad cable)
- Foil wrapping, static screening made of aluminium-laminated plastic film with copper drain wire
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
according to VDE 0815, refer to Appendix T10
- Approvals**
VDE 0815
- Mutual capacitance**
max. 100 nF/km
- Peak operating voltage**
(not for power applications) 225 V
- Insulation resistance**
> 100 MOhm x km
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Single-wire (solid conductor)
0.8 mm: 0.50 mm²
- Minimum bending radius**
Fixed installation: 6 x outer diameter
- Test voltage**
Core/core: 500 V
Core/screen: 2000 V
- Loop resistance**
73.2 ohm/km
- Temperature range**
Fixed installation: -30°C to +70°C
Flexible use: -5°C to +50°C

Article number	Number of cores and cable diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
JE-Y(ST)Y...BD				
0034190	2 x 2 x 0.8	6.0	25.0	60
0034191	4 x 2 x 0.8	8.5	45.0	96
0034192	8 x 2 x 0.8	11.0	85.0	158
0034193	12 x 2 x 0.8	13.0	126.0	225
0034194	16 x 2 x 0.8	14.5	166.0	290
0034195	20 x 2 x 0.8	16.0	206.0	350
0034197	40 x 2 x 0.8	22.0	407.0	660

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 100/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® EB JE-Y(ST)Y 0,8 BD refer to page 280

Accessories

- STAR STRIP stripping tool refer to page 906

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

JE-LiYCY ...BD

Screened data transmission cable for industrial electronics



Benefits

- Can be used for Maxi TERMI-POINT® wiring
- Overall braid minimises electrical interference
- TP structure minimises crosstalk

Application range

- Connection cable for use in electronics and in measurement, control and signal applications
- This cable is also used as a pulse and data transmission cable
- JE-LiYCY...BD has also proved to be an efficient connection cable for telephone systems, e.g. paging and intercom systems.
- For fixed installation on and under plaster, in dry and damp rooms.
- For outdoor use this cable should be installed under plaster only.

Product features

- The 2-pair version (2 x 2 x 0.5) is twisted into a star quad
- Flame-retardant according to IEC 60332.1.2
- Printed text may differ from illustration

Approvals



Design

- 7-wire bare stranded copper conductor
- Core insulation: Based on PVC
- 2 cores twisted into a pair, and 4 pairs into units (for 2 x 2 x 0.5 as star quad cable)
- Bundles twisted in layers, foil wrapping, screening braid made of tinned copper wires
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
according to VDE 0815, refer to Appendix T 10
- Approvals**
VDE 0815
- Mutual capacitance**
max. 100 nF/km
- Peak operating voltage**
(not for power applications) 225 V
- Insulation resistance**
> 100 MOhm x km
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Multi-wire, 7 x 0.3, refer to Appendix T 11
- Minimum bending radius**
Fixed installation: 5 x outer diameter
- Test voltage**
Core/core: 500 V
Core/screen: 2000 V
- Loop resistance**
78.4 Ohm/km
- Temperature range**
Fixed installation: -30°C to +70°C
Flexible use: -5°C to +50°C

Article number	Number of pairs and conductor cross section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
JE-LiYCY...BD				
0034200	2 x 2 x 0.5	7.5	51.0	70
0034201	4 x 2 x 0.5	10.0	87.0	155
0034202	8 x 2 x 0.5	13.0	144.0	260
0034208	12 x 2 x 0.5	15.5	195.0	340
0034203	16 x 2 x 0.5	17.0	249.0	430
0034210	20 x 2 x 0.5	18.5	298.0	495
0034204	24 x 2 x 0.5	20.5	348.0	605
0034212	32 x 2 x 0.5	22.5	441.0	738

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 MAXI-TERMI-POINT® is a registered trademark of AMP
 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® EB JE-LiYCY...BD refer to page 279

Accessories

- SKINTOP® MS-SC-M refer to page 668
- Universal strip stripping and cutting tool refer to page 906
- STAR STRIP stripping tool refer to page 906

J-Y(ST)Y ..LG Indoor Cable

Installation cable in accordance with VDE 0815



Benefits

- Indoor telephone cables transmit analogue or digital signals
- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic field
- TP structure minimises crosstalk

Application range

- In news and communication applications, the following connections can be installed: telephone, telefax, telex, standard modems for postal services; burglar and fire alarm systems (cf. fire alarm cables); communication and paging systems; access control, time and data control systems
- Can be used in dry and wet interiors for fixed installation on and under plaster

Product features

- The 2-paired versions = star quad cable design
- Flame-retardant according to IEC 60332.1.2
- Printed text may differ from illustration

Approvals



Design

- Solid bare copper conductor
- Core insulation: Based on PVC
- Cores twisted in pairs, foil wrapping and static screen made of aluminium-laminated plastic film with copper drain wire over the cable core
- PVC-based outer sheath
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
according to VDE 0815, refer to Appendix T10
- Approvals**
VDE 0815
- Peak operating voltage**
(not for power applications)
300 V
- Insulation resistance**
> 100 MOhm x km
- Coupling**
(800 Hz): K1: 80% ≤ 300 pF/100m
- Conductor cross-section in**
0.6 mm: 0.28 mm²
0.8 mm: 0.50 mm²
- Cable attenuation/attenuation**
0.6 mm: 1.7 dB/km
0.8 mm: 1.1 dB/km
- Minimum bending radius**
10 x outer diameter
- Test voltage**
Core/core: 800 V
Core/screen: 800 V
- Loop resistance**
0.6 mm: max. 130 ohm/km
0.8 mm: max. 73.2 ohm/km
- Temperature range**
Fixed installation: -30°C to +70°C

Article number	Number of double cores	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
J-Y(ST)Y...LG copper conductor 0.6 mm				
1591300	1	5.0	6.9	30
1591301	2	5.5	13.0	40
1591302	3	6.3	18.0	50
1591303	4	6.7	24.0	60
1591304	5	7.2	30.0	70
1591305	6	7.5	35.0	80
1591306	8	8.0	46.0	90
1591307	10	9.0	58.0	110
1591308	12	9.5	71.0	130
1591310	16	10.5	93.0	160
1591311	20	11.0	116.0	190
1591312	24	11.5	139.0	220
1591313	30	13.0	172.0	280
1591314	40	15.0	229.0	350
1591315	50	17.0	286.0	430
1591316	60	18.0	342.0	500

Article number	Number of double cores	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1591318	100	23.0	568.0	850
J-Y(ST)Y...LG copper conductor 0.8 mm				
1591500	1	6.0	11.0	40
1591501	2	7.0	21.0	60
1591502	3	8.5	31.0	80
1591503	4	9.0	41.0	100
1591504	5	9.5	52.0	120
1591505	6	10.5	62.0	140
1591506	8	11.5	82.0	170
1591507	10	13.0	102.0	220
1591508	12	14.0	123.0	250
1591510	16	15.5	164.0	320
1591511	20	16.5	204.0	380
1591512	24	19.0	244.0	460
1591513	30	20.0	304.0	560
1591514	40	22.5	405.0	710

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 100/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- J-2Y(ST)Y ...ST III BD refer to page 296

Accessories

- Universal strip stripping and cutting tool refer to page 906
- STAR STRIP stripping tool refer to page 906

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

J-Y(ST)Y ...LG Fire Alarm Cable

Installation cable in accordance with VDE 0815 with red outer sheath



Info

- Installation cable with a red outer sheath in accordance with VDE 0815

Benefits

- The cable is marked with the phrase "Fire alarm cable" at regular intervals on the sheath. It is therefore used especially for installation in fire alarm systems.
- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic field
- TP structure minimises crosstalk

Application range

- This installation cable is used to transmit signals.
- For fixed installation on and under plaster, in dry and damp rooms.
- For outdoor use this cable should be installed under plaster only.

Product features

- The 2-paired versions = star quad cable design
- Flame-retardant according to IEC 60332.1.2
- Printed text may differ from illustration

Approvals



Design

- Solid bare copper conductor
- Core insulation: Based on PVC
- Cores twisted in pairs, pairs twisted together, foil wrapping over cable core, static screen made of aluminium-laminated plastic film with copper drain wire
- PVC-based outer sheath
Outer sheath colour: flame red (RAL 3000)

Technical data

- Core identification code**
according to VDE 0815, refer to Appendix T 10
- Peak operating voltage**
(not for power applications)
300 V
- Based on**
VDE 0815
- Insulation resistance**
> 100 MOhm x km
- Coupling**
(800 Hz): K1: 80% ≤ 300 pF/100m
- Conductor cross-section in**
0.8 mm: 0.50 mm²
- Cable attenuation/attenuation**
0.8 mm: 1.1 dB/km
- Minimum bending radius**
Fixed installation:
10 x outer diameter
- Test voltage**
Core/core: 800 V
Core/screen: 800 V
- Loop resistance**
max. 73.2 Ohm/km
- Temperature range**
Fixed installation: -30°C to +70°C

Article number	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
J-Y(ST)Y...LG red				
1708001	1 x 2 x 0.8	6.0	11.0	40
1708002	2 x 2 x 0.8	7.0	21.0	60
1708004	4 x 2 x 0.8	9.0	41.0	100
1708006	6 x 2 x 0.8	10.5	62.0	140
1708010	10 x 2 x 0.8	13.5	102.0	220
1708020	20 x 2 x 0.8	16.5	204.0	380

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 100/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- STAR STRIP stripping tool refer to page 906
- KS 20 cable shears refer to page 904

Telephone cables

Indoor cables

J-2Y(ST)Y ...ST III BD

Installation cable in accordance with VDE 0815 with PE core insulation

J-2Y(ST)Y...STIII BD



Benefits

- Suitable for data transmission rates of up to 16 Mbits/s
- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic field

Application range

- Examples of use: for connecting EDP system units or for circuits for airfield lighting, ISDN private branch exchanges, operating data acquisition, operating data entry, access control and time recording systems, industrial electronics, all designed for maximum security and speed
- Can be used in dry and wet interiors for fixed installation on and under plaster

Product features

- Design: in accordance with DIN VDE 0815 table 4, type JE-Y(ST)Y...BD but with PE core insulation
- The bundle structure means 2 pairs are twisted into a star quad.
- Flame-retardant according to IEC 60332.1.2
- Printed text may differ from illustration

Approvals



Design

- Solid bare copper conductor
- Core insulation made of polyethylene (PE)
- Foil wrapping, static screening made of aluminium-laminated plastic film with copper drain wire
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data

- Core identification code**
according to VDE 0815, refer to Appendix T10
- Mutual capacitance**
(800 Hz) max. 52 nF/km
- Peak operating voltage**
(not for power applications)
300 V
- Based on**
VDE 0815
- Insulation resistance**
> 5 GOhm x km
- Coupling**
K1: 98 % <400 pF/300 m
K9-12: 98 % < 100 pF/300 m
- Conductor cross-section in**
0.6 mm: 0.28 mm²
- Cable attenuation/attenuation**
At 16 MHz: < 8 dB/100 m
- Minimum bending radius**
Fixed installation: 10 x outer diameter
- Short-range crosstalk attenuation**
4-16 MHz: 2-pair ≥ 45 dB
4-16 MHz: >2-pair ≥ 20 dB
- Test voltage**
Core/core: 500 V
Core/screen: 2000 V
- Loop resistance**
max. 130 ohm/km
- Temperature range**
Fixed installation: -30°C to +70°C
- Characteristic impedance**
100 Ohm +/- 15 %

Article number	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
J-2Y(ST)Y...ST III BD				
0034171	2 x 2 x 0.6	5.5	13.0	40
0034173	4 x 2 x 0.6	7.5	24.0	60
0034175	8 x 2 x 0.6	8.5	46.0	90
0034176	10 x 2 x 0.6	9.5	58.0	148
0034178	20 x 2 x 0.6	13.5	116.0	190
30017810	50 x 2 x 0.6	18.0	288.0	412
30017811	100 x 2 x 0.6	25.8	570.0	650

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 100/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® Li2YCY (TP) refer to page 286

Accessories

- STAR STRIP stripping tool refer to page 906

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

J-H(ST)H ...BD

Halogen-free installation cable in accordance with VDE 0815



Benefits

- Used to meet enhanced fire protection requirements concerning protection of people and high-value property
- Does not emit any toxic or corrosive gases in the event of fire and resists the spread of fire
- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic field
- TP structure minimises crosstalk

Application range

- This halogen-free, flame-retardant installation cable with static screen is used for telephone, data and signal transmission in subscriber stations and private branch exchange construction for telephone systems; on dry and wet premises as well as on and under plaster.

Product features

- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)
- Halogen-free and flame-retardant installation cable in accordance with VDE 0815
- Variant with 2 double cores twisted as star quad
- Printed text may differ from illustration

Approvals



Design

- Solid bare copper conductor
- Core insulation made of special halogen-free compound
- Cores twisted into pairs
- Foil wrapping, static screening made of aluminium-laminated plastic film with copper drain wire
- Outer sheath made of special halogen-free compound
Outer sheath colour: grey (RAL 7001)

Technical data

- Core identification code**
according to VDE 0815, refer to Appendix T 10
- Approvals**
VDE 0815
- Mutual capacitance**
max. 120 nF/km
- Peak operating voltage**
(not for power applications)
300 V
- Insulation resistance**
>100 MOhm x km
- Coupling**
K1: approx. 300 pF/100 m
K9-12: approx. 100 pF/100 m
- Minimum bending radius**
Fixed installation: 6 x outer diameter
- Test voltage**
Core/core: 800 V
Core/screen: 800 V
- Loop resistance**
0.6 mm: max. 130 ohm/km
0.8 mm: max. 73.2 ohm/km
- Temperature range**
Fixed installation: -30°C to +70°C
- Conductor cross-section**
0.6 mm: 0.28 mm²

Article number	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
J-H(ST)H-BD				
3022220	2 x 2 x 0,6	8.0	14.1	65
3022221	4 x 2 x 0,6	10.0	25.4	100
3022222	6 x 2 x 0,6	11.0	37.0	117
3022223	10 x 2 x 0,6	12.0	59.0	155
30017787	2 x 2 x 0,8	9.0	25.0	77
30017788	4 x 2 x 0,8	11.0	45.0	135

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 100/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Photographs are not to scale and do not represent detailed images of the respective products.

Telephone cables

Halogen-free installation and fire alarm cables

J-H(ST)H ...BD Fire Alarm Cable

Halogen-free installation cable in accordance with VDE 0815 with red outer sheath



Brandmeldekabel J-H(ST)H ... BD BMK



Info

- The halogen-free and flame retardant fire alarm cable in accordance with VDE 0815

Benefits

- Used to meet enhanced fire protection requirements concerning protection of people and high-value property
- Does not emit any toxic or corrosive gases in the event of fire and resists the spread of fire
- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic field
- TP structure minimises crosstalk

Application range

- This halogen-free, flame-retardant installation cable with static screen is used for telephone, data and signal transmission in subscriber stations and private branch exchange construction for telephone systems; on dry and wet premises as well as on and under plaster.

Product features

- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)
- Printed text may differ from illustration
- Variant with 2 double cores twisted as star quad

Approvals



Design

- Solid bare copper conductor
- Core insulation made of special halogen-free compound
- Cores twisted into pairs
- Foil wrapping, static screening made of aluminium-laminated plastic film with copper drain wire
- Outer sheath made of special halogen-free compound
Outer sheath colour: flame red (RAL 3000)

Technical data

- Core identification code**
according to VDE 0815, refer to Appendix T10
- Mutual capacitance**
max. 120 nF/km
- Peak operating voltage**
(not for power applications)
300 V
- Based on**
VDE 0815
- Insulation resistance**
>100 MOhm x km
- Coupling**
K1: approx. 300 pF/100 m
K9-12: approx. 100 pF/100 m
- Minimum bending radius**
Fixed installation: 6 x outer diameter
- Test voltage**
Core/core: 800 V
Core/screen: 800 V
- Loop resistance**
max. 73.2 Ohm/km
- Temperature range**
Fixed installation: -30°C to +70°C
- Conductor cross-section**
0.8 mm: 0.50 mm²

Article number	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
J-H(ST)H...BD				
30017798	2 x 2 x 0,8	9.0	25.0	77
30017801	10 x 2 x 0,8	15.0	106.0	250

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 100/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

A-2Y(L)2Y ...ST III BD Telephone Outdoor Cable



A-2YF(L)2Y ...ST III BD Outdoor Cable



Application range

- Do not install cables that are meant to be placed in ducts or for direct burial in areas exposed to fire hazards

Product features

- Outer sheath colour: black (RAL 9005)

Design

A-2Y(L)2Y ...ST III BD Telephone Outdoor Cable

- Solid bare copper conductor
- Core insulation made of polyethylene (PE)
- 5 star-quads are twisted into each basic unit, which is then twisted together with the main unit to form the cable core
- Paper tape wrapping
- Laminated sheath with aluminium-coated plastic tape, PE outer sheath

A-2YF(L)2Y ...ST III BD Outdoor Cable

- Similar to A-2Y(L)2Y, but with petroleum-jelly filling, laminated sheath made of aluminium-coated plastic tape, and black PE outer sheath

Technical data



Core identification code
According to VDE 0816, refer to T 10



Mutual capacitance
At 800 Hz: max. 52 nF/km



Peak operating voltage
(not for power applications) 225 V



Impedance
At 800 Hz 0.6 mm: approx. 720 Ohm
At 800 Hz 0.8 mm: approx. 520 Ohm



Based on
VDE 0816



Insulation resistance
A-2Y(L)2Y ...ST III BD Telephone Outdoor Cable
> 5.0 Gohm-km
A-2YF(L)2Y ...ST III BD Outdoor Cable
> 1.5 Gohm-km



Coupling
K1: 98 % < 400 pF/300 m
K9-12: 98 % < 100 pF/300 m



Conductor cross-section in
0.6 mm: 0.28 mm²
0.8 mm: 0.50 mm²

Cable attenuation/attenuation A-2Y(L)2Y ...ST III BD Telephone Outdoor Cable

At 800 Hz 0.6 mm: approx. 1.04 dB/km
At 800 Hz 0.8 mm: approx. 0.78 dB/km
A-2YF(L)2Y ...ST III BD Outdoor Cable
At 800 Hz 0.6 mm: approx. 1.0 dB/km
At 800 Hz 0.8 mm: approx. 0.8 dB/km



Minimum bending radius
10 x outer diameter



Test voltage
Core/core: 500 V
Core/screen: 2000 V



Loop resistance
0.6 mm: 130 ohm/km
0.8 mm: 73.2 ohm/km



Temperature range
During installation: -20 °C to +50 °C
After installation: ≤ +70 °C

Article number	Number of double cores	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
A-2Y(L)2Y...STIII BD copper conductor 0.6 mm				
1591050	2	10.5	11.0	80
1591051	4	11.0	23.0	125
1591052	6	11.5	34.0	130
1591053	10	13.0	57.0	165
1591054	20	16.0	113.0	265
1591055	30	18.0	170.0	355
1591056	40	19.5	226.0	440
1591057	50	21.0	283.0	525
1591058	70	23.5	396.0	705
1591061	200	36.5	1,131.0	1755
1591063	300	42.5	1,696.0	2525
A-2Y(L)2Y...ST III BD copper conductor 0.8 mm				
1591150	2	8.6	20.0	100
1591151	4	10.9	40.0	160
1591152	6	13.5	60.0	175
1591153	10	15.0	101.0	235
1591163	14	16.5	141.0	296
1591154	20	18.0	201.0	390
1591155	30	21.0	302.0	540
1591156	40	23.5	402.0	680
1591157	50	25.0	503.0	835
A-2YF(L)2Y...ST III BD copper conductor 0.6 mm				
1591028	2	8.3	11.0	67
1591029	4	10.4	23.0	104
1591030	6	12.0	34.0	140
1591031	10	14.0	57.0	190
1591032	20	17.5	113.0	310
1591033	30	20.0	170.0	430
1591035	50	24.5	283.0	660
1591037	100	31.5	565.0	1225
A-2YF(L)2Y...ST III BD copper conductor 0.8 mm				
1591217	2	8.8	20.0	83
1591218	4	11.2	40.0	134
1591221	6	13.5	60.0	195
1591222	10	15.5	101.0	275
1591223	20	19.5	201.0	475
1591224	30	22.5	302.0	665
1591225	40	25.5	402.0	860
1591226	50	27.5	503.0	1050
1591228	100	36.5	1,005.0	1985

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-SC-M refer to page 668
- Multipurpose shears A and B refer to page 902
- STAR STRIP stripping tool refer to page 906

New

UNITRONIC® BUS ASI

LAPP KABEL STUÏGART UNITRONIC® BUS ASI

LAPP KABEL STUÏGART UNITRONIC® BUS ASI

LAPP KABEL STUÏGART UNITRONIC® BUS ASI



Info

- “LD” = Long Distance

Benefits

- The new BUS ASI LD 2 x 2.5 (Long Distance) allows even modules located further away to be connected. AS-I power supplies can be reduced. The BUS ASI LD is downwards-compatible with version 1.5.
- The rubber versions are halogen-free

Application range

- Communication at sensor/actuator level
- UNITRONIC® Fieldbus sensor-/actuator wiring
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- The TPE version has an oil-resistant outer sheath. It is suitable for wet areas, in particular in conjunction with water-soluble cooling lubricants.

Product features

- Data and power are transmitted via an un-screened, geometrically coded two-core flat cable (protection against polarity reversal).
- The conductor is contacted by “piercing technology” within the ASI modules.
- The sensors are connected to the ASI modules (coupling modules) using round cables (connection cables).

Approvals



- ASI is standardised Europe-wide in EN 50295 and internationally in IEC 62026-2.
- PVC version has UL/CSA (CMG) approval.

Design

- Extra-fine wire, tinned copper strands
- Core insulation: blue and brown
- Profiled outer sheath made of rubber (G), thermoplastic elastomers (TPE) or PVC
- Colour: yellow (RAL 1023) or black (RAL 9005)
- Colour: red (RAL 3000)

Technical data



Approvals

UL/CSA version: CMGc(UL)us or (UL)CL2 or AWM 300V FT4 approval



Peak operating voltage

Yellow: 300 V (not for power applications)
Black: 300 V (not for power applications)
Red: 300 V



Conductor resistance

1.5 mm²: max. 13.7 Ohm/km
2.5 mm²: max. 8.21 Ohm/km



Minimum bending radius

Fixed installation: 12 mm
Flexible use 24 mm



Test voltage

Core/core: 2000 V



Temperature range

Dependent on outer sheath material:
PVC: -30 °C to +90 °C
Other materials: -40 °C to +85 °C
During installation:
PVC -20 °C to +90 °C
Other materials:
-30 °C to +85 °C

Article number	Article designation	Outer sheath material	Outer sheath colour	Application	Number of cores and mm ² per conductor	Copper index (kg/km)	Weight (kg/km)
For fixed and flexible applications (19-wire stranded conductor)							
2170228	UNITRONIC® BUS ASI (G)	EPDM (rubber)	yellow	Data and power transmission	2 x 1,5	29.0	85
2170229	UNITRONIC® BUS ASI (G)	EPDM (rubber)	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29.0	85
2170371	UNITRONIC® BUS ASI LD (G)	EPDM (rubber)	yellow	Data and power transmission	2 x 2,5	48.0	85
2170372	UNITRONIC® BUS ASI LD (G)	EPDM (rubber)	black	Transmission of 30 V DC auxiliary power	2 x 2,5	48.0	85
2170230	UNITRONIC® BUS ASI (TPE)	TPE	yellow	Data and power transmission	2 x 1,5	29.0	64
2170231	UNITRONIC® BUS ASI (TPE)	TPE	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29.0	64
2170232	UNITRONIC® BUS ASI (TPE)	TPE	red	Transmission of 230 V AC auxiliary power	2 x 1,5	29.0	64
2170842	UNITRONIC® BUS ASI (PVC) A	PVC UL/CSA (CMG)	yellow	Data and power transmission	2 x 1,5	29.0	70
2170843	UNITRONIC® BUS ASI (PVC) A	PVC UL/CSA (CMG)	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29.0	70

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Lapp Kabel is a member of the AS-International Association

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® DIX-M AUTOMATION refer to page 673
- Universal strip stripping and cutting tool refer to page 906
- AS-i clip clamp / AS-i End sealing refer to page 967
- AS-I STRIP special stripping tool refer to page 908
- AS-I STRIP special
- SKINTOP® DIX ASI

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

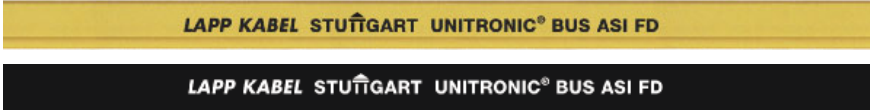
New

UNITRONIC® BUS ASI FD
Highly flexible application



Info

- "FD" = suitable for power chains
- "LD" = Long Distance



Benefits

- The new BUS ASI LD 2 x 2.5 (Long Distance) allows even modules located further away to be connected. AS-I power supplies can be reduced. The BUS ASI LD is downwards-compatible with version 1.5.
- For highly flexible applications (power chains, moving machine parts)
- High oil-resistance

Application range

- Communication at sensor/actuator level
- UNITRONIC® Fieldbus sensor-/actuator wiring

Product features

- PUR versions are halogen-free according to IEC 60754-1
- Flame-retardant according to IEC 60332-1-2, UL FT-2 flame test
- Data and power are transmitted via an un-screened, geometrically coded two-core flat cable (protection against polarity reversal).
- The conductor is contacted by "piercing technology" within the ASI modules.
- The sensors are connected to the ASI modules (coupling modules) using round cables (connection cables).

Approvals



- ASI is standardised Europe-wide in EN 50295 and internationally in IEC 62026-2.
- TPE variant: UL AWM Style 2103 CSA AWM II A/B
- PUR versions: UL AWM Style 20549

Design

- Extra-fine wire, tinned copper strands
- Core insulation: blue and brown
- Profiled outer sheath: TPE or PUR
- Colour: yellow (RAL 1023) or black (RAL 9005)

Technical data

- Peak operating voltage**
300 V (not for power applications)
- Conductor resistance**
1.5 mm²: max. 13.7 Ohm/km
2.5 mm²: max. 8.21 Ohm/km
- Minimum bending radius**
Fixed installation: 12 mm
Flexing without fixing: 24 mm
Flexing with fixing: 60 mm (15 x D)
- Test voltage**
Core/core: 2000 V
- Temperature range**
Fixed installation:
-40 °C to +80 °C (TPE +105 °C)
Flexing – without fixing:
-30 °C to +70 °C (TPE +105 °C)

Article number	Article designation	Outer sheath material	Outer sheath colour	Application	Number of cores and mm ² per conductor	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications (power chains, moving machine parts)							
2170311	UNITRONIC® BUS ASI FD P FRNC	PUR UL/CSA (AWM)	yellow	Data and power transmission	2 x 1,5	29.0	64
2170312	UNITRONIC® BUS ASI FD P FRNC	PUR UL/CSA (AWM)	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29.0	64
2170317	UNITRONIC® BUS ASI LD FD P		yellow	Data and power transmission	2 x 2,5	48.0	74
2170318	UNITRONIC® BUS ASI LD FD P		black	Transmission of 30 V DC auxiliary power	2 x 2,5	48.0	74
2170830	UNITRONIC® BUS ASI FD (TPE) A	TPE UL/CSA (AWM)	yellow	Data and power transmission	2 x 1,5	29.0	64
2170831	UNITRONIC® BUS ASI FD (TPE) A	TPE UL/CSA (AWM)	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29.0	64

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths Lapp Kabel is a member of the AS-International Association Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® DIX-M AUTOMATION refer to page 673
- Universal strip stripping and cutting tool refer to page 906
- AS-i clip clamp / AS-i End sealing refer to page 967
- AS-I STRIP special stripping tool refer to page 908
- AS-I STRIP special
- SKINTOP® DIX ASI

UNITRONIC® BUS PB

Fixed installation



Info

- Lapp Kabel is a member of the PROFIBUS User Organisation (PNO)
- A for Advanced here: UL and CSA approvals

Application range

- For fixed installation
Maximum electromagnetic screening
- Dry or damp rooms
- Item nos. 2170233, 2170333, 2170820, 2170824, 2170826 are all UV-resistant

Product features

- These bus cables can be used for PROFIBUS-DP as well as for PROFIBUS-FMS and FIP
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m

Approvals



- In accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC NET, also suitable for FIP (Factory Instrumentation Protocol)

Design

- FC: "Fast Connect" cable design
- P: Polyurethane
- H: Halogen-free
- PE: polyethylene, e.g. for the food and beverage industry
- 7-W: 7-wire, e.g. for applications where vibrations occur
- COMBI: Data transmission and power supply in one cable

Technical data



Approvals
See below for UL approval type

Resistant
UV-resistant products
Item nos. 2170233, 2170333, 2170820, 2170824, 2170826 are all UV-resistant



Mutual capacitance
(800 Hz): max. 30 nF/km



Peak operating voltage
(not for power applications) 250 V



Conductor resistance
(loop): max. 133 ohm/km



Minimum bending radius
Fixed installation: see data sheet



Test voltage
Core/core: 1500 V



Characteristic impedance
150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For fixed installation - conventional cable assembly					
2170220	UNITRONIC® BUS PB	1 x 2 x 0.64	8.0	30.1	74
2170233	UNITRONIC® PB PE	1 x 2 x 0.64	8.0	30.1	57
2170226	UNITRONIC® BUS PB H 7-W	1 x 2 x 0.64	8.0	30.1	55
2170225	UNITRONIC® BUS PB COMBI 7-W	1 x 2 x 0,64 Ø + 3 x 1,0 mm ²	9.8	59.0	92
For fixed installation - UL/CSA CMX approval					
2170219	UNITRONIC® BUS PB A	1 x 2 x 0.64	8.0	30.1	57
For fixed installation - UL/CSA CMG approval					
2170824	UNITRONIC® BUS PB 7-W A	1 x 2 x 0.64	8.0	30.1	55
For fixed installation - "Fast Connect" cable assembly					
2170333	UNITRONIC® BUS PB PE FC	1 x 2 x 0.64	8.0	26.0	67
For fixed installation - UL/CSA CMX approval					
2170330	UNITRONIC® BUS PB P FC	1 x 2 x 0.64	8.0	26.0	71
For fixed installation - "Fast Connect" cable assembly - UL/CSA CMG approval					
2170820	UNITRONIC® BUS PB FC	1 x 2 x 0.64	8.0	26.0	84
2170826	UNITRONIC® BUS PB 7-W FC	1 x 2 x 0.64	8.0	26.0	67
2170326	UNITRONIC® BUS PB-H FC	1 x 2 x 0.64	8.0	26.0	72

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
SIMATIC NET® is a registered trademark of Siemens AG
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® BUS PB ROBUST refer to page 303
- UNITRONIC® BUS PB 105 refer to page 303

Accessories

- FC Strip stripping tool refer to page 908

UNITRONIC® BUS PB ROBUST

Fixed installation

LAPP KABEL STUÏTGART UNITRONIC® BUS PB ROBUST



Benefits

- Robust PROFIBUS cable for use under harsh environmental conditions

Application range

- For use for PROFIBUS-DP or FIP in harsh industrial environments
- Fixed installation

Product features

- Significantly extended use and application areas, water and chemical resistance for use in industrial conditions.
- High resistance to tensides, soaps etc.
- UV-resistant
- Flame-retardant according to IEC 60332.1.2

- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
 93.75 kbit/s = 1200 m
 187.5 kbit/s = 1000 m
 500 kbit/s = 400 m
 1.5 Mbit/s = 200 m
 12.0 Mbit/s = 100 m

Approvals



Design

- Solid and bare copper conductor
- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Tin-plated copper wire braiding
- With conventional cable design, but with an outer sheath made of special TPE

	Mutual capacitance (1 kHz): approx. 28.5 nF/km
	Peak operating voltage (not for power applications) 250 V
	Minimum bending radius Fixed installation: 75 mm
	Test voltage Core/core: 1500 V Core/screen: 1500 V
	Temperature range -40 °C to +80 °C
	Characteristic impedance (3 - 20 MHz): 150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For fixed installation					
2170620	UNITRONIC® BUS PB ROBUST	1 x 2 x 0.64	8.0	26.0	55

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
 Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
 Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS PB 105

Fixed installation

LAPP KABEL STUÏTGART UNITRONIC® BUS PB 105



Benefits

- A standard PROFIBUS cable can only be used up to a max. temperature of 80 °C
- This enables an extended area of application

Application range

- Cable has been designed for use in factory halls where temperatures up to max. 105 °C may occur.

Product features

- Flame-retardant according to IEC 60332.1.2
- Oil-resistant

Approvals



Design

- Stranded conductor, 7-wire, bare
- Core insulation: PP
- Overall screening with copper braid and plastic-laminated aluminium foil
- Tin-plated copper wire braiding
- PVC outer sheath for use up to 105 °C

Suitable connectors

- EPIC® Data connectors 312

Technical data	
	Mutual capacitance Approx. 28.5 nF/km
	Peak operating voltage max. 100 V (not for power applications)
	Minimum bending radius Fixed installation: 45 mm once Flexing: 65 mm
	Test voltage Core/core: 1500 V Core/screen: 1500 V
	Temperature range -30 °C to +105 °C
	Characteristic impedance (3 - 20 MHz): 150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170630	UNITRONIC® BUS PB 105	1 x 2 x 0.64	8.0	30.1	72

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Multipurpose shears A and B refer to page 902

UNITRONIC® BUS PB FRNC FC

Fixed installation

LAPP KABEL STUÏTGART UNITRONIC® BUS PB FRNC FC



Info

- **FRNC = Flame Retardant Non Corrosive**
 - Reduction of flame-propagation and density and toxicity of smoke gases in the event of fire
 - Minimisation of damage to buildings and production facilities
 - Safety for staff and in areas with high density of people

Benefits

- Halogen-free and highly flame-retardant
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- Fast Connect (FC) cable design

Application range

- This cable provides special advantages for use in sensitive areas where fire propagation must be avoided and the presence of toxic fumes would cause personal injury and damage to equipment.

Product features

- The cable is UL/CSA-approved (CMG)
- Halogen-free
- High flame retardancy in accordance with IEC 60332-3 and FT4
- Oil-resistant
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
 - 93.75 kbit/s = 1200 m
 - 187.5 kbit/s = 1000 m
 - 500 kbit/s = 400 m
 - 1.5 Mbit/s = 200 m
 - 12.0 Mbit/s = 100 m

Approvals



Technical data

- Approvals**
UL/CSA (CMG)
- Mutual capacitance**
Approx. 28.5 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Minimum bending radius**
80mm
- Test voltage**
Core/core: 1500 V
Core/screen: 1500 V
- Temperature range**
-30°C to +80°C
- Characteristic impedance**
(3 - 20 MHz): 150 ± 15 Ohm

Design

- Solid, bare, single-wire copper conductor
- PE core insulation
- Inner sheath, screening foil and braiding
- Thermoplastic outer sheath
- Colour: violet (RAL 4001)

Suitable connectors

- EPIC® Data connectors 312

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170853	UNITRONIC® BUS PB FRNC FC	1 x 2 x 0.64	8.0	30.1	75

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- FC Strip stripping tool refer to page 908

UNITRONIC® BUS PB ARM

Fixed installation

LAPP KABEL STUÏTGART UNITRONIC® BUS PB ARM

Benefits

- EMC-optimised

Application range

- For use for PROFIBUS-DP or FIP in harsh industrial environments
- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- Flame-retardant according to IEC 60332.1.2
- UV-resistant

Approvals



Design

- Solid and bare copper conductor
- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Overlapping plastic tape
- Copper tape, welded longitudinally
- Outer sheath: PVC

Technical data

- Mutual capacitance**
(800 Hz): max. 30 nF/km
- Peak operating voltage**
(not for power applications) 100 V
- Minimum bending radius**
Fixed installation: 7.5 x outer diameter
Fixed installation: 3.5 x cable diameter once
- Test voltage**
3600 V DC (3 sec.)
- Temperature range**
-40 °C to +70 °C
- Characteristic impedance**
150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170247	UNITRONIC® BUS PB ARM	1 x 2 x 0.65	11.1	80.9	131

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
 Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
 Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS PB Yv

Suitable for outdoor use and direct burial, UV-resistant



Benefits

- Rugged, UV-resistant and weatherproof
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- Reinforced PVC outer sheath

Approvals



Design

- Solid and bare copper conductor
- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Tin-plated copper wire braiding
- Outer sheath: reinforced PVC, black

Technical data

- Mutual capacitance**
(800 Hz): max. 30 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Minimum bending radius**
Fixed installation: 75 mm once
Fixed installation: 150 mm
- Test voltage**
Core/core: 1500 V
Core/screen: 1500 V
- Temperature range**
Flexible use: -5°C to +50°C
Fixed installation: -40°C to +80°C
- Characteristic impedance**
150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170223	UNITRONIC® BUS PB Yv	1 x 2 x 0.64	9.4	30.1	106

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
 Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
 Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS PB YY

Suitable for outdoor use and direct burial, UV-resistant



Benefits

- Rugged, UV-resistant and weatherproof
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- Dual PVC outer sheath

Approvals



Design

- Solid and bare copper conductor
- PE core insulation
- Overall screening with copper braid and plastic-laminated aluminium foil
- Tin-plated copper wire braiding
- PVC outer sheath, violet, OD 7.5 mm
PVC outer sheath, black, OD 9.5 mm

Technical data

- Mutual capacitance**
(800 Hz): max. 30 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Minimum bending radius**
Fixed installation: 75 mm once
Fixed installation: 150 mm
- Test voltage**
Core/core: 1500 V
Core/screen: 1500 V
- Temperature range**
Flexible use: -5°C to +50°C
Fixed installation: -40°C to +80°C
- Characteristic impedance**
150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170236	UNITRONIC® BUS PB YY	1 x 2 x 0.64	9.5	30.1	87

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
 Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
 Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS PB BURIAL FC

Suitable for outdoor use and direct burial, UV-resistant

LAPP KABEL STUTTGART UNITRONIC® BUS PB BURIAL FC

Benefits

- Fast Connect (FC) cable design
- Rugged, UV-resistant and weatherproof
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- Second PE outer sheath

Approvals



Design

- Solid and bare copper conductor
- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Tin-plated copper wire braiding
- PVC outer sheath, violet, OD 8 mm
- PE outer sheath, black, OD 10.8 mm

Technical data

	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 100 V
	Minimum bending radius Fixed installation: 3.5 x cable diameter once Fixed installation: 7.5 x cable diameter
	Test voltage 3600 V DC (3 sec.)
	Temperature range -40 °C to +60 °C
	Characteristic impedance 150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170323	UNITRONIC® BUS PB BURIAL FC	1 x 2 x 0.64	10.8	26.0	115

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- FC Strip stripping tool refer to page 908

New

UNITRONIC® BUS PB Y 7-W FC BK

Suitable for outdoor use, UV-resistant

LAPP KABEL STUTTGART UNITRONIC® BUS PB Y 7-W SUN RES

Benefits

- UV and weather-resistant in black
- 7-W: 7-wire, e.g. for applications where vibrations occur
- Fast Connect (FC) cable design
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- PVC compound TM2 acc. to VDE 0281-1 or HD 21.1
- Resistant to acids, alkalis and certain oils at room temperature

Approvals



Design

- Stranded conductor, 7-wire, bare
- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Tin-plated copper wire braiding
- PVC outer sheath, black

Suitable tools

- FC Strip stripping tool refer to page 908

Technical data

	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 250 V
	Minimum bending radius Fixed installation: 8 x outer diameter Flexing: 15 x outer diameter
	Test voltage Core/core: 1500 V Core/screen: 1500 V
	Temperature range Flexing: -10°C to +70°C Fixed installation: -40°C to +80°C
	Characteristic impedance 150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170310	UNITRONIC® BUS PB Y 7-W FC BK	1 x 2 x 0.64	7.8	30.1	80

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS PB FD P

Highly flexible application

LAPP KABEL STUÏTGART UNITRONIC® BUS PB FD P



Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- For highly flexible applications (power chains, moving machine parts)
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- Halogen-free
- Flame-retardant according to IEC 60332.1.2
- Oil-resistant

- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m

Approvals



Design

- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Tin-plated copper wire braiding
- Outer sheath: PUR compound

Technical data

- Mutual capacitance**
(800 Hz): max. 30 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Minimum bending radius**
65mm
- Test voltage**
Core/core: 1500 V
- Temperature range**
Flexing: -30°C to +70°C
Fixed installation: -40°C to +80°C
- Characteristic impedance**
150 ± 15 Ohm

Suitable connectors

- EPIC® Data connectors 312

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications (e.g. power chains) - conventional cable assembly					
2170222	UNITRONIC® BUS PB FD P 1x2x0,64	1 x 2 x 0.64	8.0	30.1	64

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
Photographs are not to scale and do not represent detailed images of the respective products.



Info

- **A for Advanced here: UL and CSA approvals**

Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- For highly flexible applications (power chains, moving machine parts)

Application range

- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- Halogen-free
- Flame-retardant according to IEC 60332.1.2
- Oil-resistant

LAPP KABEL STUÏTGART UNITRONIC® BUS PB FD P A



Technical data

- Mutual capacitance**
(800 Hz): max. 30 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Minimum bending radius**
65mm
- Test voltage**
Core/core: 1500 V
- Temperature range**
Flexing: -30°C to +70°C
Fixed installation: -40°C to +80°C
- Characteristic impedance**
150 ± 15 Ohm

- Screening: wrapped with braided tinned-copper wires
- Outer sheath: PUR compound

Suitable connectors

- EPIC® Data connectors 312

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170822	UNITRONIC® BUS PB FD P A	1 x 2 x 0.64	8.0	30.1	58

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS PB FD P FC

Highly flexible application

LAPP KABEL STUTTGART UNITRONIC® BUS PB FD P FC

Benefits

- Fast Connect (FC) cable design
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- For highly flexible applications (power chains, moving machine parts)

Application range

- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- Flame-retardant according to IEC 60332.1.2
- Oil-resistant
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
 93.75 kbit/s = 1200 m
 187.5 kbit/s = 1000 m
 500 kbit/s = 400 m
 1.5 Mbit/s = 200 m
 12.0 Mbit/s = 100 m

Approvals

- 


- Approval: UL/CSA type CMX in accordance with UL 444 and CSA C22.2 no. 214-02







Design

- Stranded bare copper wire
- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Screening: wrapped with braided tinned-copper wires
- Outer sheath: PUR compound

Suitable connectors

- EPIC® Data connectors 312

Technical data

- 
Mutual capacitance
 (800 Hz): max. 30 nF/km
- 
Peak operating voltage
 (not for power applications) 250 V
- 
Minimum bending radius
 Flexing: 15 x outer diameter
- 
Test voltage
 3600 V DC (3 sec.)
- 
Temperature range
 Flexing: -30°C to +70°C
 Fixed installation: -40°C to +80°C
- 
Characteristic impedance
 150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170322	UNITRONIC® BUS PB FD P FC	1 x 2 x 0.64	8.0	26.0	79

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
 Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- FC Strip stripping tool refer to page 908

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

UNITRONIC® BUS PB FD FRNC FC

Highly flexible application

LAPP KABEL STUTTGART UNITRONIC® BUS PB FD FRNC FC

Benefits

- Fast Connect (FC) system
- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- For highly flexible applications (power chains, moving machine parts)
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- For highly flexible use in energy supply chains or permanently moving machines and linear robots
- This cable provides special advantages for use in sensitive areas where fire propagation must be avoided and the presence of toxic fumes would cause personal injury and damage to equipment.

Product features

- The cable is UL/CSA-approved (CMG)
- Halogen-free

- High flame retardancy in accordance with IEC 60332-3 and FT4
- Oil-resistant
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m

Approvals



Design

- Stranded bare copper wire
- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Screening: wrapped with braided tinned-copper wires
- Outer sheath: PUR compound

Technical data

	Mutual capacitance nom. 28 nF/km
	Peak operating voltage (not for power applications) 250 V
	Minimum bending radius Fixed installation: 10 x outer diameter Flexing: 15 x outer diameter
	Test voltage Core/core: 1500 V
	Temperature range Flexing: -30°C to +70°C Fixed installation: -40°C to +80°C
	Characteristic impedance (3 - 20 MHz): 150 ± 15 Ohm

Suitable connectors

- EPIC® Data connectors 312

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170854	UNITRONIC® BUS PB FD FRNC FC	1x2x0,64	8.0	26.0	75

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- FC Strip stripping tool refer to page 908

UNITRONIC® BUS PB FD P COMBI

Highly flexible application

LAPP KABEL STUTTGART UNITRONIC® BUS PB FD P COMBI

Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- For highly flexible applications (power chains, moving machine parts)
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- HYBRID: cable for data transmission + power supply
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Cores for Power Supply
3 x 1.0 mm2 (AWG 18)

Technical data

	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 100 V
	Minimum bending radius Flexing: 145 mm
	Test voltage Core/core: 600 V
	Temperature range Flexible use: -5°C to +50°C Fixed installation: -40°C to +80°C
	Characteristic impedance 150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170227	UNITRONIC® BUS PB FD P COMBI	1 x 2 x 0.64 Ø + 3 x 1.0 mm²	10.1	59.0	125

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS PB FD P HYBRID

Highly flexible application

LAPP KABEL STUÏTGART UNITRONIC® BUS PB FD P HYBRID



Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- For highly flexible applications (power chains, moving machine parts)
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- HYBRID: cable for data transmission + power supply
- Flame-retardant according to IEC 60332.1.2
- Oil-resistant

Approvals



Design

- Cores for Power Supply
4 x 1.5 mm² (AWG16)

Technical data

	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 100 V
	Minimum bending radius Flexing: 15 x outer diameter
	Test voltage Core/core: 600 V Core/screen: 600 V
	Temperature range Flexing: -30°C to +60°C Fixed installation: -40°C to +70°C
	Characteristic impedance 150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170495	UNITRONIC® BUS PB FD P HYBRID	1 x 2 x 0.64 Ø + 4 x 1.5 mm ²	11.3	89.0	148

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS PB FD Y HYBRID

Highly flexible application

LAPP KABEL STUÏTGART UNITRONIC® BUS PB FD Y HYBRID



Benefits

- For highly flexible applications (power chains, moving machine parts)
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- CL3 for installation on trays

Application range

- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- HYBRID: cable for data transmission + power supply

Approvals



- With UL/CSA approval (CMG, CL3, SUN RES, Oil Res I)
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Oil-resistant according to UL OIL RES I

Design

- Outer sheath: special PVC compound
- Cores for Power Supply
4 x 1.5 mm² (AWG16)

Technical data

	Peak operating voltage 600 V (not for power applications)
	Minimum bending radius Fixed installation: 10 x cable diameter Flexing: 15 x outer diameter
	Test voltage Core/core: 2000 V Core/screen: 2000 V
	Temperature range -5°C to +80°C
	Characteristic impedance 150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170875	UNITRONIC® BUS PB FD Y HYBRID	1 x 2 x 0.64 Ø + 4 x 1.5 mm ²	11.3	89.0	155

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS PB TORSION

Highly flexible application

LAPP KABEL STUÏGART UNITRONIC® BUS PB TORSION



Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- TORSION: for torsional stress, e.g. robot application; ± 180° per 1 m
- Halogen-free
- Flame-retardant according to IEC 60332.1.2

- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
 - 93.75 kbit/s = 1200 m
 - 187.5 kbit/s = 1000 m
 - 500 kbit/s = 400 m
 - 1.5 Mbit/s = 200 m
 - 12.0 Mbit/s = 100 m

Approvals



- Approval: UL type CMX in accordance with UL 444

Design

- PE core insulation

Suitable connectors

- EPIC® Data connectors 312

Technical data

- Mutual capacitance**
(800 Hz): max. 30 nF/km
- Peak operating voltage**
(not for power applications)
300 V
- Minimum bending radius**
Fixed installation:
4 x outer diameter
Flexing: 7.5 x outer diameter
- Test voltage**
3600 V DC (3 sec.)
- Temperature range**
Operating temperature: -25°C to 75°C
Storage temp.: -40°C to 80°C
- Characteristic impedance**
150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170332	UNITRONIC® BUS PB TORSION	1 x 2 x 0.8	8.0	31.0	66

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP

Lapp Kabel is a member of the PROFIBUS user organisation (PNO)

Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS PB FESTOON

Highly flexible application

LAPP KABEL STUÏGART UNITRONIC® BUS PB FESTOON



Benefits

- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- CL3 for installation on trays

Application range

- PROFIBUS® (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- FESTOON: for cable trolley (festoon)
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
 - 93.75 kbit/s = 1200 m
 - 187.5 kbit/s = 1000 m
 - 500 kbit/s = 400 m
 - 1.5 Mbit/s = 200 m
 - 12.0 Mbit/s = 100 m

Approvals



- With UL/CSA approval (CMG, CL3, SUN RES, Oil Res I)
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Oil-resistant according to UL OIL RES I

Design

- Outer sheath: special PVC compound

Suitable connectors

- EPIC® Data connectors 312

Technical data

- Mutual capacitance**
(800 Hz): max. 30 nF/km
- Peak operating voltage**
600 V (not for power applications)
- Minimum bending radius**
Flexing: 70 mm
Fixed installation: 30 mm once
- Test voltage**
Core/core: 2000 V
- Temperature range**
Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C
- Characteristic impedance**
150 ± 15 Ohm

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170331	UNITRONIC® BUS PB Festoon	1 x 2 x 0.64	8.0	26.0	64

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP

Lapp Kabel is a member of the PROFIBUS user organisation (PNO)

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Data PROFIBUS Connectors 35° Screw Terminals



Info

- Fully compatible with market standard

EPIC® Data PROFIBUS Connectors 35° Screw Terminals

Benefits

- Standardised interfaces
- Cost-saving due to quick installation
- Easy to connect
- Small design

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Screw termination
- Adjustable termination resistor is integrated
- Switch can also be operated when the connector is plugged and setting is clearly visible
- When used as a through connector (two cable connections, node) the switch must be in the "OFF" position. If used as a terminating connector (one cable connection, segment end), the switch must be in the "ON" position.
- If the switch is in the "ON" position the outgoing bus cable is disconnected

Approvals



- Sub-D pin assignment in accordance with PROFIBUS

Design

- Sub-D plug, 9-pin
- Metallised housing
- Cable outlet 35°
- For cable diameter: 5.0 to 8.0 mm
- (-PG) With additional programming/diagnostic interface: Sub-D socket, 9-pin

Suitable cables

- Cables for BUS-Systems PROFIBUS-DP/FMS/FIP Page 302
- Cables for BUS-System PROFIBUS-PA Page 326

Technical data

Dimensions
54 mm x 40 mm x 17 mm (LxWxH)

Connection type
Screwing

Degree of soiling
2

Weight
Approx. 40 g

Protection rating
IP20

Cable outlet
35° angled

Terminating resistor
Integrated resistor combination that is connected by a sliding switch

Transmission rate
max. 12 MBit/s

Interfaces
PROFIBUS station:
SUB-D socket, 9-pin
PROFIBUS cable:
4 terminal blocks for wires up to 1.0 mm²

Current consumption
max. 12.5 mA

Permissible ambient conditions
Operating temperature:
0°C to +60°C
Transport and storage temperature:
-25°C to +80°C
Relative humidity:
max. 75 % at +25°C

Supply voltage
4.75 to 5.25 V DC
(supplied from terminal)

Article number	Article designation	Cable outlet	PG	Pieces / PU
EPIC® Data PROFIBUS Connectors				
21700507	ED-PB-35	35°	no	1
21700506	ED-PB-35-PG	35°	yes	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

EPIC® Data PROFIBUS Connectors 35° Fast Connect



Info

- Fully compatible with market standard



EPIC® Data PROFIBUS Connectors 35° Fast Connect

Benefits

- Suitable for FC cables
- Standardised interfaces
- Cost-saving due to quick installation
- Easy to connect

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Type FC for solid conductor or 7-wire stranded conductor. Type FC-FLEX for 19-wire or 7-wire stranded conductor.
- Adjustable termination resistor is integrated
- Switch can also be operated when the connector is plugged and setting is clearly visible
- If the switch is in the "ON" position the outgoing bus cable is disconnected
- When used as a through connector (two cable connections, node) the switch must be in the "OFF" position. If used as a terminating connector (one cable connection, segment end), the switch must be in the "ON" position.

Approvals



- Sub-D pin assignment in accordance with PROFIBUS

Design

- Sub-D plug, 9-pin
- Metallised housing
- Cable outlet 35°
- For cable diameter: 5.0 to 8.0 mm
- (-PG) With additional programming/diagnostic interface: Sub-D socket, 9-pin

Suitable cables

- Cables for BUS-Systems PROFIBUS-DP/ FMS/FIP Page 302
- Cables for BUS-System PROFIBUS-PA Page 326

Suitable tools

- FC Strip stripping tool refer to page 908

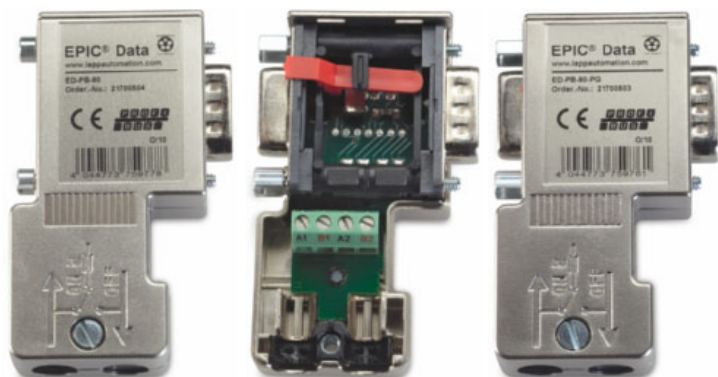
Technical data

	Dimensions 95 mm x 70 mm x 17 mm (LxWxH)
	Connection type Fast Connect
	Degree of soiling 2
	Weight Approx. 50 g
	Protection rating IP20
	Cable outlet 35° angled
	Terminating resistor Integrated resistor combination that is connected by a sliding switch
	Transmission rate max. 12 MBit/s
	Interfaces PROFIBUS station: SUB-D socket, 9-pin PROFIBUS cable: FC standard cable, Ø 0.64 mm
	Current consumption max. 12.5 mA
	Permissible ambient conditions Operating temperature: 0°C to +60°C Transport and storage temperature: -25°C to +80°C Relative humidity: max. 75 % at +25°C
	Supply voltage 4.75 to 5.25 V DC (supplied from terminal)

Article number	Article designation	Cable outlet	Cable types	PG	Pieces / PU
EPIC® Data PROFIBUS Connectors					
21700511	ED-PB-35-FC	35°	Solid	no	1
21700513	ED-PB-35-PG-FC	35°	Solid	yes	1
21700514	ED-PB-35-FC-FLEX	35°	Flexible	no	1
21700515	ED-PB-35-PG-FC-FLEX	35°	Flexible	yes	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

EPIC® Data PROFIBUS Connectors 90° Screw Terminals



EPIC® Data PROFIBUS Connectors 90° Screw Terminals

Info

- Fully compatible with market standard

Benefits

- Standardised interfaces
- Cost-saving due to quick installation
- Easy to connect
- Small design

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Screw termination
- Adjustable termination resistor is integrated
- Switch can also be operated when the connector is plugged and setting is clearly visible
- When used as a through connector (two cable connections, node) the switch must be in the "OFF" position. If used as a terminating connector (one cable connection, segment end), the switch must be in the "ON" position.
- If the switch is in the "ON" position the outgoing bus cable is disconnected

Approvals



- Sub-D pin assignment in accordance with PROFIBUS

Design

- Sub-D plug, 9-pin
- Metallised housing
- Cable outlet 90°
- For cable diameter: 5.0 to 8.0 mm
- (-PG) With additional programming/diagnostic interface: Sub-D socket, 9-pin

Suitable cables

- Cables for BUS-Systems PROFIBUS-DP/FMS/FIP Page 302
- Cables for BUS-System PROFIBUS-PA Page 326

Technical data

Dimensions
64 mm x 40 mm x 17 mm (LxWxH)

Connection type
Screwing

Degree of soiling
2

Weight
Approx. 40 g

Protection rating
IP20

Cable outlet
90°

Terminating resistor
Integrated resistor combination that is connected by a sliding switch

Transmission rate
max. 12 MBit/s

Interfaces
PROFIBUS station:
SUB-D socket, 9-pin
PROFIBUS cable:
4 terminal blocks for wires up to 1.0 mm²

Current consumption
max. 12.5 mA

Permissible ambient conditions
Operating temperature:
0°C to +60°C
Transport and storage temperature:
-25°C to +80°C
Relative humidity:
max. 75 % at +25°C

Supply voltage
4.75 to 5.25 V DC
(supplied from terminal)

Article number	Article designation	Cable outlet	PG	Pieces / PU
EPIC® Data PROFIBUS Connectors				
21700504	ED-PB-90	90°	no	1
21700503	ED-PB-90-PG	90°	yes	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

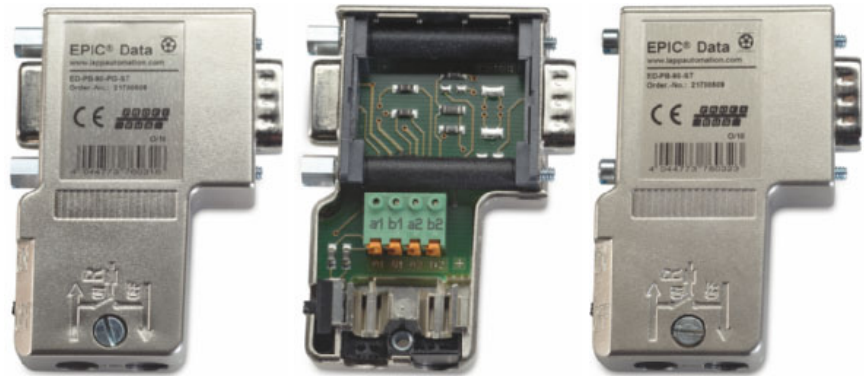
ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

EPIC® Data PROFIBUS Connectors 90° Spring type



Info

- Fully compatible with market standard



EPIC® Data PROFIBUS Connectors 90° Spring type

Benefits

- Standardised interfaces
- Cost-saving due to quick installation
- Easy to connect

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Spring-type terminal
- Adjustable termination resistor is integrated
- Switch can also be operated when the connector is plugged and setting is clearly visible
- When used as a through connector (two cable connections, node) the switch must be in the "OFF" position. If used as a terminating connector (one cable connection, segment end), the switch must be in the "ON" position.
- If the switch is in the "ON" position the outgoing bus cable is disconnected

Approvals



- Sub-D pin assignment in accordance with PROFIBUS

Design

- Sub-D plug, 9-pin
- Metallised housing
- Cable outlet 90°
- For cable diameter: 5.0 to 8.0 mm
- (-PG) With additional programming/diagnostic interface: Sub-D socket, 9-pin

Suitable cables

- Cables for BUS-Systems PROFIBUS-DP/ FMS/FIP Page 302
- Cables for BUS-System PROFIBUS-PA Page 326

Technical data

	Dimensions 65 mm x 48 mm x 16 mm (LxWxH)
	Connection type Spring-type (ST) Contact is automatically created when the stripped conductor is inserted into the spring terminal. The orange lever must be pressed to break the connection.
	Weight Approx. 40 g
	Protection rating IP20
	Cable outlet 90°
	Terminating resistor Integrated resistor combination that is connected by a sliding switch
	Transmission rate max. 12 MBit/s
	Interfaces PROFIBUS station: SUB-D socket, 9-pin PROFIBUS cable: 4 spring-type terminals for wires up to 0.5 mm ² (Solid conductor)
	Current consumption max. 12.5 mA
	Permissible ambient conditions Operating temperature: 0°C to +60°C Transport and storage temperature: -25°C to +80°C Relative humidity: max. 75 % at +25°C
	Supply voltage 4.75 to 5.25 V DC (supplied from terminal)

Article number	Article designation	Cable outlet	Cable types	PG	Pieces / PU
EPIC® Data PROFIBUS Connectors					
21700509	ED-PB-90-ST	90°	Solid	no	1
21700508	ED-PB-90-PG-ST	90°	Solid	yes	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

EPIC® Data PROFIBUS Connectors 90° Fast Connect



Info

- Fully compatible with market standard
- Extended temperature range

EPIC® Data PROFIBUS Connectors 90° Fast Connect

Benefits

- Suitable for FC cables
- Standardised interfaces
- Cost-saving due to quick installation
- Easy to connect

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Type FC for solid conductor or 7-wire stranded conductor.
Type FC-FLEX for 19-wire or 7-wire stranded conductor.
- Adjustable termination resistor is integrated
- Switch can also be operated when the connector is plugged and setting is clearly visible
- When used as a through connector (two cable connections, node) the switch must be in the "OFF" position. If used as a terminating connector (one cable connection, segment end), the switch must be in the "ON" position.
- If the switch is in the "ON" position the outgoing bus cable is disconnected

Approvals



- Sub-D pin assignment in accordance with PROFIBUS

Design

- Sub-D plug, 9-pin
- Metallised housing
- Cable outlet 90°
- For cable diameter: 5.0 to 8.0 mm
- (-PG) With additional programming/diagnostic interface: Sub-D socket, 9-pin

Suitable cables

- Cables for BUS-Systems PROFIBUS-DP/ FMS/FIP Page 302
- Cables for BUS-System PROFIBUS-PA Page 326

Suitable tools

- FC Strip stripping tool refer to page 908

Technical data

Dimensions
72 mm x 40 mm x 17 mm (LxWxH)

Connection type
Fast Connect

Degree of soiling
2

Weight
Approx. 40 g

Protection rating
IP20

Cable outlet
90°

Terminating resistor
Integrated resistor combination that is connected by a sliding switch

Transmission rate
max. 12 MBit/s

Interfaces
PROFIBUS station:
SUB-D socket, 9-pin
PROFIBUS cable:
FC standard cable,
Ø 0.64 mm

Current consumption
max. 12.5 mA

Permissible ambient conditions
Operating temperature:
-25°C to +70°C
Transport and storage temperature:
-25°C to +80°C
Relative humidity:
max. 75 % at +25°C

Supply voltage
4.75 to 5.25 V DC
(supplied from terminal)

Article number	Article designation	Cable outlet	Cable types	PG	Pieces / PU
EPIC® Data PROFIBUS Connectors					
21700502	ED-PB-90-FC	90°	Solid	no	1
21700501	ED-PB-90-PG-FC	90°	Solid	yes	1
21700528	ED-PB-90-FC-FLEX	90°	Flexible	no	1
21700527	ED-PB-90-PG-FC-FLEX	90°	Flexible	yes	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

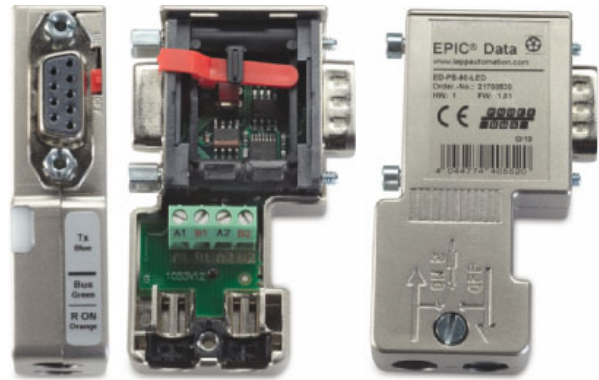
ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

EPIC® Data PROFIBUS Connectors 90° LED Screw Terminals



Info

- Fully compatible with market standard



EPIC® Data PROFIBUS Connectors 90° LED Screw Terminals

Benefits

- 3 status LEDs indicate: bus operation, station transmission, terminating resistance
- Simplified troubleshooting
- Standardised interfaces
- Cost-saving due to quick installation
- Easy to connect

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Screw termination
- Adjustable terminating resistor is integrated
- Switch can also be operated when the connector is plugged and setting is clearly visible
- When used as a through connector (two cable connections, node) the switch must be in the "OFF" position. If used as a terminating connector (one cable connection, segment end), the switch must be in the "ON" position.
- If the switch is in the "ON" position the outgoing bus cable is disconnected

Approvals



- Sub-D pin assignment in accordance with PROFIBUS

Design

- Sub-D plug, 9-pin
- Metallised housing
- Cable outlet 90°
- For cable diameter: 5.0 to 8.0 mm
- (-PG) With additional programming/diagnostic interface: Sub-D socket, 9-pin

Suitable cables

- Cables for BUS-Systems PROFIBUS-DP/ FMS/FIP Page 302
- Cables for BUS-System PROFIBUS-PA Page 326

Technical data

	Dimensions 64 mm x 40 mm x 17 mm (LxWxH)
	Connection type Screwing
	Degree of soiling 2
	Weight Approx. 40 g
	Protection rating IP20
	Cable outlet 90°
	Terminating resistor Integrated resistor combination that is connected by a sliding switch
	Transmission rate max. 12 MBit/s
	Interfaces PROFIBUS station: SUB-D socket, 9-pin PROFIBUS cable: 4 terminal blocks for wires up to 1.0 mm ²
	Current consumption max. 35 mA
	Permissible ambient conditions Operating temperature: 0°C to +60°C Transport and storage temperature: -25°C to +80°C Relative humidity: max. 75 % at +25°C
	Supply voltage 4.75 to 5.25 V DC (supplied from terminal)

Article number	Article designation	Cable outlet	PG	Pieces / PU
EPIC® Data PROFIBUS Connectors				
21700530	ED-PB-90-LED	90°	no	1
21700529	ED-PB-90-PG-LED	90°	yes	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

EPIC® Data PROFIBUS Connectors 90° LED Fast Connect



Info

- Fully compatible with market standard

EPIC® Data PROFIBUS Connectors 90° LED Fast Connect

Benefits

- 3 status LEDs indicate: bus operation, station transmission, terminating resistance
- Simplified troubleshooting
- Visual connection control
- Cost-saving due to quick installation
- Easy to connect

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Type FC for solid conductor or 7-wire stranded conductor. Type FC-FLEX for 19-wire or 7-wire stranded conductor.
- Adjustable termination resistor is integrated
- Switch can also be operated when the connector is plugged and setting is clearly visible
- When used as a through connector (two cable connections, node) the switch must be in the "OFF" position. If used as a terminating connector (one cable connection, segment end), the switch must be in the "ON" position.
- If the switch is in the "ON" position the outgoing bus cable is disconnected

Approvals



- Sub-D pin assignment in accordance with PROFIBUS

Design

- Sub-D plug, 9-pin
- Metallised housing
- Cable outlet 90°
- For cable diameter: 5.0 to 8.0 mm
- (-PG) With additional programming/diagnostic interface: Sub-D socket, 9-pin

Suitable cables

- Cables for BUS-Systems PROFIBUS-DP/ FMS/FIP Page 302
- Cables for BUS-System PROFIBUS-PA Page 326

Suitable tools

- FC Strip stripping tool refer to page 908

Technical data



Dimensions
64 mm x 40 mm x 17 mm (LxWxH)

Connection type
Fast Connect

Degree of soiling
2



Weight
Approx. 40 g



Protection rating
IP20

Cable outlet
90°

Terminating resistor
Integrated resistor combination that is connected by a sliding switch

Transmission rate
max. 12 MBit/s

Interfaces
PROFIBUS station:
SUB-D socket, 9-pin
PROFIBUS cable:
FC standard cable,
Ø 0.64 mm

Current consumption
max. 35 mA

Permissible ambient conditions
Operating temperature:
0°C to +60°C
Transport and storage temperature:
-25°C to +80°C
Relative humidity:
max. 75 % at +25°C

Supply voltage
4.75 to 5.25 V DC
(supplied from terminal)

Article number	Article designation	Cable outlet	Cable types	PG	Pieces / PU
EPIC® Data PROFIBUS Connectors					
21700547	ED-PB-90-LED-FC	90°	Solid	no	1
21700546	ED-PB-90-PG-LED-FC	90°	Solid	yes	1
21700549	ED-PB-90-LED-FC-FLEX	90°	Flexible	no	1
21700539	ED-PB-90-PG-LED-FC-FLEX	90°	Flexible	yes	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

EPIC® Data PROFIBUS Connectors ATEX Screw Terminals



Info

- Fully compatible with market standard



EPIC® Data PROFIBUS Connectors ATEX Screw Terminals

Benefits

- For use in zone 2 areas with an explosion hazard (explosive gas atmosphere occurs only rarely and briefly)
- Standardised interfaces
- Cost-saving due to quick installation
- Easy to connect

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Screw termination
- Adjustable termination resistor is integrated
- Switch can also be operated when the connector is plugged and setting is clearly visible
- When used as a through connector (two cable connections, node) the switch must be in the "OFF" position. If used as a terminating connector (one cable connection, segment end), the switch must be in the "ON" position.
- If the switch is in the "ON" position the outgoing bus cable is disconnected

Approvals



- Sub-D pin assignment in accordance with PROFIBUS
- DIN EN 60079-0:2006, DIN 60079-15:2005 category 3G zone 2

Design

- Sub-D plug, 9-pin
- Metallised housing
- Cable outlet 90°
- For cable diameter: 5.0 to 8.0 mm
- (-PG) With additional programming/diagnostic interface: Sub-D socket, 9-pin

Suitable cables

- Cables for BUS-System PROFIBUS-PA Page 326

Technical data

	Dimensions 64 mm x 40 mm x 17 mm (LxWxH)
	Connection type Screwing
	Degree of soiling 2
	Weight Approx. 40 g
	Protection rating IP20
	Cable outlet 90°
	Terminating resistor Integrated resistor combination that is connected by a sliding switch
	Transmission rate max. 12 MBit/s
	Interfaces PROFIBUS station: SUB-D socket, 9-pin PROFIBUS cable: 4 terminal blocks for wires up to 1.0 mm ²
	Current consumption max. 12.5 mA
	Permissible ambient conditions Operating temperature: 0°C to +60°C Transport and storage temperature: -25°C to +80°C Relative humidity: max. 75 % at +25°C
	Supply voltage 4.75 to 5.25 V DC (supplied from terminal)

Article number	Article designation	Cable outlet	PG	Pieces / PU
EPIC® Data PROFIBUS Connectors				
21700543	ED-PB-90-ATEX	90°	no	1
21700542	ED-PB-90-PG-ATEX	90°	yes	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

EPIC® Data PROFIBUS Connectors REPEATER



EPIC® Data PROFIBUS Connectors REPEATER



Info

- Fully compatible with market standard
- A real alternative to conventional PROFIBUS repeaters

Benefits

- Very flexible in use
- Increases the number of nodes
- Cost-saving due to quick installation
- Easy to connect
- No additional space needed in the cabinet

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Screw termination
- Can be used as a bus extension or spur line
- 5 V power supply from the PROFIBUS connection enables usage on all PROFIBUS devices
- Repeater covers transmission rates from 9.6 KBit/s to 12 MBit/s
- Transmission rate→ max. segment length:

9.6 KBit/s	1000 m
187.5 KBit/s	1000 m
500 KBit/s	400 m
1.5 MBit/s	200 m
3 MBit/s	100 m
12 MBit/s	100 m

Approvals



- Sub-D pin assignment in accordance with PROFIBUS

Design

- Sub-D plug, 9-pin
- Metallised housing
- An external 24 V supply is not necessary
- Status LEDs
- For cable diameter: 5.0 to 8.0 mm

Suitable cables

- Cables for BUS-Systems PROFIBUS-DP/ FMS/FIP Page 302
- Cables for BUS-System PROFIBUS-PA Page 326

Technical data

Dimensions
64 mm x 40 mm x 17 mm (LxWxH)

Connection type
Screwing

Degree of soiling
2

Weight
Approx. 40 g

IP
IP20

Cable outlet
90°

Transmission rate
9.6 Kbit/s to 12 MBit/s
autodetection

Interfaces
Connection: Sub-D socket, 9-pin PROFIBUS-cable: 4 terminal blocks for wires up to 1.0 mm² Protocol: PROFIBUS DP in accordance with EN 50170

Current consumption
typ. 100 mA

Permissible ambient conditions
Operating temperature:
0°C to +60°C
Transport and storage temperature:
-25°C to +75°C

Supply voltage
+5 V DC

Article number	Article designation	Cable outlet	PG	Pieces / PU
EPIC® Data PROFIBUS Connectors				
21700541	ED-PB-90-RP-PG	90°	yes	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
For the detailed manual please refer to www.lappautomation.com
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

EPIC® Data PROFIBUS Connectors 180° Screw Terminals



Info

- Fully compatible with market standard



EPIC® Data PROFIBUS Connectors 180° Screw Terminals

Benefits

- Standardised interfaces
- Cost-saving due to quick installation
- Easy to connect

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Screw termination
- Adjustable terminating resistor is integrated
- Switch can also be operated when the connector is plugged and setting is clearly visible
- When used as a through connector (two cable connections, node) the switch must be in the "OFF" position. If used as a terminating connector (one cable connection, segment end), the switch must be in the "ON" position.
- If the switch is in the "ON" position the outgoing bus cable is disconnected

Approvals



- Sub-D pin assignment in accordance with PROFIBUS

Design

- Sub-D plug, 9-pin
- Metallised housing
- Cable outlet 180° (AX)
- No loose parts
- For cable diameter: 5.0 to 8.0 mm

Suitable cables

- Cables for BUS-Systems PROFIBUS-DP/ FMS/FIP Page 302
- Cables for BUS-System PROFIBUS-PA Page 326

Technical data

Dimensions
68 mm x 39.5 mm x 17 mm (LxWxH)

Connection type
Screwing

Degree of soiling
2

Weight
Approx. 40 g

Protection rating
IP20

Cable outlet
180°

Terminating resistor
Integrated resistor combination that is connected by a sliding switch

Transmission rate
max. 12 MBit/s

Interfaces
PROFIBUS station:
SUB-D socket, 9-pin
PROFIBUS cable:
4 terminal blocks for wires up to 1.0 mm²

Current consumption
max. 12.5 mA

Permissible ambient conditions
Operating temperature:
0°C to +60°C
Transport and storage temperature:
-25°C to +80°C
Relative humidity:
max. 75 % at +25°C

Supply voltage
4.75 to 5.25 V DC
(supplied from terminal)

Article number	Article designation	Cable outlet	PG	Pieces / PU
EPIC® Data PROFIBUS Connectors				
21700505	ED-PB-AX	180°	no	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

EPIC® Data PROFIBUS Connectors 180° Fast Connect



EPIC® Data PROFIBUS Connectors 180° Fast Connect



Info

- Fully compatible with market standard
- Extended temperature range

Benefits

- Suitable for FC cables
- Standardised interfaces
- Cost-saving due to quick installation
- Easy to connect

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Type FC for solid conductor or 7-wire stranded conductor.
Type FC-FLEX for 19-wire or 7-wire stranded conductor.
- Adjustable termination resistor is integrated
- Switch can also be operated when the connector is plugged and setting is clearly visible
- When used as a through connector (two cable connections, node) the switch must be in the "OFF" position. If used as a terminating connector (one cable connection, segment end), the switch must be in the "ON" position.
- If the switch is in the "ON" position the outgoing bus cable is disconnected

Approvals



- Sub-D pin assignment in accordance with PROFIBUS

Design

- Sub-D plug, 9-pin
- Metallised housing
- Cable outlet 180° (AX)
- For cable diameter: 5.0 to 8.0 mm

Suitable cables

- Cables for BUS-Systems PROFIBUS-DP/ FMS/FIP Page 302
- Cables for BUS-System PROFIBUS-PA Page 326

Suitable tools

- FC Strip stripping tool refer to page 908

Technical data



Dimensions
70 mm x 35 mm x 17 mm (LxWxH)

Connection type
Fast Connect



Weight
Approx. 50 g



Protection rating
IP20

Cable outlet
180°

Terminating resistor
Integrated resistor combination that is connected by a sliding switch

Transmission rate
max. 12 MBit/s

Interfaces
PROFIBUS station:
SUB-D socket, 9-pin
PROFIBUS cable:
FC standard cable,
Ø 0.64 mm

Current consumption
max. 12.5 mA

Permissible ambient conditions
Operating temperature:
-25°C to +70°C
Transport and storage temperature:
-25°C to +80°C
Relative humidity:
max. 75 % at +25°C

Supply voltage
4.75 to 5.25 V DC
(supplied from terminal)

Article number	Article designation	Cable outlet	Cable types	PG	Pieces / PU
EPIC® Data PROFIBUS Connectors					
21700544	ED-PB-AX-FC	180° axial	Solid	no	1
21700545	ED-PB-AX-FC-FLEX	180° axial	Flexible	no	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

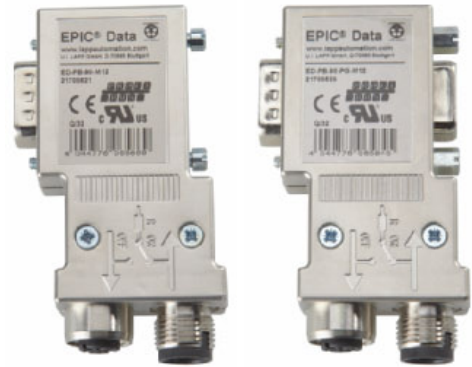
New

EPIC® Data PROFIBUS Connectors 90° M12



Info

- Fully compatible with market standard



EPIC® Data PROFIBUS Connectors 90° M12

Benefits

- Suitable for assembled M12 PB cables
- Standardised interfaces
- Cost-saving due to quick installation
- Easy to connect

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- No loose parts
- Adjustable termination resistor is integrated
- Switch can also be operated when the connector is plugged and setting is clearly visible
- When used as a through connector (two cable connections, node) the switch must be in the "OFF" position. If used as a terminating connector (one cable connection, segment end), the switch must be in the "ON" position.
- If the switch is in the "ON" position the outgoing bus cable is disconnected

Approvals



- Sub-D pin assignment in accordance with PROFIBUS

Design

- Sub-D plug, 9-pin
- 5-pin connector, M12, B-coded
- Metallised housing
- (-PG) With additional programming/diagnostic interface: Sub-D socket, 9-pin

Suitable cables

- PROFIBUS cable: M12 connector on free conductor end Page 391
- PROFIBUS Cable: M12 connector M12 on M12 socket Page 392

Technical data

Dimensions
70 mm x 40 mm x 17 mm (L x W x H)

Connection type
M12

Degree of soiling
2

Weight
approx. 60 g

Protection rating
IP20

Cable outlet
90°

Terminating resistor
Integrated resistor combination that is connected by a sliding switch

Transmission rate
max. 12 MBit/s

Interfaces
PROFIBUS station:
SUB-D socket, 9-pin
PROFIBUS cable:
M12 PB system cabling

Current consumption
max. 12.5 mA

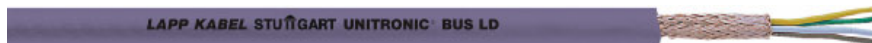
Permissible ambient conditions
Operating temperature:
0°C to +60°C
Transport and storage temperature:
-25°C to +80°C
Relative humidity:
max. 75 % at +25°C

Supply voltage
4.75 to 5.25 V DC
(supplied from terminal)

Article number	Article designation	Cable outlet	Adjustable termination resistance	PG
EPIC® Data PROFIBUS Connectors				
21700521	ED-PB-90-M12	90°	yes	no
EPIC® Data PROFIBUS Connectors				
21700520	ED-PB-90-PG-M12	90°	yes	yes

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

UNITRONIC® BUS LD



Info

- LD is a LAPP abbreviation for long distance

Benefits

- UL variant has approval: UL/CSA type CMX acc. to UL 444 and CSA C22.2 no. 214-02

Application range

- For fixed installation
Maximum electromagnetic screening
- Bus cables for bus systems such as e.g. Modbus, SUCOnet P, Modulink P, VariNet-P)
- Dry or damp rooms

Product features

- The stated bit rates result in the following cable lengths (maximum) of one bus segment:
 - 9.6-93.75 kbit/s = 1200m
 - 187.5 kbit/s = max. 1,000 m
 - 500 kBit/s = max. 400 m
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Stranded bare 7-wire conductor, colour-coded according to DIN 47100
- Copper braiding
- PVC outer sheath
- Colour: violet (RAL 4001)
- UNITRONIC® BUS LD A as UNITRONIC® BUS LD, but with UL/CSA approval

Technical data

- Mutual capacitance**
(800 Hz): max. 60 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Conductor resistance**
(loop): max. 186 ohm/km
- Minimum bending radius**
Fixed installation: 8 x outer diameter
- Test voltage**
Core/core: 1500 V
- Temperature range**
Fixed installation: -40°C to +80°C
Flexing: -5°C to +70°C
- Characteristic impedance**
100 - 120 Ohm

Article number	Article designation	Number of pairs and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
for fixed installation					
2170203	UNITRONIC® BUS LD	1 x 2 x 0,22	5.7	18.0	37
2170204	UNITRONIC® BUS LD	2 x 2 x 0,22	7.1	28.0	45
2170205	UNITRONIC® BUS LD	3 x 2 x 0,22	7.2	37.0	72
For fixed installation - UL/CSA CMX approval					
2170803	UNITRONIC® BUS LD A	1 x 2 x 0,22	5.7	18.0	39

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Modbus is owned by the Modbus-IDA Organisation. SUCOnet P is a registered trademark of the Moeller Group. Modulink P is a registered trademark of Weidmüller GmbH & Co. VariNet is a registered trademark of Pepperl+Fuchs GmbH.
 Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

UNITRONIC® BUS LD FD P



Info

- LD is a LAPP abbreviation for long distance



Benefits

- UL variant has approval: UL/CSA type CMX acc. to UL 444 and CSA C22.2 no. 214-02
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains

Application range

- For highly flexible applications (power chains, moving machine parts)
- Bus cables for bus systems such as e.g. Modbus, SUCOnet P, Modulink P, VariNet-P)

Product features

- The stated bit rates result in the following cable lengths (maximum) of one bus segment:
 - 9.6-93.75 kbit/s = 1200m
 - 187.5 kbit/s = max. 1,000 m
 - 500 kBit/s = max. 400 m
- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Stranded conductor, bare, core identification code in accordance with DIN 47100
- Copper braiding
- PUR outer sheath
- Colour: violet (RAL 4001)
- UV-resistant (but colour may change after some time)

Technical data

- Mutual capacitance**
(800 Hz): max. 60 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Conductor resistance**
(loop): max. 159.8 ohm/km
- Minimum bending radius**
Fixed installation: 6 x core diameter
One bend at end of core: 3 x cable diameter
Flexing: 15 x outer diameter
- Test voltage**
Core/core: 1500 V
- Temperature range**
Fixed installation: -40°C to +80°C
Flexing: -30°C to +70°C
- Characteristic impedance**
100 - 120 Ohm

Article number	Article designation	Number of pairs and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications (power chains, moving machine parts)					
2170213	UNITRONIC® BUS LD FD P	1 x 2 x 0,25	6.0	18.0	39
2170214	UNITRONIC® BUS LD FD P	2 x 2 x 0,25	7.9	33.0	65
2170215	UNITRONIC® BUS LD FD P	3 x 2 x 0,25	8.0	39.0	77
For highly flexible applications (e.g. power chains) - with UL/CSA (CMX) approval					
2170813	UNITRONIC® BUS LD FD P A	1 x 2 x 0,25	6.2	18.0	39
2170814	UNITRONIC® BUS LD FD P A	2 x 2 x 0,25	8.3	33.0	65
2170815	UNITRONIC® BUS LD FD P A	3 x 2 x 0,25	8.4	39.0	77

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Modbus is owned by the Modbus-IDA Organisation. SUCOnet P is a registered trademark of the Moeller Group. Modulink P is a registered trademark of Weidmüller GmbH & Co. VariNet is a registered trademark of Pepperl+Fuchs GmbH.
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® CHAIN refer to page [P142668]
- SMARTSTRIP stripping tool refer to page 907

UNITRONIC® BUS PA



Info

- PA = Process Automation
- Variant with UL/CSA CMG

Benefits

- FC (Fast Connect) version is oil and UV-resistant

Application range

- Process-automation application for connecting sensors and actuators - including areas with risks of explosion.
- Fixed installation

Product features

- Bit rate = 31.25 kbit/s. Transmission technology RS485 also possible but bit rate is limited to 1.5 Mbit/s
- Maximum cable length is dependent on several factors (e.g. supply voltage, current demand).
- Technical Data: refer to the overview on "UNITRONIC® Bus Cables"
- Flame-retardant according to IEC 60332.1.2

Approvals



- PROFIBUS® PA is standardised in EN 50170 as PROFIBUS® DP and PROFIBUS® FMS
- Transmission technology for PROFIBUS-PA in accordance with international standard IEC 61158-2
- FC variant with UL/CSA approval (CMG / PLTC)

Design

- UNITRONIC® BUS PA (BU/BK) Stranded conductor, core colours: red and green, copper braiding, PVC sheath, colour: blue (intrinsically safe area), colour: black (non-intrinsically safe area)
- UNITRONIC® BUS PA FC (BU/BK) Solid core, UL/CSA CMG approval and "Fast Connect" cable design, which enables rapid connection of the IDC connector (Insulation Displacement Connection).

Technical data

- Peak operating voltage**
(not for power applications) 250 V
- Conductor resistance**
(loop): max. 44 ohm/km
- Minimum bending radius**
Fixed installation: 10 x outer diameter
- Test voltage**
Core/core: 1500 V
- Temperature range**
Fixed installation:
-30°C to +80°C
During installation: -5°C to +50°C
- Characteristic impedance**
100 ± 20 Ohm

Article number	Article designation	Number of pairs and cable diameter per conductor in mm	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For fixed installation - conventional cable assembly					
2170234	UNITRONIC® BUS PA (BU)	1 x 2 x 1,3	8.0	45.0	84
2170235	UNITRONIC® BUS PA (BK)	1 x 2 x 1,3	8.0	45.0	84
For fixed installation - "Fast Connect" cable assembly - UL/CSA CMG approval					
2170334	UNITRONIC® BUS PA FC (BU)	1 x 2 x 1.00	8.0	45.5	103
2170335	UNITRONIC® BUS PA FC (BK)	1 x 2 x 1.00	8.0	45.5	103

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 SIMATIC® is a registered trademark of Siemens AG
 Armoured
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Multipurpose shears A and B refer to page 902
- STAR STRIP stripping tool refer to page 906
- FC Strip stripping tool refer to page 908

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

UNITRONIC® DeviceNet THICK + THIN



Application range

- Fixed installation
- DeviceNet™ connects industrial devices e.g. limit switches, photoelectric switches, valve islands, motor starters, drives, PLCs, etc.

Product features

- Oil-resistant
- Based on proven CAN (Controller Area Network) technology.
- Permissible cable lengths vary with the data rate and the cable thickness
- Refer to data sheet for more details

Approvals



- CMG UL/CSA approval 75°C or PLTC, Sun Res
- FRNC variant with Germanischer Lloyd approval

Design

- A) Halogen-free (2170340 + 2170341)
- B) Polyvinylchloride (PVC) (2170342 + 2170343, 2170362 + 2170363)

Technical data

- Core identification code**
Data pair: light blue + white
Power supply: red + black
- Mutual capacitance**
(800 Hz): max. 39.8 nF/km
- Peak operating voltage**
300 V (not for power applications)
- Conductor resistance**
Thick (loop): max. 45 ohm/km
Thin (loop): max. 180 ohm/km
- Minimum bending radius**
Fixed installation: 15 x cable diameter
- Test voltage**
Core/core: 2000 V
- Temperature range**
Fixed installation: -25°C to +80°C
- Characteristic impedance**
120 ohm

Article number	Article designation	Number of pairs and AWG size	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/m)
Halogen-free					
2170340	UNITRONIC® BUS DN THICK FRNC	1x2xAWG18 + 1x2xAWG15	12.2	88.4	195
2170341	UNITRONIC® BUS DN THIN FRNC	1x2xAWG24 + 1x2xAWG22	6.9	33.4	69.5
With PVC outer sheath					
2170342	UNITRONIC® BUS DN THICK Y	1x2xAWG18 + 1x2xAWG15	12.2	88.4	192
2170343	UNITRONIC® BUS DN THIN Y	1x2xAWG24 + 1x2xAWG22	6.9	33.4	66.9

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 FRNC means Flame-Retardant, Non-Corrosive; and DeviceNet is a registered trademark of ODVA.
 Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
 ECO is the cost-efficient version of article no. 2170342 and 2170343, with a slight modification to the outer sheath and UL/CSA-approved (CMG).
 Photographs are not to scale and do not represent detailed images of the respective products.

Cables for bus system DeviceNet

Characteristic impedance: 120 ohm

UNITRONIC® DeviceNet FD THICK+THIN

Highly flexible and UL/CSA-approved

LAPP KABEL STUÏGART UNITRONIC® BUS DN THICK FD P

LAPP KABEL STUÏGART UNITRONIC® BUS DN THIN FD P

■ **Application range**

- For highly flexible applications
- DeviceNet™ connects industrial devices e.g. limit switches, photoelectric switches, valve islands, motor starters, drives, PLCs, etc.

■ **Product features**

- Based on proven CAN (Controller Area Network) technology.
- Permissible cable lengths vary with the data rate and the cable thickness
- Refer to data sheet for more details

■ **Approvals**



- PUR: UL/CSA-approved (CMX) (2170344 + 2170345)
- PVC: UL/CSA CMG 75°C or PLTC FT4 Sun Res Oil Res

■ **Design**

- Polyurethane (PUR) (2170344 + 2170345)
- Polyvinylchloride (PVC) (2170346 + 2170347)

■ **Technical data**

- Core identification code**
Data pair: light blue + white
Power supply: red + black
- Mutual capacitance**
(800 Hz): max. 39.8 nF/km
- Peak operating voltage**
300 V (not for power applications)
- Conductor resistance**
Thick (loop): max. 45 ohm/km
Thin (loop): max. 180 ohm/km
- Minimum bending radius**
Fixed installation: 7.5 x cable diameter
Flexing: 15 x outer diameter
- Test voltage**
Core/core: 2000 V
- Temperature range**
PUR: -40°C to +80°C
PVC: -10°C to +80°C
- Characteristic impedance**
120 ohm

Article number	Article designation	Number of pairs and AWG size	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/m)
Version P (PUR)					
2170344	UNITRONIC® BUS DN THICK FD P	1x2xAWG18 + 1x2xAWG15	12.2	94.0	184
2170345	UNITRONIC® BUS DN THIN FD P	1x2xAWG24 + 1x2xAWG22	6.9	33.4	67.7
Version Y (PVC)					
2170346	UNITRONIC® BUS DN THICK FD Y	1x2xAWG18 + 1x2xAWG15	12.2	94.0	195
2170347	UNITRONIC® BUS DN THIN FD Y	1x2xAWG24 + 1x 2xAWG22	6.9	33.4	69.8

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
DeviceNet is a registered trademark of ODVA
Photographs are not to scale and do not represent detailed images of the respective products.

■ **Accessories**

- SILVYN® CHAIN refer to page [P142668]
- SMARTSTRIP stripping tool refer to page 907

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

UNITRONIC® BUS CAN

LAPP KABEL STUTTGART UNITRONIC® BUS CAN

UNITRONIC® BUS CAN FD P

LAPP KABEL STUTTGART UNITRONIC® BUS CAN FD P



Info

- CAN = Controller Area Network

Application range

UNITRONIC® BUS CAN

- Fixed installation

UNITRONIC® BUS CAN FD P

- For highly flexible applications

Product features

UNITRONIC® BUS CAN

- Maximum bit rate: 1 Mbit/s for 40 m segment length
- Larger conductor cross-section is necessary with increasing length. Refer to the table below (reference values from ISO 11898).
- ISO 11898 makes recommendations for the segment length, cable cross section and bit rate
- Flame-retardant according to IEC 60332.1.2

UNITRONIC® BUS CAN FD P

- Halogen-free
- Maximum bit rate: 1 Mbit/s for 40 m segment length
- Larger conductor cross-section is necessary with increasing length. Refer to the table below (reference values from ISO 11898).
- ISO 11898 makes recommendations for the segment length, cable cross section and bit rate
- Flame-retardant according to IEC 60332.1.2

Approvals



- Standardised internationally in ISO 11898
- UL/CSA type CMX (UL 444)

Design

UNITRONIC® BUS CAN

- 0.22 + 0.34 + 0.5: bare stranded conductor, 7-wire
- 0.75: bare stranded conductor, fine-wire
- Colour-coded in accordance with DIN 47100
- Copper braiding
- PVC outer sheath
- Colour: violet (RAL 4001)

UNITRONIC® BUS CAN FD P

- Stranded bare conductor
- Screening: wrapped with braided copper wires
- PUR outer sheath
- Colour: violet (RAL 4001)
- UV-resistant (but colour may change after some time)

Technical data

Mutual capacitance
UNITRONIC® BUS CAN
 (800 Hz): max. 40 nF/km
UNITRONIC® BUS CAN FD P
 (800 Hz): max. 60 nF/km

Peak operating voltage
UNITRONIC® BUS CAN
 (not for power applications) 250 V
UNITRONIC® BUS CAN FD P
 250 V (not for power transmission)

Conductor resistance
UNITRONIC® BUS CAN
 (loop):
 max. 186 ohm/km
UNITRONIC® BUS CAN FD P
 (loop): max. 159.8 ohm/km

Minimum bending radius
UNITRONIC® BUS CAN
 Fixed installation: 8 x outer diameter
UNITRONIC® BUS CAN FD P
 Flexing: 15 x outer diameter

Test voltage
 Core/core: 1500 V

Temperature range
UNITRONIC® BUS CAN
 Fixed installation:
 -30°C to +80°C
 Flexing: -5°C to +70°C
UNITRONIC® BUS CAN FD P
 Fixed installation: -40°C to +80°C
 Flexing: -30°C to +70°C

Characteristic impedance
 120 ohm

Article number	Article designation	Number of pairs/conductor cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For fixed installation					
2170260	UNITRONIC® BUS CAN	1 x 2 x 0,22	5.7	16.7	42.0
2170261	UNITRONIC® BUS CAN	2 x 2 x 0,22	7.6	34.8	68.0
2170263	UNITRONIC® BUS CAN	1 x 2 x 0,34	6.8	25.0	55.0
2170264	UNITRONIC® BUS CAN	2 x 2 x 0,34	8.5	46.4	88.0
2170266	UNITRONIC® BUS CAN	1 x 2 x 0,5	7.5	41.6	90.0
2170267	UNITRONIC® BUS CAN	2 x 2 x 0,5	9.7	59.4	106.0
2170269	UNITRONIC® BUS CAN	1 x 2 x 0,75	8.7	52.7	108.0
2170270	UNITRONIC® BUS CAN	2 x 2 x 0,75	11.5	80.6	142.0
For highly flexible applications (power chains, moving machine parts)					
2170272	UNITRONIC® BUS CAN FD P	1 x 2 x 0,25	6.4	24.0	40.0
2170273	UNITRONIC® BUS CAN FD P	2 x 2 x 0,25	8.4	33.0	65.0
2170275	UNITRONIC® BUS CAN FD P	1 x 2 x 0,34	6.8	32.8	60.0
2170276	UNITRONIC® BUS CAN FD P	2 x 2 x 0,34	9.6	52.4	88.0
2170278	UNITRONIC® BUS CAN FD P	1 x 2 x 0,5	8.0	41.9	74.0
2170279	UNITRONIC® BUS CAN FD P	2 x 2 x 0,5	10.8	59.4	100.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

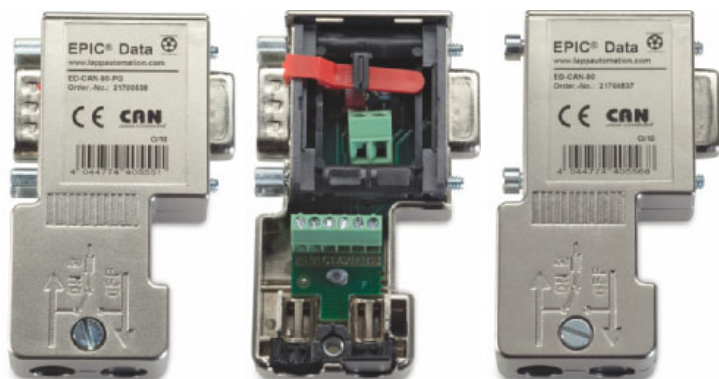
UNITRONIC® BUS CAN

- Multipurpose shears A and B refer to page 902
- SMARTSTRIP stripping tool refer to page 907

UNITRONIC® BUS CAN FD P

- SILVYN® CHAIN refer to page [P142668]
- Multipurpose shears A and B refer to page 902
- SMARTSTRIP stripping tool refer to page 907

EPIC® Data CAN-Bus Connectors 90°



EPIC® Data CAN-Bus Connectors 90°



Info

- Fully compatible with market standard
- CAN, CANopen, DeviceNet™

Benefits

- With additional 24 V DC output to supply external devices (GND = pin 6, CAN V+ = pin 9)
- Cost-saving due to quick installation
- Easy to connect
- Standardised interfaces
- Small design

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Screw termination
- Adjustable termination resistor is integrated
- The integrated, connectable terminal resistors enable the CAN-Bus to be terminated or connected through
- When used as a through connector, the switch must be in the "OFF" position. If used as a terminating connector, the switch must be in the "ON" position.
- No loose parts

Approvals



Design

- Sub-D plug, 9-pin
- Metallised housing
- For cable diameter: 5.0 to 8.0 mm
- (-PG) With additional programming/diagnostic interface: Sub-D socket, 9-pin

Suitable cables

- Cables for Bus-System CAN Page 329
- Cables for Bus-System DeviceNet Page 327

Technical data



Dimensions
65 mm x 48 mm x 16 mm (LxWxH)

Connection type
Screwing

Degree of soiling
2



Weight
Approx. 40 g



Protection rating
IP20

Cable outlet
90°

Terminating resistor
120 ohms integrated, and connectable with slide switch

Transmission rate
max. 1 MBit/s

Interfaces

CAN bus station: SUB-D socket, 9-pin
CAN bus cable: 6 terminal blocks for wires up to 1.0 mm²
Sub-D pin assignment:
CAN Low = Pin 2
CAN High = Pin 7
CAN Gnd = Pin 3
GND = Pin 6
CAN V+ = Pin 9

Permissible ambient conditions

Operating temperature:
0°C to +60°C
Transport and storage temperature:
-25°C to +75°C
Relative humidity:
max. 75 % at +25°C

Article number	Article designation	Cable outlet	PG	Pieces / PU
EPIC® data CAN bus connectors				
21700537	ED-CAN-90	90°	no	1
21700536	ED-CAN-90-PG	90°	yes	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

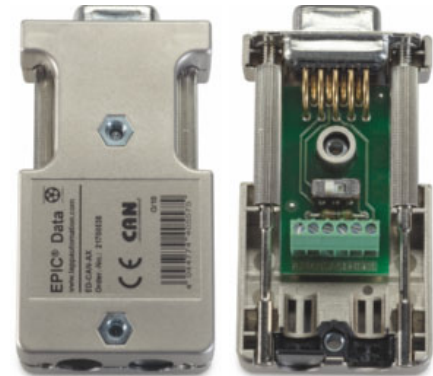
ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

EPIC® Data CAN-Bus Connectors 180°



Info

- Fully compatible with market standard
- CAN, CANopen, DeviceNet™



EPIC® Data CAN-Bus Connectors 180°

Benefits

- Standardised interfaces
- Cost-saving due to quick installation
- Easy to connect

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Screw termination
- Adjustable termination resistor is integrated
- The integrated, connectable terminal resistors enable the CAN-Bus to be terminated or connected through
- When used as a through connector, the switch must be in the "OFF" position. If used as a terminating connector, the switch must be in the "ON" position.
- No loose parts

Approvals



Design

- Sub-D plug, 9-pin
- Metallised housing
- No loose parts
- For cable diameter: 5.0 to 8.0 mm

Suitable cables

- Cables for Bus-System CAN Page 329
- Cables for Bus-System DeviceNet Page 327

Technical data

Dimensions
67.5 mm x 35 mm x 17 mm (LxWxH)

Connection type
Screwing

Degree of soiling
2

Weight
Approx. 40 g

Protection rating
IP20

Cable outlet
180°

Terminating resistor
120 ohms integrated, and connectable with slide switch

Transmission rate
max. 1 MBit/s

Interfaces

CAN bus station: SUB-D socket, 9-pin
CAN bus cable: 6 terminal blocks for wires up to 1.0 mm²
Sub-D pin assignment:
CAN Low = Pin 2
CAN High = Pin 7
CAN Gnd = Pin 3

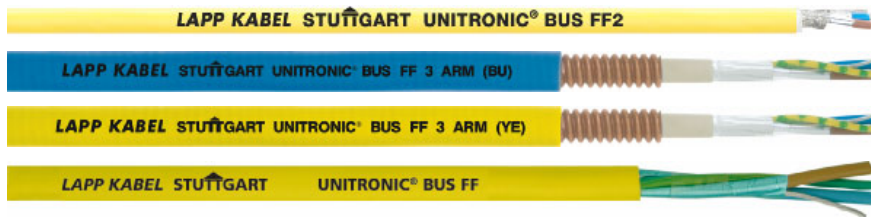
Permissible ambient conditions

Operating temperature:
0°C to +60°C
Transport and storage temperature:
-25°C to +75°C
Relative humidity:
max. 75 % at +25°C

Article number	Article designation	Cable outlet	PG	Pieces / PU
EPIC® data CAN BUS connectors				
21700538	ED-CAN-AX	180° axial	no	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

UNITRONIC® BUS FF



Benefits

- Cables meet the requirements of ISA/SP50 and the FOUNDATION™ field bus for the cable type A.

Application range

- FOUNDATION™ Fieldbus is used in intrinsically safe areas, especially in the field of Process Automation
- Fixed installation

Product features

- All cables are designed for 105 °C and resistant to sunlight

Approvals



- With UL/CSA approval (CMG/PLTC)

Design

- Lapp bus cables for FOUNDATION™ field bus are available in 4 versions:
- 3-core, unarmoured, with device ground
- 3-core, armoured (longitudinally welded, spiral corrugated copper sheath) with device ground
Yellow and blue version
- 2-core, not armoured, with device ground

Technical data

	Approvals UL/CSA approval CMG
	Peak operating voltage 300 V
	Conductor resistance ≤ 24 Ohm/km
	Minimum bending radius 15 x outer diameter
	Test voltage 1500 V
	Temperature range -40 °C or -25 °C to +105 °C, see data sheet
	Characteristic impedance 100 ± 20 Ohm at 31.25 kHz

Article number	Article designation	Number of pairs and cable diameter	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170350	UNITRONIC® BUS FF 3	1x2x1.1 + 1x1.1 Ø	7.9	62.0	93
2170351	UNITRONIC® BUS FF 3 ARM (YE)	1x2x1.1 + 1x1.1 Ø	12.3	125.0	182
2170353	UNITRONIC® BUS FF 3 ARM (BU)	1x2x1.1 + 1x1.1 Ø	12.3	125.0	182
2170352	UNITRONIC® BUS FF 2	1 x 2 x 1.1	7.9	53.3	82

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Foundation™ is a trademark of the Fieldbus Foundation
 Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

UNITRONIC® BUS CC



Info

- Lapp Kabel is a regular member of the user organisation CC-Link Partner Association (CLPA), Japan.

Benefits

- The CC-Link® system was developed by Mitsubishi Electric Automation, Japan.
- This CC-Link® bus cable has successfully passed the CC-Link® Conformance Test in Japan.

Application range

- CC-Link® (Control & Communication Link) = field bus network, for both control as well as information data to provide efficient, integrated factory and process automation.
- Fixed installation of the CC-Link® network

LAPP KABEL STUÏGART UNITRONIC® BUS CC



Product features

- Transmission rate in relation to the distance
- 156 kbit/s 1.200 m
- 625 kbit/s 600 m
- 2,5 Mbit/s 200 m
- 5,0 Mbit/s 110-150 m
- 10 Mbit/s 50-100 m

Approvals



- The LAPP CC-Link® cable is UL/CSA-approved (CM or PLTC)

Technical data

	Approvals CM UL/CSA approval 75°C or PLTC Sun Res
	Peak operating voltage 300 V rms
	Conductor resistance 11 ohm/1,000 ft. (305 m) at 20°C
	Minimum bending radius 15 x outer diameter
	Test voltage 2000 V
	Temperature range -40°C to +70°C
	Characteristic impedance 110 ohm at 1 MHz

Article number	Article designation	Number of cores and AWG size	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170360	UNITRONIC® BUS CC	3 x 1 x AWG20	7.7	38.8	76.6

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths CC-Link® is a registered trademark of CC-Link Partner Association, Japan (CLPA) Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS CC FD P FRNC



Info

- Lapp Kabel is a regular member of the user organisation CC-Link Partner Association (CLPA), Japan.

Benefits

- The CC-Link® system was developed by Mitsubishi Electric Automation, Japan.

Application range

- CC-Link® (Control & Communication Link) = field bus network, for both control as well as information data to provide efficient, integrated factory and process automation.
- For highly flexible applications (power chains, moving machine parts)

LAPP KABEL STUÏGART UNITRONIC® BUS CC FD P



Product features

- Transmission rate in relation to the distance
- 156 kbit/s 1.200 m
- 625 kbit/s 600 m
- 2,5 Mbit/s 200 m
- 5,0 Mbit/s 110-150 m
- 10 Mbit/s 50-100 m

Approvals



- AWM 20233 80°C 300V

Technical data

	Approvals UL AWM Style 20233
	Peak operating voltage 300 V rms
	Conductor resistance 11 ohm/1,000 ft. (305 m) at 20°C
	Minimum bending radius Fixed installation: 4 x outer diameter Flexing: 8 x outer diameter
	Test voltage 2000 V
	Temperature range -40°C to +80°C
	Characteristic impedance 110 ohm at 1 MHz

Article number	Article designation	Number of cores and AWG size	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170370	UNITRONIC® BUS CC FD P FRNC	3 x 1 x AWG20	8.5	39.9	84

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths CC-Link® is a registered trademark of CC-Link Partner Association, Japan (CLPA) Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS SAFETY



Benefits

- For serial transmission of safety-oriented data

Application range

- For fixed installation and highly flexible applications
- For systems such as SafetyBUS p®, based on the well-known CAN bus system

Product features

- The stated bit rates result in the following cable lengths (maximum) for a bus segment:
 - 500 kbit/s = max. 100 m
 - 250 kbit/s = max. 250 m
 - 125 kbit/s = max. 500 m
 - 50 kbit/s = max. 1,000 m

Approvals



Design

- Stranded conductor, 3 cores twisted, colour-coded in accordance with DIN 47100 (white, brown, green), copper braiding, halogen-free outer sheath
- UNITRONIC® BUS SAFETY FD P is as per UNITRONIC® BUS SAFETY, but also suitable for highly flexible applications
- Flame-retardant according to IEC 60332.1.2

Technical data



Approvals

Version UNITRONIC® BUS SAFETY FC: AWM Style 2464 (80°C 300 V)



Mutual capacitance

(800 Hz): max. 45 nF/km



Peak operating voltage

(not for power applications) 250 V
(not for power applications) 300 V (UL AWM version)



Conductor resistance

(loop): max. 52 ohm/km



Minimum bending radius

Fixed installation:
10 x cable diameter



Test voltage

Core/core: 3000 V
Core/core: 2000 V (UL AWM version)



Temperature range

Fixed installation: -30°C to +80°C
Fixed UL (AWM) version:
40°C to +80°C



Characteristic impedance

120 ohm

Article number	Article designation	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
for fixed installation					
2170295	UNITRONIC® BUS SAFETY	3 x 0.75	7.6	49.0	68
For highly flexible applications (e.g. power chains)					
2170885	UNITRONIC® BUS SAFETY FD P	3 x 0.75	7.8	49.0	68

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

SafetyBUS p® is a registered trademark of Pilz GmbH & Co.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- FC Strip stripping tool refer to page 908

Info

- IBS - INTERBUS

Benefits

- Certified by INTERBUS CLUB

Application range

- Fixed installation

Product features

- IBS cable - for fixed installation
- Remote bus cable + installation remote bus cable
- The stated bit rates result in the following cable lengths (maximum) of one bus segment: 500 kbit/s = max. 400 m
- Flame-retardant according to IEC 60332.1.2



Approvals



- In accordance with DIN 19258 and EN 50254

Design

- UNITRONIC® BUS IBS
- Stranded conductor, bare, core identification code in accordance with DIN 47100, braided copper, PVC outer sheath, violet (RAL 4001)
- UNITRONIC® BUS IBS P COMBI
- Stranded conductor, bare, core identification code in accordance with DIN 47100 (data), stranded, bare (power supply), copper braid, PUR outer sheath, violet (RAL 4001), halogen-free
- UNITRONIC® BUS IBS A is as per UNITRONIC BUS IBS, but with UL/CSA approval

Technical data

	Mutual capacitance (800 Hz): max. 60 nF/km
	Peak operating voltage (not for power applications) 250 V
	Conductor resistance (loop): max. 186 ohm/km
	Minimum bending radius Fixed installation: 8 x outer diameter
	Test voltage Core/core: 1500 V
	Temperature range Fixed installation: -30°C to +80°C Flexing: -5°C to +70°C
	Characteristic impedance 100 Ohm

Article number	Cable type	Article designation	Number of pairs and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For fixed installation						
2170206	Remote bus cable (RBC)	UNITRONIC® BUS IBS	3 x 2 x 0.22	7.2	37.0	72
2170208	Installation remote bus cable (INBC)	UNITRONIC® BUS IBS P COMBI	3 x 2 x 0,22 + 3 x 1,0	7.9	60.0	85
For fixed installation - UL/CSA CMX approval						
2170209	Remote bus cable (RBC)	UNITRONIC® BUS IBS A	3 x 2 x 0.22	7.2	37.0	72

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 INTERBUS is a registered trademark of Phoenix Contact GmbH & Co.
 Photographs are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS IBS Yv



Benefits

- Certified by INTERBUS CLUB

Application range

- Suitable for outdoor use and direct burial

Product features

- IBS cable - for outdoor use or direct burial, UV-resistant (remote bus cable + installation remote bus cable)
- The stated bit rates result in the following cable lengths (maximum) of one bus segment: 500 kBit/s = max. 400 m
- Flame-retardant according to IEC 60332.1.2

Approvals



- In accordance with DIN 19258 and EN 50254

Design

- Data: stranded bare conductor, core colours: white-brown/green-yellow/grey-pink
- Power supply: stranded bare conductor, colours: red, blue, green/yellow
- Overall copper wire braiding
- Reinforced PVC outer sheath
- Colour: black (RAL 9005)

Technical data

	Mutual capacitance (800 Hz): max. 60 nF/km
	Peak operating voltage (not for power applications) 250 V
	Conductor resistance (loop): max. 186 ohm/km
	Minimum bending radius Fixed installation: 8 x outer diameter
	Test voltage Core/core: 1500 V
	Temperature range Fixed installation: -40°C to +70°C
	Characteristic impedance 100 Ohm

Article number	Cable type	Article designation	Number of pairs and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Suitable for outdoor use and direct burial, UV-resistant						
2170207	Remote bus cable (RBC)	UNITRONIC® BUS IBS Yv	3 x 2 x 0.22	9.3	37.0	94
2170217	Installation remote bus cable (INBC)	UNITRONIC® BUS IBS Yv COMBI	3 x 2 x 0,22 + 3 x 1,0	9.4	60.0	128

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 INTERBUS is a registered trademark of Phoenix Contact GmbH & Co.
 Photographs are not to scale and do not represent detailed images of the respective products.

Cables for bus system INTERBUS (IBS)

Characteristic impedance: 100 ohm

UNITRONIC® BUS IBS FD P



Info

- IBS - INTERBUS

Benefits

- Certified by INTERBUS CLUB

Application range

- For highly flexible use in energy supply chains or permanently moving machines and linear robots
- Dry or damp rooms
- Harsh industrial environment

Product features

- IBS cable - for highly flexible application
- Remote bus cable + installation remote bus cable
- 500 kbit/s = max. 400 m (remote bus cable)
- Max. 50 m (installation remote bus cable)
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains

Approvals



- In accordance with DIN 19258 and EN 50254

Design

- **UNITRONIC® BUS IBS FD P**
- Stranded conductor, bare, core identification code in accordance with DIN 47100, braided copper wire for overall screening, PUR outer sheath, violet (RAL 4001), halogen-free, flame-retardant in accordance with IEC 60332-1-2.
- **UNITRONIC® BUS IBS FD P COMBI**
- Bare stranded copper wire conductor, cores twisted to pairs, core colours: white/brown / green/yellow / grey/pink (data). Bare copper wire stranded conductor, core colours: red, blue, green/yellow (power supply).
- Overall screening of braided copper, PUR outer sheath (violet, RAL 4001), halogen-free, flame-retardant according to IEC 60332-1-2.

Technical data

- Mutual capacitance**
(800 Hz): max. 60 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Conductor resistance**
(loop): max. 159.8 ohm/km
- Minimum bending radius**
Flexing: 15 x outer diameter
- Test voltage**
Core/core: 1500 V
- Temperature range**
Fixed installation: -40°C to +80°C
Flexing: -30°C to +70°C
- Characteristic impedance**
100 Ohm

Article number	Cable type	Article designation	Number of pairs and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications (power chains, moving machine parts)						
2170216	Remote bus cable (RBC)	UNITRONIC® BUS IBS FD P	3 x 2 x 0,25	7,9	39,0	64
2170218	Installation remote bus cable (INBC)	UNITRONIC® BUS IBS FD P COMBI	3 x 2 x 0,25 + 3 x 1,0	7,9	62,0	92
For highly flexible applications (e.g. power chains) - with UL/CSA (CMX) approval						
2170818	Installation remote bus cable (INBC)	UNITRONIC® BUS IBS FD P COMBI A	3 x 2 x 0,25 + 3 x 1,0	7,9	62,0	92

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 INTERBUS is a registered trademark of Phoenix Contact GmbH & Co.
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® CHAIN refer to page [P142668]
- Multipurpose shears A and B refer to page 902
- SMARTSTRIP stripping tool refer to page 907

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

UNITRONIC® BUS EIB / KNX



Info

- EIB / European Installation Bus
- KNX/communication in building management



Application range

- The product is designed for use in building management, e.g. for decentralised control of lighting, heating, air-conditioning, ventilation, energy management, blinds, time management, locking systems etc.
- The cable can be laid on or under plaster; in pipes, cable ducts; in dry, damp or wet environments.
- EIB installation mainly consists of sensors/ command-transmitters (e.g. light barriers, switches, thermostats, infrared, wind meters, timers), and actuators (e.g. engines, heaters, ventilators, lights, blinds).
- KNX technology was formed from the merging of three established European bus standards: EIP, EHS (household appliances and consumer electronics) and Batibus (heating/ventilation/air conditioning)

Product features

- Serial data transmission
- EIB cable has been tested at 4 kV (1 min.) in a water bath

Approvals



Design

- Screened installation cable based on type J-Y(ST)Y according to DIN VDE 0815, solid bare copper conductor, ø 0.8 mm, measurements 2 x 2 x 0.8 ø. 4 solid cores twisted to a star quad; colours of cores: 1st pair red + black, 2nd pair white + yellow.
- Screening: wrapped with aluminium-laminated plastic foil
- PVC-based outer sheath
- Colour: green
- COMBI version with additional power supply cables 3 x 1.5 mm²; core colours: blue, black, green-yellow

Technical data

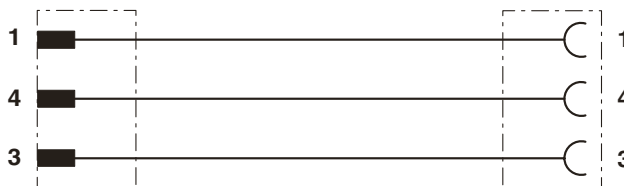
- Mutual capacitance**
(800 Hz): max. 100 nF/km
- Peak operating voltage**
(not for power applications) 250 V
- Conductor resistance**
(loop): max. 73.2 ohm/km
- Minimum bending radius**
Fixed installation:
10 x cable diameter
- Test voltage**
Core/core: 4000 V
- Temperature range**
Fixed installation: -30°C to +70°C

Article number	Article designation	Number of pairs and mm or mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/m)
PVC versions					
2170240	UNITRONIC® BUS EIB	2 x 2 x 0.8	6.6	21.0	54
2170242	UNITRONIC® BUS EIB COMBI	2 x 2 x 0,8 mm + 3 x 1,5 mm ²	12.7	64.0	128
Halogen-free versions					
2170241	UNITRONIC® BUS EIB H	2 x 2 x 0.8	6.6	21.0	54

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 100/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

S/A cable: M 12 connector on free conductor end



S/A cable: M 12 connector on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3-pin connector
- Plug with M 12 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 3 x 0.34 mm² (42 x 0.1 mm)
- Core colours: brown, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

IP	Protection rating IP65/IP68/IP69K
0+T	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

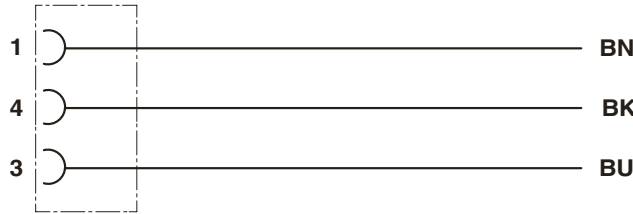
Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	PU
Straight connector					
22260221	AB-C3-M12MS-2,0PUR	2	250	4	1
22260222	AB-C3-M12MS-5,0PUR	5	250	4	1
22260249	AB-C3-M12MS-10,0PUR	10	250	4	1
Angled connector					
22260223	AB-C3-M12MA-2,0PUR	2	250	4	1
22260224	AB-C3-M12MA-5,0PUR	5	250	4	1
22260256	AB-C3-M12MA-10,0PUR	10	250	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

S/A cable: M12 socket on free conductor end



S/A cable: M12 socket on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3-pin connector
- Socket with M12 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 3 x 0.34 mm² (42 x 0.1 mm)
- Core colours: brown, blue, black
- Outer sheath: PUR, halogen-free/PVC
- Outer sheath colour: black

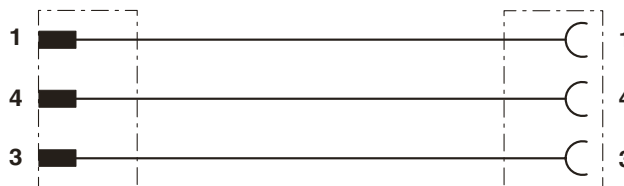
Technical data

IP	Protection rating IP65 /IP68 /IP69K
⊕	Ambient temperature (operation) Plug/socket -25 °C to +90 °C (PUR/PVC) Cable, fixed installation -40 °C to +80 °C (PUR) -25 °C to +80 °C (PVC) Cable, flexible installation -5 °C to +80 °C (PUR/PVC)
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight socket						
22260257	AB-C3-2,0PUR-M12FS	2	250	4	no	1
22260250	AB-C3-5,0PUR-M12FS	5	250	4	no	1
22260251	AB-C3-10,0PUR-M12FS	10	250	4	no	1
22260080	AB-C3-2,0PVC-M12FS	2	250	4	no	1
22260663	AB-C3-5,0PVC-M12FS	5	250	4	no	1
22260081	AB-C3-10,0PVC-M12FS	10	250	4	no	1
Angled socket						
22260258	AB-C3-2,0PUR-M12FA	2	250	4	no	1
22260259	AB-C3-5,0PUR-M12FA	5	250	4	no	1
22260260	AB-C3-10,0PUR-M12FA	10	250	4	no	1
Straight socket with LEDs						
22260252	AB-C3-2,0PUR-M12FS-2L	2	24	4	2 LEDs	1
22260265	AB-C3-5,0PUR-M12FS-2L	5	24	4	2 LEDs	1
22260266	AB-C3-10,0PUR-M12FS-2L	10	24	4	2 LEDs	1
Angled socket with LEDs						
22260253	AB-C3-2,0PUR-M12FA-2L	2	24	4	2 LEDs	1
22260254	AB-C3-5,0PUR-M12FA-2L	5	24	4	2 LEDs	1
22260255	AB-C3-10,0PUR-M12FA-2L	10	24	4	2 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 UL approvals can be found in the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

S/A cable: M 12 connector on M 12 socket



S/A cable: M 12 connector on M 12 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3-pin connector
- Plug with M 12 thread to socket with M 12 thread
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 3 x 0.34 mm² (42 x 0.1 mm)
- Core colours: brown, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

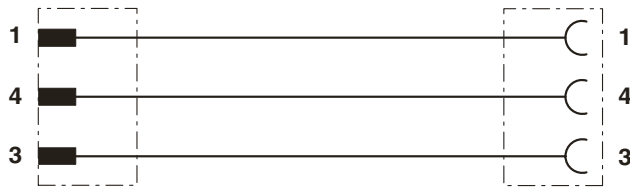
IP	Protection rating IP65/IP68/IP69K
0+T	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight connector to straight socket						
22260233	AB-C3-M12MS-0,3PUR-M12FS	0.3	250	4	no	1
22260234	AB-C3-M12MS-0,6PUR-M12FS	0.6	250	4	no	1
22260235	AB-C3-M12MS-1,0PUR-M12FS	1	250	4	no	1
22260236	AB-C3-M12MS-2,0PUR-M12FS	2	250	4	no	1
Straight connector to angled socket						
22260237	AB-C3-M12MS-0,3PUR-M12FA	0.3	250	4	no	1
22260238	AB-C3-M12MS-0,6PUR-M12FA	0.6	250	4	no	1
22260239	AB-C3-M12MS-1,0PUR-M12FA	1	250	4	no	1
22260240	AB-C3-M12MS-2,0PUR-M12FA	2	250	4	no	1
Straight connector to angled socket with LEDs						
22260261	AB-C3-M12MS-0,3PUR-M12FA-2L	0.3	24	4	2 LEDs	1
22260262	AB-C3-M12MS-0,6PUR-M12FA-2L	0.6	24	4	2 LEDs	1
22260263	AB-C3-M12MS-1,0PUR-M12FA-2L	1	24	4	2 LEDs	1
22260264	AB-C3-M12MS-2,0PUR-M12FA-2L	2	24	4	2 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to the data sheet (www.lappautomation.com) For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

S/A cable: M12 connector on M8 socket



S/A cable: M12 connector on M8 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3-pin connector
- Plug with M12 thread to socket with M8 thread
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 3 x 0.25 mm² (32 x 0.1 mm)
- Core colours: brown, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

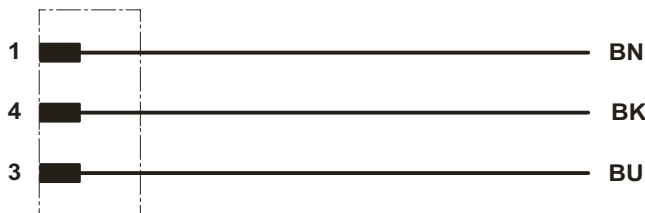
IP	Protection rating IP65/IP68/IP69K
⊕	Ambient temperature (operation) Plug/socket -25 °C to +90 °C Cable, fixed installation -40 °C to +80 °C Cable, flexible installation -5 °C to +80 °C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight connector to straight socket						
22260225	AB-C3-M12MS-0,3PUR-M8FS	0.3	60	3	no	1
22260226	AB-C3-M12MS-0,6PUR-M8FS	0.6	60	3	no	1
22260227	AB-C3-M12MS-1,0PUR-M8FS	1	60	3	no	1
22260228	AB-C3-M12MS-2,0PUR-M8FS	2	60	3	no	1
Straight connector to angled socket						
22260229	AB-C3-M12MS-0,3PUR-M8FA	0.3	60	3	no	1
22260230	AB-C3-M12MS-0,6PUR-M8FA	0.6	60	3	no	1
22260231	AB-C3-M12MS-1,0PUR-M8FA	1	60	3	no	1
22260232	AB-C3-M12MS-2,0PUR-M8FA	2	60	3	no	1
Straight connector to angled socket with LEDs						
22260267	AB-C3-M12MS-0,3PUR-M8FA-2L	0.3	24	3	2 LEDs	1
22260268	AB-C3-M12MS-0,6PUR-M8FA-2L	0.6	24	3	2 LEDs	1
22260269	AB-C3-M12MS-1,0PUR-M8FA-2L	1	24	3	2 LEDs	1
22260270	AB-C3-M12MS-2,0PUR-M8FA-2L	2	24	3	2 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

New

S/A cable: M8 connector on free conductor end



S/A cable: M8 connector on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3-pin connector
- Plug with M8 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 3 x 0.25 mm² (32 x 0.1 mm)
- Core colours: brown, blue, black
- Outer sheath: PUR, halogen-free/PVC
- Outer sheath colour: black

Technical data

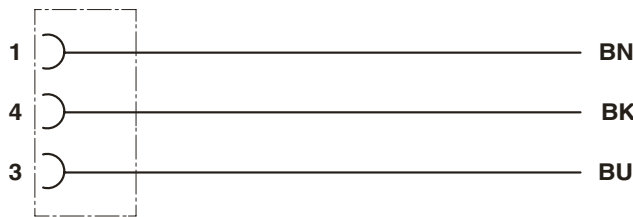
IP	Protection rating IP65/IP68/IP69K
0+	Ambient temperature (operation) Plug/socket -25°C to +90°C (PUR/PVC) Cable, fixed installation -40°C to +80°C (PUR) -25°C to +80°C (PVC) Cable, flexible installation -5°C to +80°C (PUR/PVC)
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _n (V)	Nominal current I _n in (A)	PU
Straight connector					
22260204	AB-C3-M8MS-2,0PUR	2	60	3	1
22260205	AB-C3-M8MS-5,0PUR	5	60	3	1
22260218	AB-C3-M8MS-10,0PUR	10	60	3	1
22260847	AB-C3-M8MS-2,0PVC	2	60	3	1
22260665	AB-C3-M8MS-5,0PVC	5	60	3	1
22260848	AB-C3-M8MS-10,0PVC	10	60	3	1
Angled connector					
22260053	AB-C3-M8MA-2,0PUR	2	60	3	1
22260987	AB-C3-M8MA-5,0PUR	5	60	3	1
22260055	AB-C3-M8MA-10,0PUR	10	60	3	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 UL approvals can be found in the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

S/A cable: M8 socket on free conductor end



S/A cable: M8 socket on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3-pin connector
- Socket with M8 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 3 x 0.25 mm² (32 x 0.1 mm)
- Core colours: brown, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

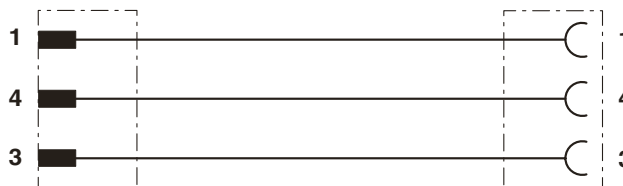
Technical data

IP	Protection rating IP65/IP68/IP69K
⊕	Ambient temperature (operation) Plug/socket -25 °C to +90 °C Cable, fixed installation -40 °C to +80 °C Cable, flexible installation -5 °C to +80 °C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight socket						
22260202	AB-C3-2,0PUR-M8FS	2	60	3	no	1
22260200	AB-C3-5,0PUR-M8FS	5	60	3	no	1
22260219	AB-C3-10,0PUR-M8FS	10	60	3	no	1
Angled socket						
22260203	AB-C3-2,0PUR-M8FA	2	60	3	no	1
22260201	AB-C3-5,0PUR-M8FA	5	60	3	no	1
22260220	AB-C3-10,0PUR-M8FA	10	60	3	no	1
Angled socket with LEDs						
22260275	AB-C3-2,0PUR-M8FA-2L	2	24	3	2 LEDs	1
22260276	AB-C3-5,0PUR-M8FA-2L	5	24	3	2 LEDs	1
22260277	AB-C3-10,0PUR-M8FA-2L	10	24	3	2 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

S/A cable: M8 connector on M8 socket



S/A cable: M8 connector on M8 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3-pin connector
- Plug with M8 thread to socket with M8 thread
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 3 x 0.25 mm² (32 x 0.1 mm)
- Core colours: brown, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

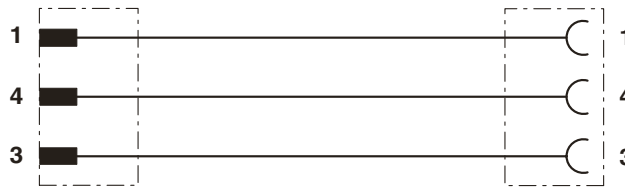
IP	Protection rating IP65/IP68/IP69K
0+T	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight connector to straight socket						
22260206	AB-C3-M8MS-0,3PUR-M8FS	0.3	60	3	no	1
22260207	AB-C3-M8MS-0,6PUR-M8FS	0.6	60	3	no	1
22260208	AB-C3-M8MS-1,0PUR-M8FS	1	60	3	no	1
22260209	AB-C3-M8MS-2,0PUR-M8FS	2	60	3	no	1
Straight connector to angled socket						
22260210	AB-C3-M8MS-0,3PUR-M8FA	0.3	60	3	no	1
22260211	AB-C3-M8MS-0,6PUR-M8FA	0.6	60	3	no	1
22260212	AB-C3-M8MS-1,0PUR-M8FA	1	60	3	no	1
22260213	AB-C3-M8MS-2,0PUR-M8FA	2	60	3	no	1
Straight connector to angled socket with LEDs						
22260214	AB-C3-M8MS-0,3PUR-M8FA-2L	0.3	24	3	2 LEDs	1
22260215	AB-C3-M8MS-0,6PUR-M8FA-2L	0.6	24	3	2 LEDs	1
22260216	AB-C3-M8MS-1,0PUR-M8FA-2L	1	24	3	2 LEDs	1
22260217	AB-C3-M8MS-2,0PUR-M8FA-2L	2	24	3	2 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

S/A cable: M8 connector on M12 socket



S/A cable: M8 connector on M12 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3-pin connector
- Plug with M8 thread to socket with M12 thread
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 3 x 0.25 mm² (32 x 0.1 mm)
- Core colours: brown, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

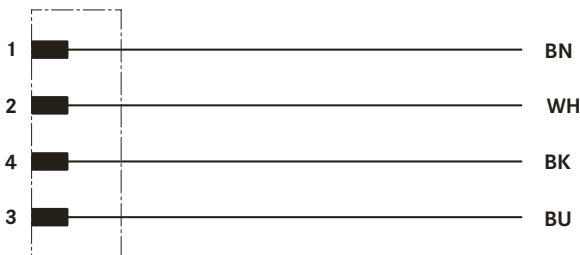
Technical data

IP	Protection rating IP65/IP68/IP69K
⊕	Ambient temperature (operation) Plug/socket -25 °C to +90 °C Cable, fixed installation -40 °C to +80 °C Cable, flexible installation -5 °C to +80 °C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight connector to straight socket						
22260241	AB-C3-M8MS-0,3PUR-M12FS	0.3	60	3	no	1
22260242	AB-C3-M8MS-0,6PUR-M12FS	0.6	60	3	no	1
22260243	AB-C3-M8MS-1,0PUR-M12FS	1	60	3	no	1
22260244	AB-C3-M8MS-2,0PUR-M12FS	2	60	3	no	1
Straight connector to angled socket						
22260245	AB-C3-M8MS-0,3PUR-M12FA	0.3	60	3	no	1
22260246	AB-C3-M8MS-0,6PUR-M12FA	0.6	60	3	no	1
22260247	AB-C3-M8MS-1,0PUR-M12FA	1	60	3	no	1
22260248	AB-C3-M8MS-2,0PUR-M12FA	2	60	3	no	1
Straight connector to angled socket with LEDs						
22260271	AB-C3-M8MS-0,3PUR-M12FA-2L	0.3	24	3	2 LEDs	1
22260272	AB-C3-M8MS-0,6PUR-M12FA-2L	0.6	24	3	2 LEDs	1
22260273	AB-C3-M8MS-1,0PUR-M12FA-2L	1	24	3	2 LEDs	1
22260274	AB-C3-M8MS-2,0PUR-M12FA-2L	2	24	3	2 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to the data sheet (www.lappautomation.com) For the UNITRONIC® field bus type code, please see table T6

S/A cable: M 12 connector on free conductor end



S/A cable: M 12 connector on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin connector
- Plug with M 12 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 4 x 0.34 mm² (42 x 0.1 mm)
- Core colours: brown, white, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

IP	Protection rating IP65/IP68/IP69K
0-1	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

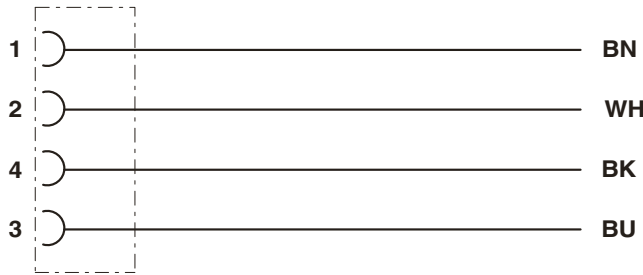
Article number	Article designation	Length (m)	Nominal voltage U _n (V)	Nominal current I _n (A)	PU
Straight connector					
22260320	AB-C4-M12MS-2,0PUR	2	250	4	1
22260321	AB-C4-M12MS-5,0PUR	5	250	4	1
22260342	AB-C4-M12MS-10,0PUR	10	250	4	1
Angled connector					
22260301	AB-C4-M12MA-2,0PUR	2	250	4	1
22260302	AB-C4-M12MA-5,0PUR	5	250	4	1
22260303	AB-C4-M12MA-10,0PUR	10	250	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to the data sheet (www.lappautomation.com) For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

S/A cable: M12 socket on free conductor end



S/A cable: M12 socket on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin connector
- Socket with M12 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 4 x 0.34 mm² (42 x 0.1 mm)
- Core colours: brown, white, blue, black
- Outer sheath: PUR, halogen-free/PVC
- Outer sheath colour: black

Technical data

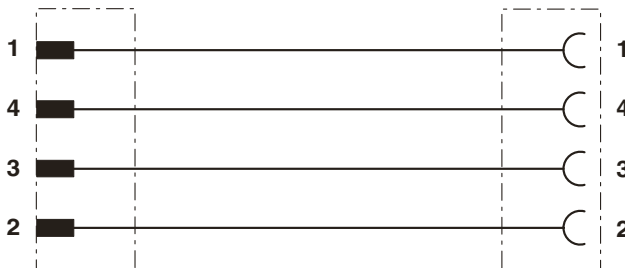
IP	Protection rating IP65 /IP68 /IP69K
0-1	Ambient temperature (operation) Plug/socket -25 °C to +90 °C (PUR/PVC) Cable, fixed installation -40 °C to +80 °C (PUR) -25 °C to +80 °C (PVC) Cable, flexible installation -5 °C to +80 °C (PUR/PVC)
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _n (V)	Nominal current I _n in (A)	Status display	PU
Straight socket						
22260322	AB-C4- 2,0PUR-M12FS	2	250	4	no	1
22260323	AB-C4- 5,0PUR-M12FS	5	250	4	no	1
22260343	AB-C4-10,0PUR-M12FS	10	250	4	no	1
22260688	AB-C4- 2,0PVC-M12FS	2	250	4	no	1
22260689	AB-C4-5,0PVC-M12FS	5	250	4	no	1
22260685	AB-C4-10,0PVC-M12FS	10	250	4	no	1
Angled socket						
22260324	AB-C4- 2,0PUR-M12FA	2	250	4	no	1
22260325	AB-C4- 5,0PUR-M12FA	5	250	4	no	1
22260341	AB-C4-10,0PUR-M12FA	10	250	4	no	1
22260841	AB-C4- 2,0PVC-M12FA	2	250	4	no	1
22260678	AB-C4-5,0PVC-M12FA	5	250	4	no	1
22260683	AB-C4-10,0PVC-M12FA	10	250	4	no	1
Straight socket with LEDs						
22260344	AB-C4- 2,0PUR-M12FS-2L	2	24	4	2 LEDs	1
22260345	AB-C4- 5,0PUR-M12FS-2L	5	24	4	2 LEDs	1
22260346	AB-C4-10,0PUR-M12FS-2L	10	24	4	2 LEDs	1
Angled socket with LEDs						
22260326	AB-C4- 2,0PUR-M12FA-3L	2	24	4	3 LEDs	1
22260327	AB-C4- 5,0PUR-M12FA-3L	5	24	4	3 LEDs	1
22260340	AB-C4-10,0PUR-M12FA-3L	10	24	4	3 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to the data sheet (www.lappautomation.com) UL approvals can be found in the data sheet (www.lappautomation.com) For the UNITRONIC® field bus type code, please see table T6

New

S/A cable: M12 connector on M12 socket



S/A cable: M12 connector on M12 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin connector
- Plug with M12 thread to socket with M12 thread
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 4 x 0.34 mm² (42 x 0.1 mm)
- Core colours: brown, white, blue, black
- Outer sheath: PUR, halogen-free/PVC
- Outer sheath colour: black

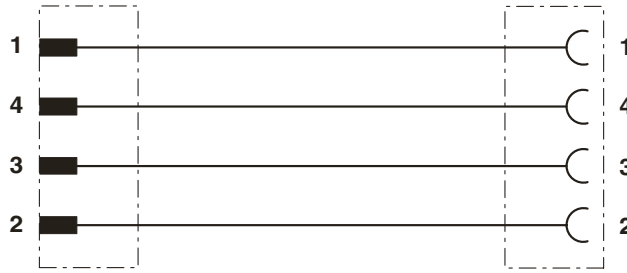
Technical data

IP	Protection rating IP65/IP68/IP69K
0+	Ambient temperature (operation) Plug/socket -25°C to +90°C (PUR/PVC) Cable, fixed installation -40°C to +80°C (PUR) -25°C to +80°C (PVC) Cable, flexible installation -5°C to +80°C (PUR/PVC)
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight connector to straight socket						
22260328	AB-C4-M12MS-0,3PUR-M12FS	0.3	250	4	no	1
22260329	AB-C4-M12MS-0,6PUR-M12FS	0.6	250	4	no	1
22260330	AB-C4-M12MS-1,0PUR-M12FS	1	250	4	no	1
22260331	AB-C4-M12MS-2,0PUR-M12FS	2	250	4	no	1
Straight connector to angled socket						
22260332	AB-C4-M12MS-0,3PUR-M12FA	0.3	250	4	no	1
22260333	AB-C4-M12MS-0,6PUR-M12FA	0.6	250	4	no	1
22260334	AB-C4-M12MS-1,0PUR-M12FA	1	250	4	no	1
22260335	AB-C4-M12MS-2,0PUR-M12FA	2	250	4	no	1
22260832	AB-C4-M12MS-2,0PVC-M12FA	2	250	4	no	1
22260705	AB-C4-M12MS-5,0PVC-M12FA	5	250	4	no	1
22260833	AB-C4-M12MS-10,0PVC-M12FA	10	250	4	no	1
Angled connector to straight socket						
22260304	AB-C4-M12MA-0,3PUR-M12FS	0.3	250	4	no	1
22260305	AB-C4-M12MA-0,6PUR-M12FS	0.6	250	4	no	1
22260306	AB-C4-M12MA-1,0PUR-M12FS	1	250	4	no	1
22260307	AB-C4-M12MA-2,0PUR-M12FS	2	250	4	no	1
Straight connector to angled socket with LEDs						
22260336	AB-C4-M12MS-0,3PUR-M12FA-3L	0.3	24	4	3 LEDs	1
22260337	AB-C4-M12MS-0,6PUR-M12FA-3L	0.6	24	4	3 LEDs	1
22260338	AB-C4-M12MS-1,0PUR-M12FA-3L	1	24	4	3 LEDs	1
22260339	AB-C4-M12MS-2,0PUR-M12FA-3L	2	24	4	3 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 UL approvals can be found in the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

S/A cable: M12 connector on M8 socket



S/A cable: M12 connector on M8 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin connector
- Plug with M12 thread to socket with M8 thread
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 4 x 0.25 mm² (32 x 0.1 mm)
- Core colours: brown, white, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

IP	Protection rating IP65/IP68/IP69K
⊕	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

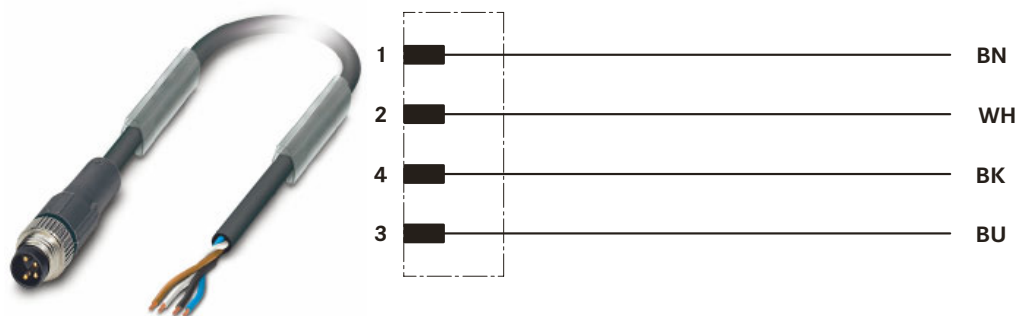
Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight connector to straight socket						
22260347	AB-C4-M12MS-0,3PUR-M8FS	0.3	30	3	no	1
22260349	AB-C4-M12MS-0,6PUR-M8FS	0.6	30	3	no	1
22260350	AB-C4-M12MS-1,0PUR-M8FS	1	30	3	no	1
22260348	AB-C4-M12MS-2,0PUR-M8FS	2	30	3	no	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 UL approvals can be found in the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

S/A cable: M8 connector on free conductor end



S/A cable: M8 connector on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin connector
- Plug with M8 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 4 x 0.25 mm² (32 x 0.1 mm)
- Core colours: brown, white, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

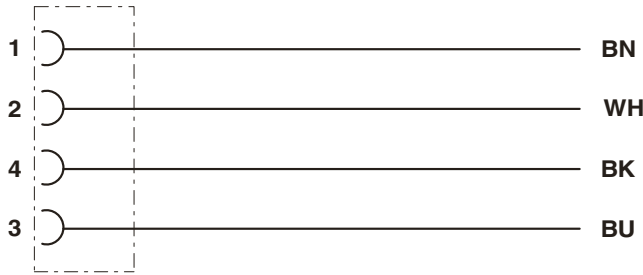
IP	Protection rating IP65/IP68/IP69K
0+	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _n (V)	Nominal current I _n (A)	PU
Straight connector					
22260300	AB-C4-M8MS-2,0PUR	2	30	3	1
22260308	AB-C4-M8MS-5,0PUR	5	30	3	1
22260318	AB-C4-M8MS-10,0PUR	10	30	3	1
Angled connector					
22260056	AB-C4-M8MA-2,0PUR	2	30	3	1
22260057	AB-C4-M8MA-5,0PUR	5	30	3	1
22260058	AB-C4-M8MA-10,0PUR	10	30	3	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 UL approvals can be found in the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

S/A cable: M8 socket on free conductor end



S/A cable: M8 socket on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin connector
- Socket with M8 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 4 x 0.25 mm² (32 x 0.1 mm)
- Core colours: brown, white, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

IP	Protection rating IP65/IP68/IP69K
⊕	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

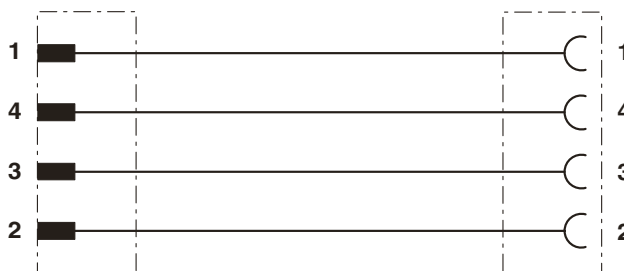
Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight socket						
22260309	AB-C4- 2,0PUR-M8FS	2	30	3	no	1
22260310	AB-C4- 5,0PUR-M8FS	5	30	3	no	1
22260317	AB-C4-10,0PUR-M8FS	10	30	3	no	1
Angled socket						
22260311	AB-C4- 2,0PUR-M8FA	2	30	3	no	1
22260312	AB-C4- 5,0PUR-M8FA	5	30	3	no	1
22260319	AB-C4-10,0PUR-M8FA	10	30	3	no	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

S/A cable: M8 connector on M8 socket



S/A cable: M8 connector on M8 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin connector
- Plug with M8 thread to socket with M8 thread
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 4 x 0.25 mm² (32 x 0.1 mm)
- Core colours: brown, white, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

IP	Protection rating IP65/IP68/IP69K
0+	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight connector to straight socket						
22260313	AB-C4-M8MS-0,3PUR-M8FS	0.3	30	3	no	1
22260314	AB-C4-M8MS-0,6PUR-M8FS	0.6	30	3	no	1
22260315	AB-C4-M8MS-1,0PUR-M8FS	1	30	3	no	1
22260316	AB-C4-M8MS-2,0PUR-M8FS	2	30	3	no	1
Straight connector to angled socket						
22260059	AB-C4-M8MS-0,3PUR-M8FA	0.3	30	3	no	1
22260060	AB-C4-M8MS-0,6PUR-M8FA	0.6	30	3	no	1
22260061	AB-C4-M8MS-1,0PUR-M8FA	1	30	3	no	1
22260062	AB-C4-M8MS-2,0PUR-M8FA	2	30	3	no	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 UL approvals can be found in the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

S/A cable: M12 connector on free conductor end



S/A cable: M12 connector on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 5-pin connector
- Plug with M12 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 5 x 0.34 mm² (42 x 0.1 mm)
- Core colours: brown, white, blue, black, green/yellow
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

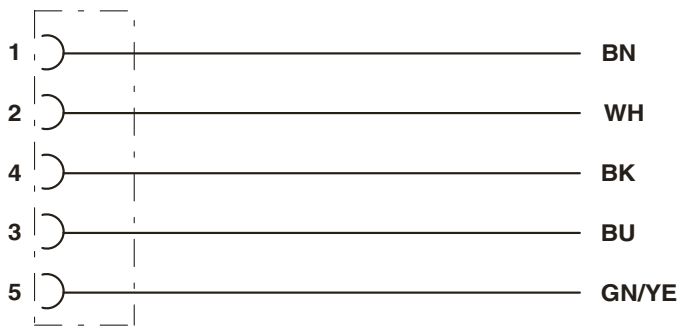
Technical data

IP	Protection rating IP65/IP68/IP69K
0/1	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	PU
Straight connector					
22260400	AB-C5-M12MS-2,0PUR	2	60	4	1
22260401	AB-C5-M12MS-5,0PUR	5	60	4	1
22260414	AB-C5-M12MS-10,0PUR	10	60	4	1
Angled connector					
22260402	AB-C5-M12MA-2,0PUR	2	60	4	1
22260403	AB-C5-M12MA-5,0PUR	5	60	4	1
22260417	AB-C5-M12MA-10,0PUR	10	60	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

S/A cable: M12 socket on free conductor end



S/A cable: M12 socket on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 5-pin connector
- Socket with M12 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 5 x 0.34 mm² (42 x 0.1 mm)
- Core colours: brown, white, blue, black, green/yellow
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

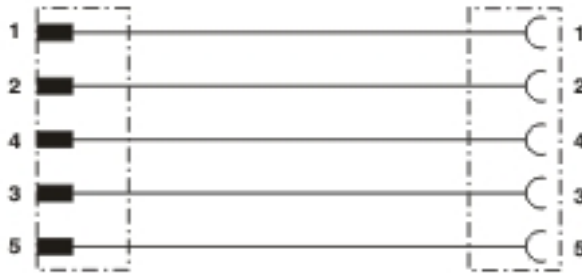
IP	Protection rating IP65/IP68/IP69K
0+T	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight socket						
22260404	AB-C5- 2,0PUR-M12FS	2	60	4	no	1
22260405	AB-C5- 5,0PUR-M12FS	5	60	4	no	1
22260415	AB-C5-10,0PUR-M12FS	10	60	4	no	1
Angled socket						
22260406	AB-C5- 2,0PUR-M12FA	2	60	4	no	1
22260407	AB-C5- 5,0PUR-M12FA	5	60	4	no	1
22260418	AB-C5-10,0PUR-M12FA	10	60	4	no	1
Angled socket with LEDs						
22260408	AB-C5- 2,0PUR-M12FA-3L	2	24	4	3 LEDs	1
22260409	AB-C5- 5,0PUR-M12FA-3L	5	24	4	3 LEDs	1
22260416	AB-C5-10,0PUR-M12FA-3L	10	24	4	3 LEDs	1
22260760	AB-C5-25,0PUR-M12FA-3L	25	24	4	3 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 UL approvals can be found in the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

New

S/A cable: M12 connector on M12 socket



S/A cable: M12 connector on M12 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 5-pin connector
- Plug with M12 thread to socket with M12 thread
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 5 x 0.34 mm² (42 x 0.1 mm)
- Core colours: brown, white, blue, black, green/yellow
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

IP	Protection rating IP65 /IP68 /IP69K
0-1	Ambient temperature (operation) Plug/socket -25 °C to +90 °C Cable, fixed installation -40 °C to +80 °C Cable, flexible installation -5 °C to +80 °C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight connector to straight socket						
22260410	AB-C5-M12MS-0,3PUR-M12FS	0.3	60	4	no	1
22260411	AB-C5-M12MS-0,6PUR-M12FS	0.6	60	4	no	1
22260412	AB-C5-M12MS-1,0PUR-M12FS	1	60	4	no	1
22260413	AB-C5-M12MS-2,0PUR-M12FS	2	60	4	no	1
Straight connector to angled socket						
22260063	AB-C5-M12MS-0,3PUR-M12FA	0.3	60	4	no	1
22260064	AB-C5-M12MS-0,6PUR-M12FA	0.6	60	4	no	1
22260065	AB-C5-M12MS-1,0PUR-M12FA	1	60	4	no	1
22260066	AB-C5-M12MS-2,0PUR-M12FA	2	60	4	no	1
Straight connector to angled socket with LEDs						
22260067	AB-C5-M12MS-0,3PUR-M12FA-3L	0.3	24	4	3 LEDs	1
22260068	AB-C5-M12MS-0,6PUR-M12FA-3L	0.6	24	4	3 LEDs	1
22260069	AB-C5-M12MS-1,0PUR-M12FA-3L	1	24	4	3 LEDs	1
22260070	AB-C5-M12MS-2,0PUR-M12FA-3L	2	24	4	3 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 UL approvals can be found in the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

New

S/A cable: M 12 connector/socket on free conductor end



S/A cable: M 12 connector/socket on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 8-pin connector
- Design: plug/socket with M 12 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 8 x 0.25 mm² (32 x 0.1 mm)
- Core colours: brown, blue, white, grey, pink, red, yellow, green
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

IP	Protection rating IP65/IP68/IP69K
0 +	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _n (V)	Nominal current I _n in (A)	PU
Straight connector					
22260091	AB-C8-M12MS-2,0PUR	2	30	2	1
22260092	AB-C8-M12MS-5,0PUR	5	30	2	1
22260093	AB-C8-M12MS-10,0PUR	10	30	2	1
Angled connector					
22260094	AB-C8-M12MA-2,0PUR	2	30	2	1
22260095	AB-C8-M12MA-5,0PUR	5	30	2	1
22260096	AB-C8-M12MA-10,0PUR	10	30	2	1
Straight socket					
22260726	AB-C8-2,0PUR-M12FS	2	30	2	1
22260728	AB-C8-5,0PUR-M12FS	5	30	2	1
22260729	AB-C8-10,0PUR-M12FS	10	30	2	1
8 pole angled socket					
22260615	AB-C8-5,0PUR-M12FA	5	30	2	1
22260616	AB-C8-10,0PUR-M12FA	10	30	2	1
22260141	AB-C8-2,0PUR-M12FA	2	30	2	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 UL approvals can be found in the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

S/A cable: M 12 connector on M 12 socket



S/A cable: M 12 connector on M 12 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 8-pin connector
- Plug with M 12 thread to socket with M 12 thread
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 8 x 0.25 mm² (32 x 0.1 mm)
- Core colours: brown, blue, white, grey, pink, red, yellow, green
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data



Protection rating
IP65/IP68/IP69K



Ambient temperature (operation)
Plug/socket
-25 °C to +90 °C
Cable, fixed installation
-40 °C to +90 °C
Cable, flexible installation
-5 °C to 80 °C

Contact material
CuSn

Contact surface material
Ni/Au

Coding
A - Standard

Knurl material
Zinc die-cast, nickel-plated

Gripping body material
TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	PU
Straight connector to straight socket					
22260097	AB-C8-M12MS-0,3PUR-M12FS	0.3	30	2	1
22260098	AB-C8-M12MS-0,6PUR-M12FS	0.6	30	2	1
22260099	AB-C8-M12MS-1,0PUR-M12FS	1	30	2	1
22260042	AB-C8-M12MS-2,0PUR-M12FS	2	30	2	1
Straight connector to angled socket					
22260137	AB-C8-M12MS-0,3PUR-M12FA	0.3	30	2	1
22260138	AB-C8-M12MS-0,6PUR-M12FA	0.6	30	2	1
22260139	AB-C8-M12MS-1,0PUR-M12FA	1	30	2	1
22260140	AB-C8-M12MS-2,0PUR-M12FA	2	30	2	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet (www.lappautomation.com)

UL approvals can be found in the data sheet (www.lappautomation.com)

For the UNITRONIC® field bus type code, please see table T6

S/A cable: shielded, M12 connector on free conductor end



S/A cable: shielded, M12 connector on free conductor end



Info

- Suitable for drag chains

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3, 4 and 5-pin version
- Plug with M12 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design:
 - 3 x 0.34 mm² (42 x 0.1 mm)
 - 4 x 0.34 mm² (42 x 0.1 mm)
 - 5 x 0.34 mm² (42 x 0.1 mm)
- Outer sheath: PUR, halogen-free, screened
- Outer sheath colour: black

Technical data



Protection rating
IP65/IP67/IP69K



Ambient temperature (operation)
Plug/socket
-25°C to +90°C
Cable, fixed installation
-25°C to +80°C
Cable, flexible installation
-5°C to +80°C

Contact material
CuSn

Contact surface material
Ni/Au

Coding
A - Standard

Knurl material
Zinc die-cast, nickel-plated

Gripping body material
TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _n (V)	Nominal current I _n in (A)	PU
3-pin straight connector					
22260453	AB-C3-M12MS- 2,0PUR-SH	2	250	4	1
22260454	AB-C3-M12MS- 5,0PUR-SH	5	250	4	1
22260455	AB-C3-M12MS-10,0PUR-SH	10	250	4	1
4-pin straight connector					
22260459	AB-C4-M12MS- 2,0PUR-SH	2	250	4	1
22260460	AB-C4-M12MS- 5,0PUR-SH	5	250	4	1
22260461	AB-C4-M12MS-10,0PUR-SH	10	250	4	1
5-pin straight connector					
22260465	AB-C5-M12MS- 2,0PUR-SH	2	60	4	1
22260466	AB-C5-M12MS- 5,0PUR-SH	5	60	4	1
22260467	AB-C5-M12MS-10,0PUR-SH	10	60	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.
For detailed technical information please refer to the data sheet (www.lappautomation.com)
For the UNITRONIC® field bus type code, please see table T6

New

S/A cable: shielded, M12 socket on free conductor end



Info

- Suitable for drag chains



S/A cable: shielded, M12 socket on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3, 4 and 5-pin version
- Socket with M12 thread to free conductor end
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design:
 - 3 x 0.34 mm² (42 x 0.1 mm)
 - 4 x 0.34 mm² (42 x 0.1 mm)
 - 5 x 0.34 mm² (42 x 0.1 mm)
- Outer sheath: PUR, halogen-free, screened
- Outer sheath colour: black

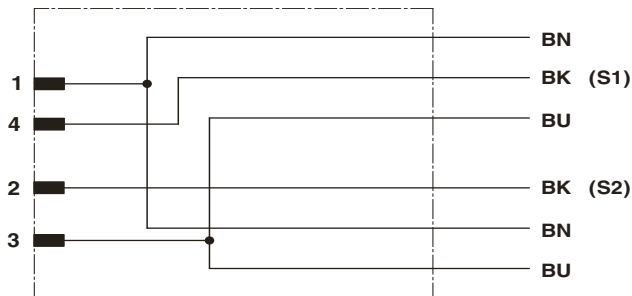
Technical data

IP	Protection rating IP65 / IP67 / IP69K
0-1	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -25°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _n (V)	Nominal current I _n in (A)	Status display	PU
3-pin straight socket						
22260450	AB-C3- 2,0PUR-M12FS-SH	2	250	4	no	1
22260451	AB-C3- 5,0PUR-M12FS-SH	5	250	4	no	1
22260452	AB-C3-10,0PUR-M12FS-SH	10	250	4	no	1
3-pin angled socket						
22260071	AB-C3- 2,0PUR-M12FA-SH	2	250	4	no	1
22260072	AB-C3- 5,0PUR-M12FA-SH	5	250	4	no	1
22260073	AB-C3-10,0PUR-M12FA-SH	10	250	4	no	1
4-pin straight socket						
22260456	AB-C4- 2,0PUR-M12FS-SH	2	250	4	no	1
22260457	AB-C4- 5,0PUR-M12FS-SH	5	250	4	no	1
22260458	AB-C4-10,0PUR-M12FS-SH	10	250	4	no	1
22260823	AB-C4-20,0PUR-M12FS-SH	20	250	4	no	1
4-pin angled socket						
22260074	AB-C4- 2,0PUR-M12FA-SH	2	250	4	no	1
22260675	AB-C4- 5,0PUR-M12FA-SH	5	250	4	no	1
22260680	AB-C4-10,0PUR-M12FA-SH	10	250	4	no	1
5-pin straight socket						
22260462	AB-C5- 2,0PUR-M12FS-SH	2	60	4	no	1
22260463	AB-C5- 5,0PUR-M12FS-SH	5	60	4	no	1
22260464	AB-C5-10,0PUR-M12FS-SH	10	60	4	no	1
5-pin angled socket						
22260946	AB-C5- 2,0PUR-M12FA-SH	2	60	4	no	1
22260714	AB-C5- 5,0PUR-M12FA-SH	5	60	4	no	1
22260991	AB-C5-10,0PUR-M12FA-SH	10	60	4	no	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 UL approvals can be found in the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

S/A cable: straight M 12 Y plug on 2x free conductor end



S/A cable: straight M12 Y plug on 2x free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin M12 Y connector
- Straight M12 Y plug to 2 conductor ends
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 3 x 0.34 mm² (42 x 0.1 mm)
- Core colours: brown, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

IP	Protection rating IP65/IP68/IP69K
0+T	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal current I _n in (A)	PU
Y plug to 2 x free conductor end				
22260500	AB-C3-M12Y-2,0PUR	2	4	1
22260513	AB-C3-M12Y-5,0PUR	5	4	1
22260526	AB-C3-M12Y-10,0PUR	10	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

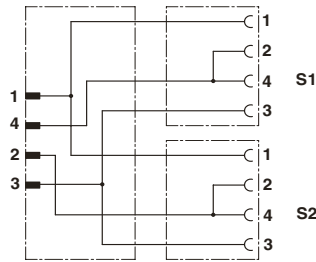
ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

S/A cable: straight M 12 Y plug on 2x M 12 socket



Info

- PIN 2+4 are bridged on M 12 sockets



S/A cable: straight M 12 Y plug on 2x M 12 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin M 12 Y connector on 2 x M 12 socket (4-pin)
- Straight M 12 Y plug to 2 conductor ends
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 3 x 0.34 mm² (42 x 0.1 mm)
- Core colours: brown, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

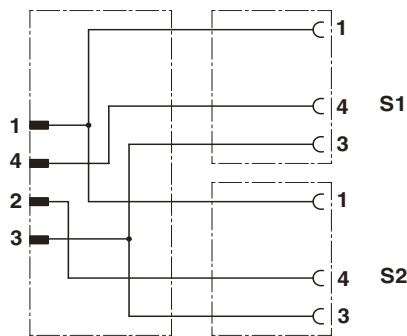
Technical data

IP	Protection rating IP65/IP68/IP69K
0+T	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal current I _n in (A)	Status display	PU
Y plug to straight socket					
22260501	AB-C3-M12Y-0,3PUR-M12FS-B	0.3	4	no	1
22260502	AB-C3-M12Y-0,6PUR-M12FS-B	0.6	4	no	1
22260503	AB-C3-M12Y-1,0PUR-M12FS-B	1	4	no	1
22260504	AB-C3-M12Y-2,0PUR-M12FS-B	2	4	no	1
Y plug to angled socket					
22260505	AB-C3-M12Y-0,3PUR-M12FA-B	0.3	4	no	1
22260506	AB-C3-M12Y-0,6PUR-M12FA-B	0.6	4	no	1
22260507	AB-C3-M12Y-1,0PUR-M12FA-B	1	4	no	1
22260508	AB-C3-M12Y-2,0PUR-M12FA-B	2	4	no	1
Y plug to angled socket with LEDs					
22260509	AB-C3-M12Y-0,3PUR-M12FA-2L-B	0.3	4	2 LEDs	1
22260510	AB-C3-M12Y-0,6PUR-M12FA-2L-B	0.6	4	2 LEDs	1
22260511	AB-C3-M12Y-1,0PUR-M12FA-2L-B	1	4	2 LEDs	1
22260512	AB-C3-M12Y-2,0PUR-M12FA-2L-B	2	4	2 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

S/A cable: straight M 12 Y plug on 2x M8 socket



S/A cable: straight M 12 Y plug on 2x M8 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin M 12 Y connector on 2 x M8 socket (3-pin)
- Straight M 12 Y plug to 2 conductor ends
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- Fixed flexible control cable
- Design: 3 x 0.25 mm² (32 x 0.1 mm)
- Core colours: brown, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Technical data

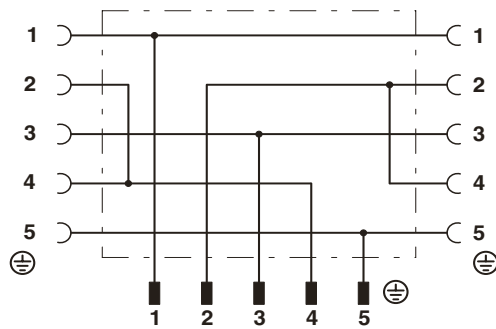
IP	Protection rating IP65/IP68/IP69K
0+T	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal current I _n in (A)	Status display	PU
Y plug to straight socket					
22260514	AB-C3-M12Y-0,3PUR-M8FS	0.3	3	no	1
22260515	AB-C3-M12Y-0,6PUR-M8FS	0.6	3	no	1
22260516	AB-C3-M12Y-1,0PUR-M8FS	1	3	no	1
22260517	AB-C3-M12Y-2,0PUR-M8FS	2	3	no	1
Y plug to angled socket					
22260518	AB-C3-M12Y-0,3PUR-M8FA	0.3	3	no	1
22260519	AB-C3-M12Y-0,6PUR-M8FA	0.6	3	no	1
22260520	AB-C3-M12Y-1,0PUR-M8FA	1	3	no	1
22260521	AB-C3-M12Y-2,0PUR-M8FA	2	3	no	1
Y plug to angled socket with LEDs					
22260522	AB-C3-M12Y-0,3PUR-M8FA-2L	0.3	3	2 LEDs	1
22260523	AB-C3-M12Y-0,6PUR-M8FA-2L	0.6	3	2 LEDs	1
22260524	AB-C3-M12Y-1,0PUR-M8FA-2L	1	3	2 LEDs	1
22260525	AB-C3-M12Y-2,0PUR-M8FA-2L	2	3	2 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

Y distributor



Y distributor

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Product features

- M12 and M8 design
- M12 design with screw hole
- Free of substances that could hinder paint or varnish

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Approvals



Technical data



Protection rating
IP65/IP67



Ambient temperature (operation)
Plug/socket
-25°C to +90°C

Contact material
CuZn

Contact surface material
Ni/Au

Coding
A - Standard

Knurl material
Zinc die-cast, nickel-plated

Gripping body material
TPU, flame-retardant, self-extinguishing

Article number	Article designation	Nominal voltage U_N (V)	Nominal current I_N in (A)	PU
M12 Y distributor, 3-pin, +PE, straight M12 connector to 2 x straight M12 socket, PIN 2+4 bridged				
22260600	AB-C3-M12Y-2XM12FS B E	60	4	5
M12 Y distributor, 3-pin, +PE, straight M12 connector to 2 x straight M12 socket				
22260601	AB-C3-M12Y-2XM12FS E	60	4	5
M12 Y distributor, 5-pin, straight M12 connector to 2 x straight M12 socket, parallel distributor				
22260602	AB-C5-M12Y-2XM12FS V	60	4	5
M8 Y distributor, with 4-pin M8 connector to 2 x 3-pin M8 socket				
22260603	AB-C3-M8Y-2XM8FS	30	3	5
M8 Y distributor, with M8 connector to M8 socket, 3-pin parallel distributor				
22260604	AB-C3-M8Y-2XM8FS V	60	3	5

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

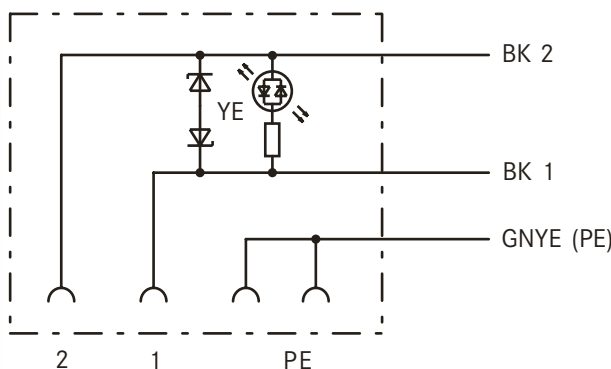
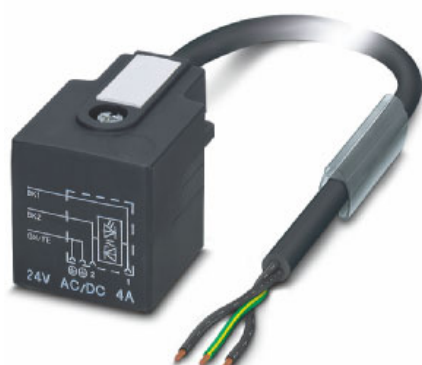
Photographs are not to scale and do not represent detailed images of the respective products.

Note: the table value 'Number of pins' corresponds to the number of pins for sockets

For detailed technical information please refer to the data sheet (www.lappautomation.com)

For the UNITRONIC® field bus type code, please see table T6

S/A cable: 3-pos., valve connector on free conductor end



S/A cable: 3-pos., valve connector on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3-pin valve connector
- With protective circuit (Z diode) PE-bridged
- With LED status indicator (yellow)
- The cables have marker carriers
- Free of substances that could hinder paint or varnish

Approvals



Design

- Cable design: 3 x 0.5 mm² (28 x 0.15 mm)
- Core colours: black 1, black 2, green/yellow
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black (RAL 7021)
- Outer diameter: 4.5 mm
- Suitable for drag chains

Technical data



Protection rating
IP 67



Ambient temperature (operation)
Valve connector
-20°C to +85°C
Cable, fixed installation
-40°C to +80°C
Cable, flexible installation
-15°C to +80°C

Contact material
CuSn

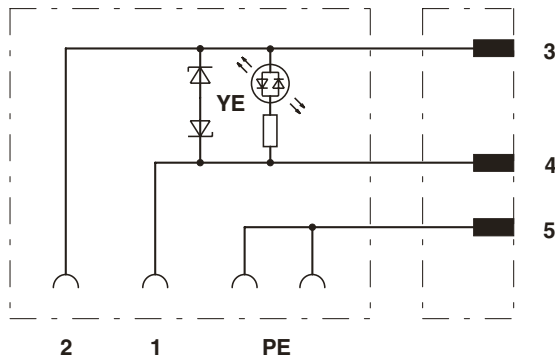
Contact surface material
Ag

Coding
A - Standard

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Valve connector type A (18 mm)						
22260584	AB-C3- 2,0PUR-A-1L-S	2	24	4	1 LED	1
22260576	AB-C3- 5,0PUR-A-1L-S	5	24	4	1 LED	1
22260577	AB-C3-10,0PUR-A-1L-S	10	24	4	1 LED	1
Valve connector type B (10 mm)						
22260585	AB-C3- 2,0PUR-B-1L-S	2	24	4	1 LED	1
22260578	AB-C3- 5,0PUR-B-1L-S	5	24	4	1 LED	1
22260579	AB-C3-10,0PUR-B-1L-S	10	24	4	1 LED	1
Valve connector type BI (11 mm)						
22260586	AB-C3- 2,0PUR-BI-1L-S	2	24	4	1 LED	1
22260580	AB-C3- 5,0PUR-BI-1L-S	5	24	4	1 LED	1
22260581	AB-C3-10,0PUR-BI-1L-S	10	24	4	1 LED	1
Valve connector type C (8 mm)						
22260587	AB-C3- 2,0PUR-C-1L-S	2	24	4	1 LED	1
22260582	AB-C3- 5,0PUR-C-1L-S	5	24	4	1 LED	1
22260583	AB-C3-10,0PUR-C-1L-S	10	24	4	1 LED	1
Valve connector type CI (9.4 mm)						
22260588	AB-C3- 2,0PUR-CI-1L-S	2	24	4	1 LED	1
22260574	AB-C3- 5,0PUR-CI-1L-S	5	24	4	1 LED	1
22260575	AB-C3-10,0PUR-CI-1L-S	10	24	4	1 LED	1
22260921						

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.
For detailed technical information please refer to the data sheet (www.lappautomation.com)
For the UNITRONIC® field bus type code, please see table T6

S/A cable: 3-pos., valve connector on straight M12 plug



S/A cable: 3-pos., valve connector on straight M12 plug

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3-pin valve connector
- With protective circuit (Z diode) PE-bridged
- With LED status indicator (yellow)
- The cables have marker carriers
- Free of substances that could hinder paint or varnish

Approvals



Design

- Cable design: 3 x 0.5 mm² (28 x 0.15 mm)
- Core colours: black 1, black 2, green/yellow
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black (RAL 7021)
- Outer diameter: 4.5 mm
- Suitable for drag chains

Technical data



Protection rating
IP 67



Ambient temperature (operation)

Valve connector
-20 °C to +85 °C
Connector/socket
-25 °C to +90 °C
Cable, fixed installation
-40 °C to +80 °C
Cable, flexible installation
-15 °C to +80 °C

Contact material
CuSn

Contact surface material
Ni/Au

Coding
A - Standard

Knurl material
Zinc die-cast, nickel-plated

Gripping body material
TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight connector to valve connector type A (18 mm)						
22260550	AB-C3-M12MS-0,3PUR-A-1L-S	0,3	24	4	1 LED	1
22260551	AB-C3-M12MS-0,6PUR-A-1L-S	0,6	24	4	1 LED	1
22260552	AB-C3-M12MS-1,0PUR-A-1L-S	1	24	4	1 LED	1
22260553	AB-C3-M12MS-2,0PUR-A-1L-S	2	24	4	1 LED	1
Straight connector to valve connector type B (10 mm)						
22260558	AB-C3-M12MS-0,3PUR-B-1L-S	0,3	24	4	1 LED	1
22260559	AB-C3-M12MS-0,6PUR-B-1L-S	0,6	24	4	1 LED	1
22260560	AB-C3-M12MS-1,0PUR-B-1L-S	1	24	4	1 LED	1
22260561	AB-C3-M12MS-2,0PUR-B-1L-S	2	24	4	1 LED	1
Straight connector to valve connector type BI (11 mm)						
22260554	AB-C3-M12MS-0,3PUR-BI-1L-S	0,3	24	4	1 LED	1
22260555	AB-C3-M12MS-0,6PUR-BI-1L-S	0,6	24	4	1 LED	1
22260556	AB-C3-M12MS-1,0PUR-BI-1L-S	1	24	4	1 LED	1
22260557	AB-C3-M12MS-2,0PUR-BI-1L-S	2	24	4	1 LED	1
Straight connector to valve connector type C (8 mm)						
22260566	AB-C3-M12MS-0,3PUR-C-1L-S	0,3	24	4	1 LED	1
22260567	AB-C3-M12MS-0,6PUR-C-1L-S	0,6	24	4	1 LED	1
22260568	AB-C3-M12MS-1,0PUR-C-1L-S	1	24	4	1 LED	1
22260569	AB-C3-M12MS-2,0PUR-C-1L-S	2	24	4	1 LED	1
Straight connector to valve connector type CI (9.4 mm)						
22260562	AB-C3-M12MS-0,3PUR-CI-1L-S	0,3	24	4	1 LED	1
22260563	AB-C3-M12MS-0,6PUR-CI-1L-S	0,6	24	4	1 LED	1
22260564	AB-C3-M12MS-1,0PUR-CI-1L-S	1	24	4	1 LED	1
22260565	AB-C3-M12MS-2,0PUR-CI-1L-S	2	24	4	1 LED	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

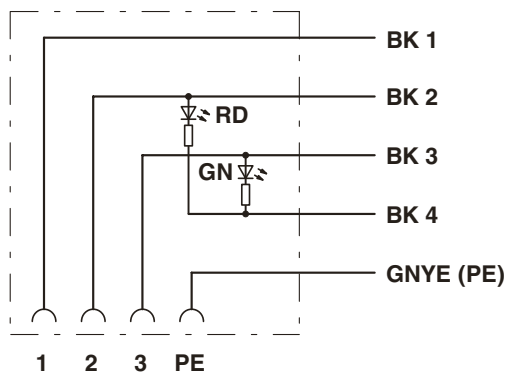
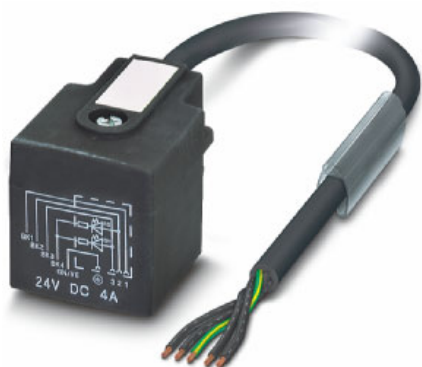
Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet (www.lappautomation.com)

For the UNITRONIC® field bus type code, please see table T6

S/A cable: 5-pos., valve connector on free conductor end, for pressure switch



S/A cable: 5-pos., valve connector on free conductor end, for pressure switch

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 5-pin valve connector
- Valve connector for pressure switch, 18 mm contact spacing
- With display switch state (2 LEDs, red/green)
- The cables have marker carriers
- Free of substances that could hinder paint or varnish

Approvals



Design

- Cable design: 5 x 0.5 mm² (28 x 0.15 mm)
- Core colours: black 1, black 2, black 3, black 4, green/yellow
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black (RAL 7021)
- Outer diameter: 5.3 mm
- Suitable for drag chains

Technical data



Protection rating
IP 67



Ambient temperature (operation)
Valve connector
-20°C to +85°C
Cable, fixed installation
-40°C to +80°C
Cable, flexible installation
-15°C to +80°C

Contact material
CuSn

Contact surface material
Ag

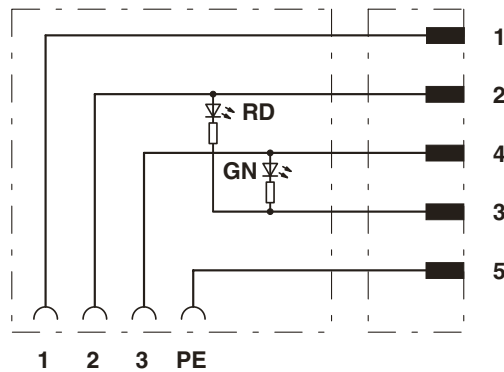
Coding
A - Standard

Article number	Article designation	Length (m)	Nominal voltage U _n (V)	Nominal current I _n in (A)	Status display	PU
Valve connector for pressure switch (18 mm)						
22260589	AB-C5-2,0PUR-AD-2L	2	24	4	2 LEDs	1
22260590	AB-C5-5,0PUR-AD-2L	5	24	4	2 LEDs	1
22260591	AB-C5-10,0PUR-AD-2L	10	24	4	2 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.
For detailed technical information please refer to the data sheet (www.lappautomation.com)
For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

S/A cable: 5-pos., valve connector on straight M 12 plug, for pressure switch



S/A cable: 5-pos., valve connector on straight M 12 plug, for pressure switch

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 5-pin valve connector
- Valve connector for pressure switch, 18 mm contact spacing
- With display switch state (2 LEDs, red/green)
- The cables have marker carriers
- Free of substances that could hinder paint or varnish

Approvals



Design

- Cable design: 5 x 0.5 mm² (28 x 0.15 mm)
- Core colours: black 1, black 2, black 3, black 4, green/yellow
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black (RAL 7021)
- Outer diameter: 5.3 mm
- Suitable for drag chains

Technical data



Protection rating
IP 67



Ambient temperature (operation)
Valve connector
-20 °C to +85 °C
Connector/socket
-25 °C to +90 °C
Cable, fixed installation
-40 °C to +80 °C
Cable, flexible installation
-15 °C to +80 °C

Contact material
CuSn

Contact surface material
Ni/Au

Coding
A - Standard

Knurl material
Zinc die-cast, nickel-plated

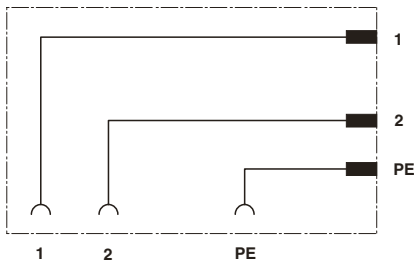
Gripping body material
TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Status display	PU
Straight connector to valve connector for pressure switch						
22260573	AB-C5-M12MS-0,3PUR-AD-2L	0.3	24	4	2 LEDs	1
22260572	AB-C5-M12MS-0,6PUR-AD-2L	0.6	24	4	2 LEDs	1
22260571	AB-C5-M12MS-1,0PUR-AD-2L	1	24	4	2 LEDs	1
22260570	AB-C5-M12MS-2,0PUR-AD-2L	2	24	4	2 LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.
For detailed technical information please refer to the data sheet (www.lappautomation.com)
For the UNITRONIC® field bus type code, please see table T6

New

Field mountable valve connectors



Field mountable valve connectors

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3 and 5-pin valve connector
- The cables have marker carriers
- Free of substances that could hinder paint or varnish
- Connection type: screw connection

Approvals



Suitable cables

- UNITRONIC® SENSOR Page 379

Technical data



Protection rating
IP 65



Ambient temperature (operation)
Valve connector
-25°C to +60°C

Standards/stipulations

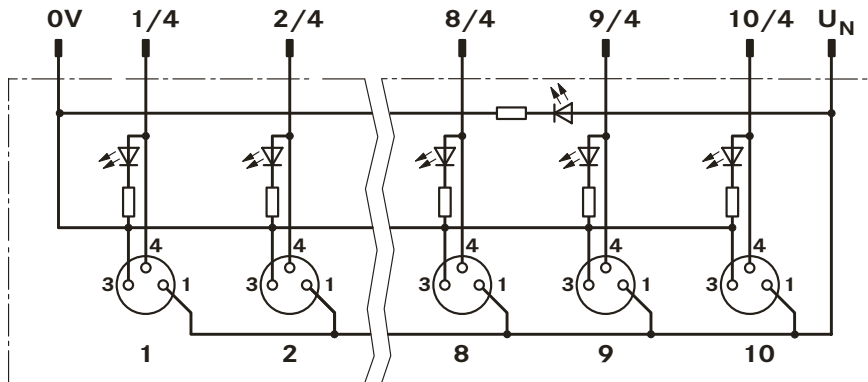
Valve connector according to EN 175301-803

Article number	Article designation	Nominal voltage U_N (V)	Nominal current I_N in (A)	Status display	Protective circuit	PU
Valve connector type A (18 mm)						
22260048	AB-C3-M16-A	230	10	Without	Without	1
22260050	AB-C3-PG9-A-1L-S	24	4	1 LED	Z diode	1
Valve connector type B (10 mm)						
22260051	AB-C3-PG9-B-1L-S	24	4	1 LED	Z diode	1
Valve connector type BI (11 mm)						
22260052	AB-C3-PG9-BI-1L-S	24	4	1 LED	Z diode	1
Valve connector type C (8 mm)						
22260142	AB-C3-PG9-C-1L-SV	24	1.5	1 LED	Varistor	1
Valve connector type CI (9.4 mm)						
22260143	AB-C3-PG9-CI-1L-SV	24	1.5	1 LED	Varistor	1
Valve connector for pressure switch (18 mm)						
22260049	AB-C5-M16-AD-2L	24	1.5	2 LEDs	Without	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to the data sheet (www.lappautomation.com) For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

S/A box with M8 slots and master cable



S/A box with M8 slots and master cable

Benefits

- Inexpensive and efficient wiring of sensors and actuators
- Instead of numerous individual conductors, one master cable is laid to the control unit
- The master cable is designed as a hybrid that transmits signals and power.
- There are no assembly costs as the master cable is already pre-assembled

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- With fixed master cable connection
- Single-occupied sensor/actuator box
- LEDs indicate the operating mode of the distributor and the status of the sensors
- Free of substances that could hinder paint or varnish

Approvals



Design

- PUR/PVC cable
- Fixed flexible control cable
- Outer sheath colour: black

Suitable tools

- Suitable tools are available upon request (e.g. M8 torque screwdriver)

Technical data

IP	Protection rating IP65/IP67
0	Ambient temperature (operation) -30 °C to +80 °C Cable, fixed installation -40 °C to +90 °C Cable, flexible installation -5 °C to 80 °C
Amp.	Current rating per slot 2 A

Article number	Article designation	Length (m)	Number of slots	Nominal voltage U _N (V)	SACB total current (A)	Status display	PU
With M8 master cable connection							
22260026	AB-B4-M8L-4-5,0PUR	5.0	4	24	6	With LEDs	1
22260027	AB-B4-M8L-4-10,0PUR	10.0	4	24	6	With LEDs	1
22260028	AB-B6-M8L-6-5,0PUR	5.0	6	24	6	With LEDs	1
22260029	AB-B6-M8L-6-10,0PUR	10.0	6	24	6	With LEDs	1
22260030	AB-B8-M8L-8-5,0PUR	5.0	8	24	6	With LEDs	1
22260031	AB-B8-M8L-8-10,0PUR	10.0	8	24	6	With LEDs	1
22260032	AB-B10-M8L-10-5,0PUR	5.0	10	24	6	With LEDs	1
22260033	AB-B10-M8L-10-10,0PUR	10.0	10	24	6	With LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: inclusive of copper. Refer to Appendix T 17 for the definition and calculation of copper-related surcharges.

Photographs are not to scale and do not represent detailed images of the respective products.

For the UNITRONIC® field bus type code, please see table T6

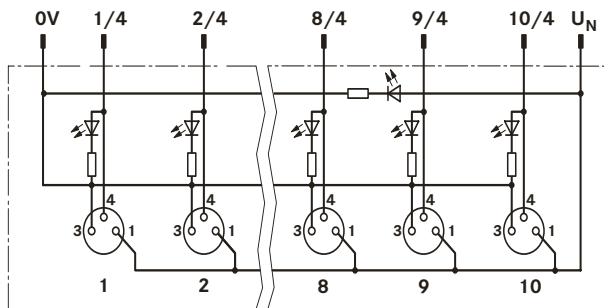
Unused female connectors must be covered with protective caps (see accessories)

For detailed technical information please refer to the data sheet (www.lappautomation.com)

Accessories

- Screw plug for unoccupied sockets refer to page 376

S/A box, M8 slots and master cable connection M16/M12



S/A box, M8 slots and master cable connection M16/M12

Benefits

- Inexpensive and efficient wiring of sensors and actuators
- Instead of numerous individual conductors, one master cable is laid to the control unit
- The detachable screw connection ensures universal pluggability and simple on-site assembly

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- With M12/M16 plug-in connection
- Single-occupied sensor/actuator box
- LEDs indicate the operating mode of the distributor and the status of the sensors
- Free of substances that could hinder paint or varnish

Approvals



Suitable cables

- M16 socket with connected master cable Page 374
- M12 socket with connected master cable Page 375

Suitable tools

- Suitable tools are available upon request (e.g. M8 torque screwdriver)

Technical data

IP	Protection rating IP65/IP67
	Ambient temperature (operation) -30°C to +80°C
Amp.	Current rating per slot 2 A

Article number	Article designation	Number of slots	Nominal voltage U _n (V)	SACB total current (A)	Status display	PU
With M16, 8-pin master cable connection						
22260034	AB-B4-M8L-4-M16	4	24	6	With LEDs	1
With M16, 10-pin master cable connection						
22260035	AB-B6-M8L-6-M16	6	24	6	With LEDs	1
With M16, 12-pin master cable connection						
22260036	AB-B8-M8L-8-M16	8	24	6	With LEDs	1
With M16, 14-pin master cable connection						
22260037	AB-B10-M8L-10-M16	10	24	6	With LEDs	1
With M12, 8-pin master cable connection						
22260038	AB-B4-M8L-4-M12	4	24	4	With LEDs	1
22260039	AB-B6-M8L-6-M12	6	24	4	With LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

For the UNITRONIC® field bus type code, please see table T6

Unused female connectors must be covered with protective caps (see accessories)

For detailed technical information please refer to the data sheet (www.lappautomation.com)

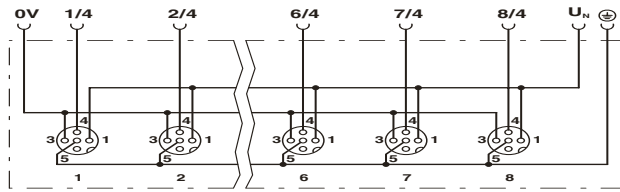
Accessories

- Screw plug for unoccupied sockets refer to page 376

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

S/A box with M 12 slots and master cable



S/A box with M 12 slots and master cable

Benefits

- Inexpensive and efficient wiring of sensors and actuators
- Instead of numerous individual conductors, one master cable is laid to the control unit
- The master cable is designed as a hybrid that transmits signals and power.
- There are no assembly costs as the master cable is already pre-assembled

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- With fixed master cable connection
- Single or double-occupied sensor/actuator box
- With M12 quick-locking system, metal thread
- With LED diagnostic indicator
- Free of substances that could hinder paint or varnish

Approvals



Design

- PUR/PVC cable
- Fixed flexible control cable
- Outer sheath colour: black

Suitable tools

- Suitable tools are available upon request (e.g. M12 torque screwdriver)

Technical data

IP	Protection rating IP65 / IP67 / IP69K
Amp.	Max. current rating per path 2 A
Amp.	Current rating per slot 4 A

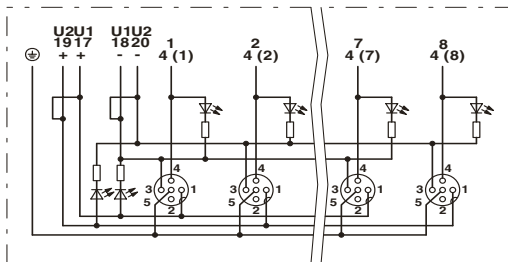
Article number	Article designation	Length (m)	Number of slots	Nominal voltage U _N (V)	SACB total current (A)	Status display	PU
Single-occupied boxes, without LEDs							
22260010	AB-B4-M12-4-5,0PUR	5.0	4	120	12	no	1
22260011	AB-B4-M12-4-10,0PUR	10.0	4	120	12	no	1
22260014	AB-B8-M12-8-5,0PUR	5.0	8	120	12	no	1
22260015	AB-B8-M12-8-10,0PUR	10.0	8	120	12	no	1
Single occupied boxes, with LEDs							
22260018	AB-B4-M12L-4-5,0PUR	5.0	4	24	12	With LEDs	1
22260019	AB-B4-M12L-4-10,0PUR	10.0	4	24	12	With LEDs	1
22260970	AB-B6-M12L-6-5,0PUR	5.0	6	24	12	With LEDs	1
22260022	AB-B8-M12L-8-5,0PUR	5.0	8	24	12	With LEDs	1
22260023	AB-B8-M12L-8-10,0PUR	10.0	8	24	12	With LEDs	1
Double-occupied boxes, without LEDs							
22260012	AB-B4-M12-8-5,0PUR	5.0	4	120	12	no	1
22260013	AB-B4-M12-8-10,0PUR	10.0	4	120	12	no	1
22260016	AB-B8-M12-16-5,0PUR	5.0	8	120	12	no	1
22260017	AB-B8-M12-16-10,0PUR	10.0	8	120	12	no	1
Double-occupied boxes, with LEDs							
22260020	AB-B4-M12L-8-5,0PUR	5.0	4	24	12	With LEDs	1
22260021	AB-B4-M12L-8-10,0PUR	10.0	4	24	12	With LEDs	1
22260024	AB-B8-M12L-16-5,0PUR	5.0	8	24	12	With LEDs	1
22260025	AB-B8-M12L-16-10,0PUR	10.0	8	24	12	With LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Photographs are not to scale and do not represent detailed images of the respective products.
 Unused female connectors must be covered with protective caps (see accessories)
 For detailed technical information please refer to the data sheet (www.lappautomation.com). For the type code, please refer to table T6.
 UL approvals can be found in the data sheet (www.lappautomation.com)

Accessories

- Screw plug for unoccupied sockets refer to page 376

S/A box with M12 slots and master cable connection



Info

• For individual master cable assembly

S/A box with M12 slots and master cable connection

Benefits

- Inexpensive and efficient wiring of sensors and actuators
- Instead of numerous individual conductors, one master cable is laid to the control unit
- The detachable screw connection ensures universal pluggability and simple on-site assembly

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- With detachable screw connection
- Single or double-occupied sensor/actuator box
- With M12 quick-locking system, metal thread
- With LED diagnostic indicator
- Free of substances that could hinder paint or varnish

Approvals



Suitable cables

- UNITRONIC® SENSOR master cable bulk stock Page 373

Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 976
- Suitable tools are available upon request (e.g. M12 torque screwdriver)

Technical data

IP	Protection rating IP65/IP67/IP69K
	Ambient temperature (operation) -30°C to +80°C
Amp.	Max. current rating per path 2 A
Amp.	Current rating per slot 4 A

Article number	Article designation	Number of slots	Nominal voltage U _N (V)	SACB total current (A)	Status display	PU
Single-occupied boxes, without LEDs, 4 slots, 1.)						
22260005	AB-B4-M12-4-C	4	120	10	no	1
Single-occupied boxes, without LEDs, 8 slots, 2.)						
22260007	AB-B8-M12-8-C	8	120	10	no	1
Single-occupied boxes, with LEDs, 4 slots, 1.)						
22260001	AB-B4-M12L-4-C	4	24	10	With LEDs	1
Single-occupied boxes, with LEDs, 8 slots, 2.)						
22260003	AB-B8-M12L-8-C	8	24	10	With LEDs	1
Double-occupied boxes, without LEDs, 4 slots, 2.)						
22260006	AB-B4-M12-8-C	4	120	10	no	1
Double-occupied boxes, without LEDs, 8 slots, 3.)						
22260008	AB-B8-M12-16-C	8	120	10	no	1
Double-occupied boxes, with LEDs, 4 slots, 2.)						
22260002	AB-B4-M12L-8-C	4	24	10	With LEDs	1
Double-occupied boxes, with LEDs, 8 slots, 3.)						
22260004	AB-B8-M12L-16-C	8	24	10	With LEDs	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. Unused female connectors must be covered with protective caps (see accessories) For detailed technical information please refer to the data sheet (www.lappautomation.com). For the type code, please refer to table T6. 1.) Compatible master cable: 7038880; 2) Compatible master cable: 7038881; 3.) Compatible master cable: 7038882

Accessories

- Screw plug for unoccupied sockets refer to page 376
- Complete connection hood with 4, 6 or 8 slots refer to page 376

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

New

UNITRONIC® SENSOR master cable bulk stock



Info

- Customised construction can be supported

Benefits

- Inexpensive and efficient wiring for S/A boxes with detachable master cable connection
- Can be used universally for S/A installations

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- Cores for Power Supply: 3 x 0.75 mm² and 3 x 1.0 mm²
- Cores for Signalling cable: 4 x 0.34 mm², 8 x 0.5 mm², 16 x 0.5 mm²
- Suitable for drag chains
- Halogen-free

Design

- UNITRONIC® SENSOR Li9Y11 COMBI
Conductor: bare copper strand, single wire diameter: 0.1 mm for 0.34 mm², 0.18 mm for 0.5 mm², 0.205 mm for 0.75 mm², 0.15 mm for 1.0 mm². Core insulation: halogen-free PP, outer sheath: halogen-free PUR acc. to DIN VDE 0250 part 818.
- Outer sheath colour: black (similar to RAL 9005)
Core colors: see data sheet
- AWM UL Style 21198, 80°C / 300V

Article number	Article designation	Dimensions (mm ²)	Outer diameter (mm)	Core/outer sheath material	Colour	Copper index (kg/km)
UNITRONIC® SENSOR COMBI						
7038880	Li9Y11Y	3 x 0.75 + 4 x 0.34	6.6	PP/PUR	black	34.5
7038881	Li9Y11Y	3 x 1.0 + 8 x 0.5	8.4	PP/PUR	black	67.2
7038882	Li9Y11Y	3 x 1.0 + 16 x 0.5	9.8	PP/PUR	black	105.6

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Packaging size: Coil 100m
 Cables are printed
 Other variations are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)

Accessories

- S/A box with M12 slots and master cable connection refer to page 372

ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

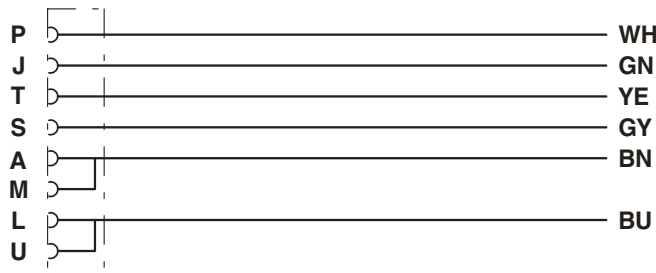
SILVYN®

FLEXIMARK®

ACCESSORIES

APPENDIX

M 16 socket with connected master cable



M 16 socket with connected master cable

Benefits

- Connecting cable for M8 boxes with 4 to 10 slots
- M 16 connection

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- Angled socket with M 16 thread
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- PUR/PVC cable
- Fixed flexible control cable
- Outer sheath colour: black
- Core cross-section for power supply: 0.75 mm²
- Core cross-section for signalling cable: 0.34 mm²

Technical data

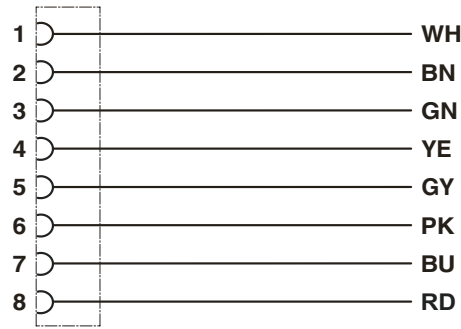
IP	Protection rating IP 67
0+T	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +90°C Cable, flexible installation -5°C to 80°C
	Contact material CuZn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Nickel-plated brass
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _n (V)	Nominal current I _n in (A)	PU
8 pole angled socket, 4 signalling cables, 2 power supply cables					
22260607	AB-C8- 5,0PUR-M 16FA	5	125	4	1
22260608	AB-C8-10,0PUR-M 16FA	10	125	4	1
10-pin angled-socket, 6 signalling cables, 2 power supply cables					
22260609	AB-C10- 5,0PUR-M 16FA	5	125	4	1
22260610	AB-C10-10,0PUR-M 16FA	10	125	4	1
12-pin angled socket, 8 signalling cables, 2 power supply cables					
22260611	AB-C12- 5,0PUR-M 16FA	5	125	4	1
22260612	AB-C12-10,0PUR-M 16FA	10	125	4	1
14-pin angled socket, 10 signalling cables, 2 power supply cables					
22260613	AB-C14- 5,0PUR-M 16FA	5	125	4	1
22260614	AB-C14-10,0PUR-M 16FA	10	125	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

M 12 socket with connected master cable



M 12 socket with connected master cable

Benefits

- Connecting cable for M8 boxes with 4 to 6 slots
- M 12 connection

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- Angled socket with M 12 thread
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- PUR/PVC cable
- Fixed flexible control cable
- Outer sheath colour: black
- Core cross section: 0.25 mm²

Technical data

IP	Protection rating IP65/IP68/IP69K
0/1	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuZn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	PU
8 pole angled socket					
22260615	AB-C8-5,0PUR-M12FA	5	30	2	1
22260616	AB-C8-10,0PUR-M12FA	10	30	2	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T 17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T 6

Screw plug for unoccupied sockets



Screw plug for unoccupied sockets

Benefits

- Protective cap for unused M8/M12 slots
- Protective cap for unused connectors (e.g. S/A boxes)

Application range

- Automation technology

- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- Free of substances that could hinder paint or varnish

Approvals



Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 976

Article number	Article designation	PU
M8		
22260606	AB-B-M8-PC	10
M12		
22260605	AB-B-M12-PC	10

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to the data sheet (www.lappautomation.com)

Complete connection hood with 4, 6 or 8 slots



Complete connection hood with 4, 6 or 8 slots

Benefits

- Pluggable screw connection as accessory for S/A box with detachable master cable connection
- The detachable screw connection ensures universal pluggability and simple on-site assembly

Application range

- Automation technology

- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- Accessory for S/A box with detachable master cable connection
- With detachable screw connection

Approvals



Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 976

Article number	Article designation	PU
Accessories		
22260009	AB-B-HC	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to the data sheet (www.lappautomation.com)

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

Field mountable S/A connectors M12



Field mountable S/A connectors M12

Benefits

- Quick and easy on-site assembly
- Creating individual cable lengths
- Standardised interfaces
- No special tools required for connecting the cables (fast-connect designs)

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4, 5 and 8-pin version
- Screened and non-screened version
- Fast-connect and screw connection design
- Free of substances that could hinder paint or varnish

Approvals



Suitable cables

- Cable for sensor / actuator components
Page

Technical data



Protection rating
IP 65/IP 67 (IDC)
IP 67 (screw)



Ambient temperature (operation)
Plug/socket
-25 °C to +80 °C (IDC)
-25 °C to +85 °C (piercing)
-40 °C to +85 °C (screw)

Contact material
CuZn

Contact surface material
CuSnZn

Coding
A - Standard

Article number	Article designation	Number of pins	Min. conductor cross-section, flexible, in mm ²	Max. conductor cross-section, flexible, in mm ²	Min. cable diameter (mm)	Max. cable diameter (mm)	Nominal voltage U _N (V)	Nominal current I _N in (A)	PU
Straight connector, fast-connect (insulation displacement)									
22260132	AB-C4-M12MS-F0,34	4	0.14	0.34	3.5	6	125	4	1
22260134	AB-C4-M12MS-F0,75	4	0.34	0.75	4	8	250	4	1
Straight connector, screw connection									
22260649	AB-C4-M12MS-PG7	4	0.25	0.75	4	6	250	4	1
22260995	AB-C4-M12MS-PG9	4	0.25	0.75	6	8	250	4	1
22260129	AB-C5-M12MS-PG7	5	0.25	0.75	4	6	60	4	1
22260651	AB-C5-M12MS-PG9	5	0.25	0.75	6	8	60	4	1
22260996	AB-C5-M12MS-PG9-SKINTOP®	5	0.25	0.75	6	8	125	4	1
Straight socket, fast-connect (insulation displacement)									
22260131	AB-C4-M12FS-F0,34	4	0.14	0.34	3.5	6	125	4	1
22260133	AB-C4-M12FS-F0,75	4	0.34	0.75	4	8	250	4	1
Straight socket, screw connection									
22260640	AB-C4-M12FS-PG7	4	0.25	0.75	4	6	250	4	1
22260641	AB-C4-M12FS-PG9	4	0.25	0.75	6	8	250	4	1
22260127	AB-C5-M12FS-PG7	5	0.25	0.75	4	6	60	4	1
22260644	AB-C5-M12FS-PG9	5	0.25	0.75	6	8	60	4	1
22260997	AB-C5-M12FS-PG9-SKINTOP®	5	0.25	0.75	6	8	125	4	1
Angled connector, screw connection									
22260647	AB-C4-M12MA-PG7	4	0.25	0.75	4	6	250	4	1
22260130	AB-C5-M12MA-PG7	5	0.25	0.75	4	6	60	4	1
22260648	AB-C5-M12MA-PG9	5	0.25	0.75	6	8	60	4	1
Angled socket, screw connection									
22260636	AB-C4-M12FA-PG7	4	0.25	0.75	4	6	250	4	1
22260128	AB-C5-M12FA-PG7	5	0.25	0.75	4	6	60	4	1
22260638	AB-C5-M12FA-PG9	5	0.25	0.75	6	8	60	4	1
Straight connector, shielded, screw connection									
22260135	AB-C5-M12MS-PG9-SH	5	0.25	0.75	6	8	60	4	1
22260825	AB-C8-M12MS-PG9-SH	8	0.25	0.75	6	8	30	2	1
Straight socket, shielded, screw connection									
22260136	AB-C5-M12FS-PG9-SH	5	0.25	0.75	6	8	60	4	1
22260826	AB-C8-M12FS-PG9-SH	8	0.25	0.75	6	8	30	2	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet (www.lappautomation.com)

IDC = insulation displacement connector

For the UNITRONIC® field bus type code, please see table T6

New

Field mountable S/A connectors M8



Field mountable S/A connectors M8

Benefits

- Quick and easy on-site assembly
- Creating individual cable lengths
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 3 and 4-pin version
- Fast-connect and screw connection design
- Free of substances that could hinder paint or varnish

Approvals



Suitable cables

- Cable for sensor / actuator components
Page

Technical data

IP Protection rating
IP 65 / IP 67 (IDC)
IP 68 (piercing)
IP 67 (screw)

0+1 Ambient temperature (operation)
Plug/socket
-25°C to +80°C (IDC)
-25°C to +85°C (piercing)
-40°C to +85°C (screw)

Contact material
CuZn

Contact surface material
Au

Coding
A - Standard

Article number	Article designation	Number of pins	Min. conductor cross-section, flexible, in mm ²	Max. conductor cross-section, flexible, in mm ²	Min. cable diameter (mm)	Max. cable diameter (mm)	Nominal voltage U _N (V)	Nominal current I _N in (A)	PU
Straight connector, fast-connect (insulation displacement)									
22260993	AB-C3-M8MS-F0,25	3	0.08	0.25	2.5	5	60	4	1
22260985	AB-C3-M8MS-F0,5	3	0.25	0.5	2.5	5	60	4	1
22260043	AB-C4-M8MS-F0,25	4	0.08	0.25	2.5	5	30	4	1
22260044	AB-C4-M8MS-F0,5	4	0.25	0.5	2.5	5	30	4	1
Straight connector, fast-connect (piercing)									
22260122	AB-C3-M8MS-P	3	0.14	0.38	3	5	60	4	1
22260123	AB-C4-M8MS-P	4	0.14	0.38	3	5	30	4	1
Straight connector, screw connection									
22260120	AB-C3-M8MS	3	0.14	0.5	3.5	5	60	4	1
22260121	AB-C4-M8MS	4	0.14	0.5	3.5	5	30	4	1
Straight socket, fast-connect (insulation displacement)									
22260994	AB-C3-M8FS-F0,25	3	0.08	0.25	2.5	5	60	4	1
22260986	AB-C3-M8FS-F0,5	3	0.25	0.5	2.5	5	60	4	1
22260045	AB-C4-M8FS-F0,25	4	0.08	0.25	2.5	5	30	4	1
22260046	AB-C4-M8FS-F0,5	4	0.25	0.5	2.5	5	30	4	1
Straight socket, fast-connect (piercing)									
22260124	AB-C3-M8FS-P	3	0.14	0.38	3	5	60	4	1
22260119	AB-C4-M8FS-P	4	0.14	0.38	3	5	30	4	1
Straight socket, screw connection									
22260125	AB-C3-M8FS	3	0.14	0.5	3.5	5	60	4	1
22260126	AB-C4-M8FS	4	0.14	0.5	3.5	5	30	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet (www.lappautomation.com)

IDC = insulation displacement connector

For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

UNITRONIC® SENSOR



■ Application range

- Cables for UNITRONIC® field bus sensor/actuator wiring
- Data transmission cable to connect to M8, M12 connectors
- Automation technology
- Mechanical engineering
- Plant engineering

■ Product features

- Core colour code in accordance with DIN EN 50044
- 3 x 0.34 mm²
1= brown, 2= blue, 3= black
- 4x 0.34 mm²
1= brown, 2= white, 3= blue, 4= black
- 5 x 0.25 mm² or 0.34 mm²
1= brown, 2= white, 3= blue, 4= black, 5= grey
- 8x 0.25mm²
1= white, 2=brown, 3= green, 4= yellow, 5= grey, 6= pink, 7=blue, 8= red

■ Approvals



■ Design

- UNITRONIC® SENSOR LiFYF
Conductor: extra-fine bare copper strand in accordance with DIN VDE 0295 Class 6; core insulation: PVC, outer sheath: PVC
- UNITRONIC® SENSOR DESINA® LiFY11Y
Stranded bare copper conductor, super-fine. In accordance with VDE 0295 Class 6, special PVC insulation, cores twisted in layers, core identification in accordance with DESINA® (brown, white, blue, black). Outer sheath is made of special polyurethane-based compound; yellow colour in acc. to RAL 1021; flame retardant acc. to IEC 60332-1-2. Operating voltage= 48 V, Peak working voltage= 300 V.

- UNITRONIC® SENSOR FD LiFY11Y AWM UL Style 20549, 80 °C/300 V. Conductor: Cu strand, bare, extra-fine wire according to DIN VDE 0295 Class 6, core insulation: modified polypropylene (PP), outer sheath: halogen-free polyurethane (PUR), matt, adhesion-free
- UNITRONIC® SENSOR FD series cables are specially designed for use in power chains

Article number	Article designation	Dimensions (mm ²)	Outer diameter (mm)	Core/outer sheath material	Colour	Copper index (kg/km)
UNITRONIC® SENSOR						
7038859	S-LiFYF	3 x 0.34	4.8	PVC/PVC	black	9.8
7038860	S-LiFYF	4 x 0.34	4.8	PVC/PVC	black	13.1
0040434	DESINA	4 x 0.34	5.2	PVC/PUR	yellow (RAL 1021)	13.5
7038861	S-LiFY11Y	4 x 0.34	4.8	PVC/PUR	black	13.1
7038862	S-LiFY11Y	5 x 0.25	4.9	PVC/PUR	black	12.0
UNITRONIC® SENSOR FD						
7038864	LiFY11Y	3 x 0.34	4.6	PP/PUR	black	9.8
7038865	LiFY11Y	4 x 0.34	4.7	PP/PUR	black	13.0
7038866	LiFY11Y	5 x 0.34	5.1	PP/PUR	black	16.0
7038867	LiFY11Y	5 x 0.25	4.7	PP/PUR	black	12.0
7038868	LiFY11Y	8 x 0.25	5.9	PP/PUR	black	19.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Cables are printed

Other variations are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

■ Accessories

- Field mountable S/A connectors M12 refer to page 377
- Field mountable S/A connectors M8 refer to page 378
- STAR STRIP stripping tool refer to page 906
- SMARTSTRIP stripping tool refer to page 907

New

S/A M 12 flush-type connectors with M 16 fastening thread



S/A M 12 flush-type connectors with M 16 fastening thread

Benefits

- Flexible connection solutions for individual device concepts
- Simple installation in devices (e.g. cabinet)
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- M 12 panel feed-through with punched-on single litz wires
- Panel feed-through with M 16 fastening thread
- Front wall-mounting
- M 12 A-coded with quick-locking system
- Free of substances that could hinder paint or varnish
- Can be positioned

Approvals



Design

- Halogen-free PUR, single litz wires, l = 0.5 m
- 0,34 mm²

Technical data

IP	Protection rating IP 67
	Ambient temperature (operation) Plug/socket -25°C to +85°C
	Contact material CuZn
	Contact surface material Au
	Coding A - Standard

Article number	Article designation	Number of pins	Conductor cross-section (mm ²)	Nominal voltage U _N (V)	Nominal current I _N in (A)	PU
M 12 flush-type connector pin for front-mounting ¹⁾						
22260108	AB-C4-M12MS-M16-0,5	4	0.34	250	4	1
22260106	AB-C5-M12MS-M16-0,5	5	0.34	60	4	1
M 12 flush-type connector pin for front-mounting, can be positioned ¹⁾						
22260083	AB-C4-M12MS-M16-PO-0,5	4	0.34	250	4	1
22260084	AB-C5-M12MS-M16-PO-0,5	5	0.34	60	4	1
M 12 flush-type connector socket for front-mounting ¹⁾						
22260107	AB-C4-M12FS-M16-0,5	4	0.34	250	4	1
22260105	AB-C5-M12FS-M16-0,5	5	0.34	60	4	1
M 12 flush-type connector socket for front-mounting, can be positioned ¹⁾						
22260085	AB-C4-M12FS-M16-PO-0,5	4	0.34	250	4	1
22260086	AB-C5-M12FS-M16-PO-0,5	5	0.34	60	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6
 1.) with quick-locking system

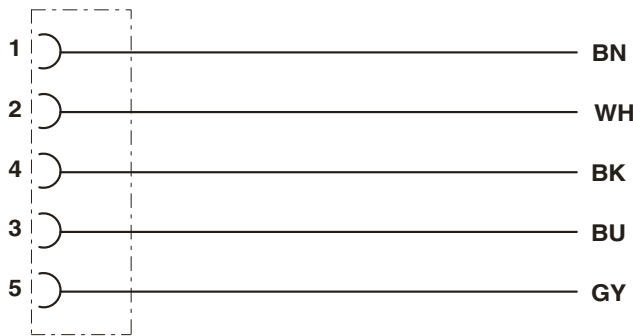
Accessories

- Fitting nut for flush-type connectors refer to page 382

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

S/A M 12 flush-type connectors with PG9 fastening thread



S/A M 12 flush-type connectors with PG9 fastening thread

Benefits

- Flexible connection solutions for individual device concepts
- Simple installation in devices (e.g. cabinet)
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- M12 panel feed-through with punched-on single litz wires
- Panel feed-through with PG9 fastening thread
- Designs for front and rear wall-mounting
- Free of substances that could hinder paint or varnish
- Can be positioned

Approvals



Design

- Halogen-free PUR, single litz wires, l = 0.5 m
- 0,34 mm²

Technical data

IP	Protection rating IP 67
0-1	Ambient temperature (operation) Plug/socket -25 °C to +85 °C
	Contact material CuZn
	Contact surface material Au
	Coding A - Standard

Article number	Article designation	Number of pins	Conductor cross-section (mm ²)	Nominal voltage U _N (V)	Nominal current I _N in (A)	PU
M 12 flush-type connector pin for rear-mounting (fitting nut included) ¹⁾						
22260117	AB-C4-DSI-M12MS-PG9-0,5	4	0.34	250	4	1
22260115	AB-C5-DSI-M12MS-PG9-0,5	5	0.34	60	4	1
M 12 flush-type connector socket for rear-mounting (fitting nut included) ¹⁾						
22260118	AB-C4-DSI-M12FS-PG9-0,5	4	0.34	250	4	1
22260116	AB-C5-DSI-M12FS-PG9-0,5	5	0.34	60	4	1
M 12 flush-type connector pin for front-mounting ¹⁾						
22260113	AB-C4-M12MS-PG9-0,5	4	0.34	250	4	1
22260112	AB-C5-M12MS-PG9-0,5	5	0.34	60	4	1
M 12 flush-type connector pin for front-mounting, can be positioned ¹⁾						
22260087	AB-C4-M12MS-PG9-PO-0,5	4	0.34	250	4	1
22260088	AB-C5-M12MS-PG9-PO-0,5	5	0.34	60	4	1
M 12 flush-type connector socket for front-mounting ¹⁾						
22260114	AB-C4-M12FS-PG9-0,5	4	0.34	250	4	1
22260111	AB-C5-M12FS-PG9-0,5	5	0.34	60	4	1
M 12 flush-type connector socket for front-mounting, can be positioned ¹⁾						
22260089	AB-C4-M12FS-PG9-PO-0,5	4	0.34	250	4	1
22260090	AB-C5-M12FS-PG9-PO-0,5	5	0.34	60	4	1

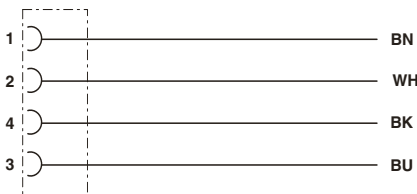
Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6
 1.) with quick-locking system

Accessories

- Fitting nut for flush-type connectors refer to page 382

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

S/A M8 flush-type connectors



S/A M8 flush-type connectors

Benefits

- Flexible connection solutions for individual device concepts
- Simple installation in devices (e.g. cabinet)
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- M8 panel feed-through with punched-on single litz wires
- Panel feed-through with M8 fastening thread
- Front wall-mounting
- Protection rating: IP65/IP67
- Free of substances that could hinder paint or varnish

Approvals



Technical data

IP Protection rating
IP 67

0+T Ambient temperature (operation)
Plug/socket
-25°C to +85°C

Contact material
Copper alloy

Contact surface material
Au

Coding
A - Standard

Design

- Halogen-free PUR, single litz wires, l = 0.5 m
- 0,25 mm²

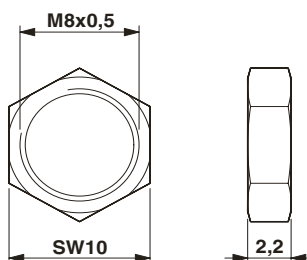
Article number	Article designation	Number of pins	Conductor cross-section (mm ²)	Nominal voltage U _N (V)	Nominal current I _N in (A)	PU
M8 flush-type connector pin for front-mounting						
22260100	AB-C3-M8MS-0,5	3	0.25	60	4	1
22260101	AB-C4-M8MS-0,5	4	0.25	30	4	1
M8 flush-type connector socket for front-mounting						
22260102	AB-C3-M8FS-0,5	3	0.25	60	4	1
22260103	AB-C4-M8FS-0,5	4	0.25	30	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to the data sheet (www.lappautomation.com) For the UNITRONIC® field bus type code, please see table T6

Accessories

- Fitting nut for flush-type connectors refer to page 382

Fitting nut for flush-type connectors



Fitting nut for flush-type connectors

Benefits

- Flat nut as accessory for flush-type connectors

Product features

- Material: nickel-plated brass

Approvals



Article number	Article designation	PU
M8 thread (M8 x 0.5 - SW10), h = 2.2 mm		
22260104	AB-C-M8-CN	100
PG9 thread (PG9 - SW18), h = 2.8 mm		
22260109	AB-C-PG9-CN	100
M16 thread (M16 x 1.5 - SW19), h = 2.8 mm		
22260110	AB-C-M16-CN	100
M12 thread, EMC version (M12x1-SW15), h=4.7 mm		
22261062	AB-C-M12-CN-SH	100

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to the data sheet (www.lappautomation.com)

Similar products

- SKINDICHT® SM refer to page 741

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

AS-Interface Modules (IP67)



Info

- With M12 quick-locking system, metal thread
- AS-Interface installation without tools



AS-Interface Modules (IP67)

Benefits

- Standardised interfaces
- For decentralised automation
- Space-saving due to compact dimensions
- Easy to install
- Fast and easy error tracking

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- AS-Interface module slave
- Integration of field bus activation and input/output level
- Digital inputs/outputs with M12 or M8 connection method for sensors/actuators
- Flat cable penetration technique as connection type for M12 module
- M12 connection type for M8 modules
- LED diagnostic and status indicators
- Short circuit/overload protection

Approvals



Suitable cables

- UNITRONIC® BUS ASI Page 300
- UNITRONIC® BUS ASI FD Page 301

Suitable tools

- Suitable tools are available upon request (e.g. M12 torque screwdriver)

Technical data

Fieldbus system
AS-Interface

Connection type
Flat cable penetration technique/M12 connection type

Installation
Panel mounting for M12/M8 modules
Top-hat rail (35 mm) for M12 modules

Number of pins
2

IP Protection rating
IP67

Protection class
III

0 Ambient temperature (operation)
-25 °C to +70 °C

Temperature (storage/transport)
-25 °C to +85 °C

Supply voltage
26.5 V DC PELV to 31.6 V DC PELV

Article number	Article designation	Connection systems (sensor/actuator)	Number of inputs	Number of outputs	Slave type	AS-i specification	Master specification	PU
With digital inputs/outputs, M8, total current: 4 A								
22260759	AB-ASI-M12-DI4DO4-M8-1A	2, 3-wire	4	4	Single-Slave	2	>= 2.0	1
With digital inputs/outputs, M12, total current: 4 A								
22260755	AB-ASI-DI2DO2-M12-2A	2, 3, 4-wire	2	2	A/B-Slave	2.1	>= 2.0	1
22260756	AB-ASI-DI4DO3-M12-2A	2, 3, 4-wire	4	3	A/B-Slave	2.1	>= 2.0	1
22260757	AB-ASI-DI4DO4-M12-2A	2, 3, 4-wire	4	4	A/B-Slave	3	>= 3.0	1
With digital inputs, M8								
22260758	AB-ASI-M12-DI4-M8	2, 3-wire	4		Single-Slave	2	>= 2.0	1
With digital inputs, M12								
22260753	AB-ASI-DI4-M12	2, 3, 4-wire	4		A/B-Slave	2.1	>= 2.0	1
With digital outputs, M12, total current: 4 A								
22260754	AB-ASI-DO4-M12-2A	2, 3-wire		4	Single-Slave	2	>= 2.0	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For the UNITRONIC® field bus type code, please see table T6. Unused female connectors must be covered with protective caps (see accessories). For detailed technical information please refer to the data sheet or installation instructions (www.lappautomation.com)

Accessories

- Powerkabel M12 refer to page 399
- AS-Interface Distributor refer to page 388
- AS-Interface power supply refer to page 389
- Screw plug for unoccupied sockets refer to page 376

AS-Interface Modules (IP30)



Info

- Fully industrialised



AS-Interface Modules (IP30)

Benefits

- Standardised interfaces
- For decentralised automation
- Space-saving due to compact dimensions
- Easy to install
- Fast and easy error tracking

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- AS-Interface module slave
- Integration of field bus activation and input/output level
- Metal housing
- Connection by optional screw-plug terminals or spring-plug terminals
- Digital inputs/outputs for connecting sensors/actuators
- LED diagnostic and status indicators
- Short circuit/overload protection

Approvals



Suitable cables

- UNITRONIC® BUS ASI Page 300
- UNITRONIC® BUS ASI FD Page 301

Technical data

Fieldbus system
AS-Interface



Dimensions W x H x D (mm)
105 mm x 22.5 mm x 85 mm

Connection type
Plug-in connection for screw-plug terminals or spring-plug terminals

Installation
Top-hat rail (35 mm)



Protection rating
IP30

Protection class
II



Ambient temperature (operation)
-25°C to +60°C

Temperature (storage/transport)
-40°C to +85°C

Permissible humidity (storage/transport)
max. 95 %, not condensing

Supply voltage
26.5 V DC to 31.6 V DC

Article number	Article designation	Connection systems (sensor/actuator)	Number of inputs	Number of outputs	Slave type	AS-i specification	Master specification	PU
4 outputs, 3A relay								
22260807	AB-ASI-DI4DOR4-3A	2, 3-wire	4	4	Single-Slave	3.01	>= 3.0	1
4 outputs 2A								
22260808	AB-ASI-DI4DO4-2A	2, 3-wire	4	4	Single-Slave	3.01	>= 3.0	1
8 Outputs 2A								
22260809	AB-ASI-DI8DO8-2A	2, 3-wire	8	8	Single-Slave	3.01	>= 3.0	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Plug terminals are not included, but can be purchased as an accessory.

Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet or installation instructions (www.lappautomation.com)

Other AS-Interface modules available on request

For the UNITRONIC® field bus type code, please see table T6

Accessories

- Powerkabel M12 refer to page 399
- AS-Interface Distributor refer to page 388
- AS-Interface counter module refer to page 389
- AS-Interface power supply refer to page 389
- AS-Interface network extension refer to page 390
- AS-Interface plug terminals refer to page 390



Info

- With M 12 quick-locking system, metal thread

PROFIBUS Modules



PROFIBUS Modules

Benefits

- Standardised interfaces
- For decentralised automation
- Space-saving due to compact dimensions
- Easy to install
- Fast and easy error tracking

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- PROFIBUS interface
- Integration of field bus activation and input/output level
- Connection to PROFIBUS DP using M 12 connectors (B-coded)
- Digital inputs/outputs with M 12 connection method for sensors/actuators
- LED diagnostic and status indicators
- Flexible power supply concept
- Short circuit/overload protection

Approvals



Suitable cables

- PROFIBUS cable: M 12 connector on free conductor end Page 391
- PROFIBUS Cable: M 12 connector M 12 on M 12 socket Page 392

Suitable tools

- Suitable tools are available upon request (e.g. M 12 torque screwdriver)

Technical data

Fieldbus system
PROFIBUS-DP

Transmission speed
12 MBit/s
Automatic baud rate detection

Transmission physics
PROFIBUS-DP-compliant copper cable

Space allocated for address
1 ... 99, can be set from front side

Connection type
2 M 12 plug connectors, B-coded

Installation
Panel mounting

Number of pins
5

IP Protection rating
IP65 /IP67 according to IEC 60529

Protection class
Class 3 as per VDE 0106, IEC 61440

Ambient temperature (operation)
-25 °C to +60 °C

Temperature (storage/transport)
-25 °C to +85 °C

Permissible humidity (storage/transport)
95 %

Transmission rate
9.64 Kbaud to 12 Mbaud automatic detection

Supply voltage
24V DC

Article number	Article designation	Connection systems (sensor/actuator)	Number of inputs	Number of outputs	Maximum output current per channel (A)	PU
With digital inputs/outputs						
22260740	AB-PB-DI4DO4-M12-2A	2, 3, 4-wire	4	4	2	1
22260762	AB-PB-DI8DO8-M12-0,5A	2, 3, 4-wire	8	8	0.5	1
With digital inputs						
22260738	AB-PB-DI8-M12	2, 3, 4-wire	8			1
22260739	AB-PB-DI16-M12	2, 3, 4-wire	16			1
With digital outputs						
22260742	AB-PB-DO8-M12-2A	2, 3-wire		8	2	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

For the UNITRONIC® field bus type code, please see table T6

Unused female connectors must be covered with protective caps (see accessories)

For detailed technical information please refer to the data sheet or installation instructions (www.lappautomation.com)

Accessories

- Powerkabel M 12 refer to page 399
- ETHERLINE® PROFIBUS DP Ethernet-Gateways refer to page [P125267]
- Screw plug for unoccupied sockets refer to page 376
- BUS M 12 connectors that can be assembled refer to page [P149575]
- Terminating resistor M 12 for DeviceNet/CANopen/PROFIBUS refer to page 396
- M 12 T distributor for PROFIBUS refer to page 397

DeviceNet Modules



Info

- With M 12 quick-locking system, metal thread

DeviceNet Modules

■ **Benefits**

- Standardised interfaces
- For decentralised automation
- Space-saving due to compact dimensions
- Easy to install
- Fast and easy error tracking

■ **Application range**

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

■ **Product features**

- DeviceNet Interface
- Integration of field bus activation and input/output level
- Connection to DeviceNet™ using M12 connectors (A-coded)
- Digital inputs/outputs with M12 connection method for sensors/actuators
- LED diagnostic and status indicators
- Flexible power supply concept
- Short circuit/overload protection

■ **Approvals**



■ **Suitable cables**

- DeviceNet/CANopen Cable, M12 connector on free conductor end Page 393
- S/A DeviceNet/CANopen cable, M12 connector on M12 socket Page 394

■ **Suitable tools**

- Suitable tools are available upon request (e.g. M12 torque screwdriver)

■ **Technical data**

Fieldbus system	DeviceNet
Transmission speed	125 kBit/s, 250 kBit/s, 500 kBit/s Automatic baud rate detection
Transmission physics	Copper cable in acc. with 176524 specification
Space allocated for address	0 ... 63, can be set
Connection type	2 M12 plug connectors, A-coded
Installation	Panel mounting
Number of pins	5
IP Protection rating	IP65/IP67
Protection class	Class 3 as per VDE 0106, IEC 61440
Ambient temperature (operation)	-25 °C to +60 °C
Temperature (storage/transport)	-25 °C to +85 °C
Permissible humidity (storage/transport)	95 %
Transmission rate	125 kBaud, 250 kBaud, 500 kBaud automatic detection
Supply voltage	24V DC

Article number	Article designation	Connection systems (sensor/actuator)	Number of inputs	Number of outputs	Maximum output current per channel (A)	PU
With digital inputs/outputs						
22260745	AB-DN-DI4DO4-M12-2A	2, 3, 4-wire	4	4	2.0	1
22260763	AB-DN-DI8DO8-M12-0,5A	2, 3, 4-wire	8	8	0.5	1
With digital inputs						
22260743	AB-DN-DI8-M12	2, 3, 4-wire	8			1
22260744	AB-DN-DI16-M12	2, 3, 4-wire	16			1
With digital outputs						
22260747	AB-DN-DO8-M12-2A	2, 3-wire		8	2.0	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 DeviceNet is a registered trademark of ODVA
 Photographs are not to scale and do not represent detailed images of the respective products.
 For the UNITRONIC® field bus type code, please see table T6
 Unused female connectors must be covered with protective caps (see accessories)
 For detailed technical information please refer to the data sheet or installation instructions (www.lappautomation.com)

■ **Accessories**

- Screw plug for unoccupied sockets refer to page 376
- Terminating resistor M12 for DeviceNet/CANopen/PROFIBUS refer to page 396
- S/A T-connector M12 as parallel distributor refer to page 398

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

CANopen Modules



CANopen Modules



Info

- With M12 quick-locking system, metal thread

Benefits

- Standardised interfaces
- For decentralised automation
- Space-saving due to compact dimensions
- Easy to install
- Fast and easy error tracking

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- CANopen Interface
- Integration of field bus activation and input/output level
- Connection to CANopen using M12 connectors (A-coded)
- Digital inputs/outputs with M12 connection method for sensors/actuators
- LED diagnostic and status indicators
- Flexible power supply concept
- Short circuit/overload protection

Approvals



Suitable cables

- DeviceNet/CANopen Cable, M12 connector on free conductor end Page 393
- S/A DeviceNet/CANopen cable, M12 connector on M12 socket Page 394

Suitable tools

- Suitable tools are available upon request (e.g. M12 torque screwdriver)

Suitable connectors

- EPIC® Data Connectors 330

Technical data

Fieldbus system
CANopen

Transmission speed
10, 20, 50, 125, 250, 500, 1000 kBit/s
Automatic baud rate detection

Transmission physics
Copper cable with optional power supply in acc. with CAN standard

Space allocated for address
1 ... 126, can be set

Connection type
2 M12 plug connectors, A-coded

Installation
Panel mounting

Number of pins
5

IP Protection rating
IP65/IP67

Protection class
Class 3 as per VDE 0106, IEC 61440

Temperature (operation)
-25 °C to +60 °C

Temperature (storage/transport)
-25 °C to +85 °C

Permissible humidity (storage/transport)
95 %

Transmission rate
Maximum 1 Mbaud automatic detection

Supply voltage
24V DC

Article number	Article designation	Connection systems (sensor/actuator)	Number of inputs	Number of outputs	PU
With digital inputs/outputs					
22260750	AB-CAN-DI4DO4-M12-2A	2, 3, 4-wire	4	4	1
22260764	AB-CAN-DI8DO8-M12-0,5A	2, 3, 4-wire	8	8	1
With digital inputs					
22260748	AB-CAN-DI8-M12	2, 3, 4-wire	8		1
22260749	AB-CAN-DI16-M12	2, 3, 4-wire	16		1
With digital outputs					
22260752	AB-CAN-DO8-M12-2A	2, 3-wire		8	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

For the UNITRONIC® field bus type code, please see table T6

Unused female connectors must be covered with protective caps (see accessories)

For detailed technical information please refer to the data sheet or installation instructions (www.lappautomation.com)

Accessories

- Screw plug for unoccupied sockets refer to page 376
- Terminating resistor M12 for DeviceNet/CANopen/PROFIBUS refer to page 396
- S/A T-connector M12 as parallel distributor refer to page 398

AS-Interface Distributor



AS-Interface Distributor



Info

- Adapter for data and power supply

Benefits

- Inexpensive and efficient wiring for AS-Interface installations
- Space-saving due to compact dimensions
- Easy to install
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- Passive AS-Interface distributor for 1 or 2 AS-Interface flat cables
- Distributor with integrated M12 socket (A-coded)
- H distributor for distribution from 1 to 2 flat cables
- Distributor with round cable and M12 socket (A-coded)
- Colour: black
- Rated current ≤ 4 A (H-distributor: $I \leq 8$ A)

Approvals



Design

- Fixed flexible control cable
- Design: $4 \times 0.34 \text{ mm}^2$ ($42 \times 0.1 \text{ mm}$)
- Core colours: brown, white, blue, black
- Outer sheath: PUR, halogen-free
- Outer sheath colour: black

Suitable cables

- UNITRONIC® BUS ASI Page 300
- UNITRONIC® BUS ASI FD Page 301

Technical data

Fieldbus system

AS-Interface

Connection type

Flat cable penetration technique

Installation

Panel mounting



Protection rating

IP 67
(H-distributor: IP69k)



Ambient temperature (operation)

-25°C to $+75^\circ\text{C}$

Article number	Article designation	PU
Distributor with 1 flat cable and integrated 2-pin M12 socket		
22260800	AB-ASI-J-Y-N-M12FS	1
Distributor with 2 flat cables and integrated 4-pin M12 socket		
22260801	AB-ASI-J-Y-B-M12FS	1
H distributor for distribution from 1 to 2 flat cables		
22260802	AB-ASI-J-Y-Y-N	1
Distributor with 1 flat cable, and 1 m PUR round cable to straight 2-pin M12 socket		
22260803	AB-ASI-J-Y-N-PUR-1,0-M12FS	1
Distributor with 1 flat cable, and 2 m PUR round cable to straight 2-pin M12 socket		
22260804	AB-ASI-J-Y-N-PUR-2,0-M12FS	1
Distributor with 2 flat cables, and 1 m PUR round cable to straight 4-pin M12 socket		
22260805	AB-ASI-J-Y-B-PUR-1,0-M12FS	1
Distributor with 2 flat cables, and 2 m PUR round cable to straight 4-pin M12 socket		
22260806	AB-ASI-J-Y-B-PUR-2,0-M12FS	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet (www.lappautomation.com)

For the UNITRONIC® field bus type code, please see table T6

AS-Interface counter module



Info

- Universal AS-Interface counter module



AS-Interface counter module

Benefits

- Standardised interfaces
- Easy to install
- Fast and easy assembly
- Compact AS-Interface counter module for counting events, distance and speed measurement

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- Set-point value of counter reading and pre-switching value can be parameterised via AS-Interface
- Output switching action selectable if preset value is reached
- Detect goods to be counted or measured with any 2 or 3-wire binary sensor
- AS-Interface Version 3.0
- Connection by optional screw-plug terminals or spring-plug terminals

Approvals



Technical data

Fieldbus system	AS-Interface
Connection type	Plug-in connection for screw-plug terminals or spring-plug terminals
Installation	Top-hat rail (35 mm)
IP	Protection rating IP 20
	Protection class II
0+T	Ambient temperature (operation) -25 °C to +60 °C

Article number	Article designation	PU
22260810	AB-ASI-C	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Plug terminals are not included, but can be purchased as an accessory. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to the data sheet or installation instructions (www.lappautomation.com)

Accessories

- AS-Interface power supply refer to page 389
- AS-Interface plug terminals refer to page 390

AS-Interface power supply



Info

- Fully industrialised



Benefits

- Compact AS-Interface power supply for mounting on top-hat rail
- Easy to install
- Space-saving due to compact dimensions
- For small AS-Interface networks

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Technical data

Fieldbus system	AS-Interface
Connection type	Cage clamp termination: 0.3 - 3.5 mm ²
Installation	Top-hat rail (35 mm)
IP	Protection rating IP 20
	Protection class II
0+T	Ambient temperature (operation) -10 °C to +60 °C
	Temperature (storage/transport) -25 °C to +85 °C

Product features

- Supplies a nominal output current of $I_N = 1.0 \text{ A}$
- Primary voltage range: 85 to 265 V AC (50/60 Hz)
- AS-Interface voltage: 29.5 to 31.6 V DC PELV (acc. to IEC61640)
- AS-Interface Specification 3.01
- Short circuit/overload protection

Approvals



Article number	Article designation	PU
22260812	AB-ASI-PS-1A	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. PELV ("protective extra low voltage" according to IEC61640) For detailed technical information please refer to the data sheet or installation instructions (www.lappautomation.com)

UNITRONIC® Fieldbus

Accessories for AS-Interface modules

AS-Interface network extension



Benefits

- Extension of AS-Interface network lengths without additional repeaters
- Every topology is possible
- Standardised interfaces
- Easy to install

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- AS-Interface network lengths of 100 m to 200 m without repeaters

- Under-voltage limit detection (threshold: app. 26.5 V) flashes if supply voltage is too low.
 - Alarm indication by flashing LED (Part: 22260813)
 - Alarm indication occurs remotely via the AS-Interface to the master (Part: 22260814)
- AS-Interface Specification 3.01
- Diameter: 20 mm; Height: 45 mm
- Can be screwed directly to AS-Interface distributor (see accessories)

Approvals



Design

- Compact design (Z plug)



Info

- With integrated under-voltage limit detection

Technical data

Fieldbus system
AS-Interface

Connection type
M12 A-coded connectors

Installation
Screw termination

Number of pins
4



Protection rating
IP 67



Ambient temperature (operation)
-25°C to +70°C

Article number	Article designation	PU
With optical voltage indication by green LED		
22260813	AB-ASI-NE200LED	1
With voltage control via response to the master (without LED)		
22260814	AB-ASI-NE200	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to the data sheet or installation instructions (www.lappautomation.com)

Accessories

- AS-Interface Distributor refer to page 388

AS-Interface plug terminals



Benefits

- Easy to assemble
- Fast-connect adapter terminals
- Enables individual use as tension or screw plug terminals
- Flexible connection solutions

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- Optional plug terminals for AS-Interface module IP20/IP30



Info

- Fully industrialised

- Fast-connect connection type
- 1 packing unit for 12, 16 or 32 contacts
- Black

Approvals



Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 976

Article number	Article designation	PU
AS-Interface screw plug terminals, 2 x 16-pin, 0.14-2.5 mm		
22260815	AB-ASI-XS16	1
AS-Interface screw plug terminals, 4 x 4-pin, 0.14-2.5 mm		
22260817	AB-ASI-XS4	1
AS-Interface screw plug terminals, 4 x 3-pin, 0.14-2.5 mm		
22260041	AB-ASI-XS3	1
AS-Interface tension plug terminals, 8 x 4-pin, 0.2-2.5 mm		
22260816	AB-ASI-XT16	1
AS-Interface tension plug terminals, 4 x 4-pin, 0.2-2.5 mm		
22260818	AB-ASI-XT4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to www.lappautomation.com

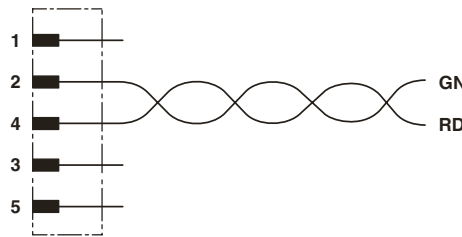
ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

PROFIBUS cable: M 12 connector on free conductor end

Info

- Pre-assembled PROFIBUS data network cable



PROFIBUS cable: M 12 connector on free conductor end

Benefits

- Inexpensive and efficient wiring for PROFIBUS installations
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 2-pole PROFIBUS cable, shielded
- 5-pin connector, M12 B-coded (inverse) with quick locking system
- Design: socket or plug to free conductor end
- The cables have marker carriers
- Suitable for drag chains

Approvals



Design

- Halogen-free PUR, screened cable
- Fixed flexible control cable
- Design: 19 x 0.13 mm
- Core colours: red, green
- Outer sheath colour: violet

Suitable connectors

- EPIC® Data connectors 312
- BUS M12 connectors that can be assembled [P149575]

Technical data

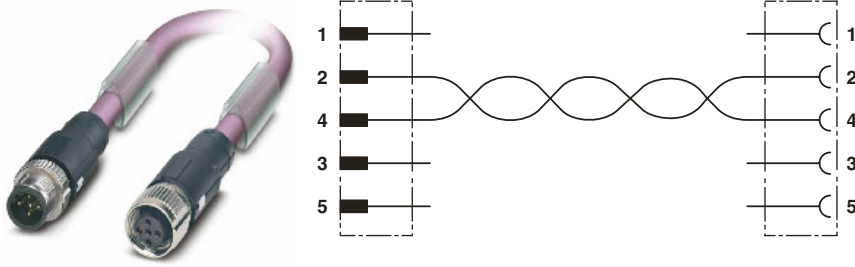
	Number of pins	2
	Protection rating	IP65/IP67/IP69K
	Ambient temperature (operation)	Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -20°C to +80°C
	Contact material	CuSn
	Contact surface material	Ni/Au
	Coding	B - inverse
	Knurl material	Zinc die-cast, nickel-plated
	Gripping body material	TPU, flame-retardant, self-extinguishing
	Core colour	red, green
	Outer cable diameter	7,8 mm
	Conductor cross-section	0,25 mm ²
	Outer sheath, colour	violet (RAL 4001)
	Outer sheath, material	PUR
	Shielding	Tinned-copper braiding

Article number	Article designation	Length (m)	Nominal current I _N in (A)	Nominal voltage U _N (V)	Number of pins	PU
Straight connector						
22260767	AB-PB-M12MS-2,0PUR	2	4	250	2	1
22260768	AB-PB-M12MS-5,0PUR	5	4	250	2	1
22260769	AB-PB-M12MS-10,0PUR	10	4	250	2	1
Straight socket						
22260770	AB-PB-2,0PUR-M12FS	2	4	250	2	1
22260771	AB-PB-5,0PUR-M12FS	5	4	250	2	1
22260772	AB-PB-10,0PUR-M12FS	10	4	250	2	1
Angled connector						
22260956	AB-PB-M12MA-2,0PUR	2	4	250	2	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Customised cable lengths are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.
For detailed technical information please refer to the data sheet (www.lappautomation.com)
For the UNITRONIC® field bus type code, please see table T6

New

PROFIBUS Cable: M 12 connector M 12 on M 12 socket



Info

- PROFIBUS data network cable, ready for connection

PROFIBUS Cable: M 12 connector M 12 on M 12 socket

Benefits

- Inexpensive and efficient wiring for PROFIBUS installations
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 2-pole PROFIBUS cable, shielded
- 5-pin connector, M 12 B-coded (inverse) with quick locking system
- Design: plug to socket
- The cables have marker carriers
- Suitable for drag chains

Approvals



Design

- Halogen-free PUR, screened cable
- Fixed flexible control cable
- Design: 19 x 0.13 mm
- Core colours: red, green
- Outer sheath colour: violet

Suitable connectors

- EPIC® Data PROFIBUS Connectors 90° M 12 323

Technical data

Number of pins
2



Protection rating
IP65/IP67/IP69K



Ambient temperature (operation)
Plug/socket
-25°C to +90°C
Cable, fixed installation
-40°C to +80°C
Cable, flexible installation
-20°C to +80°C

Contact material
CuSn

Contact surface material
Ni/Au

Coding
B - inverse

Knurl material
Zinc die-cast, nickel-plated

Gripping body material
TPU, flame-retardant, self-extinguishing

Core colour
red, green

Outer cable diameter
7,8 mm



Conductor cross-section
0,25 mm²

Outer sheath, colour
violet (RAL 4001)

Outer sheath, material
PUR

Shielding
Tinned-copper braiding

Article number	Article designation	Length (m)	Nominal current I _n (A)	Nominal voltage U _n (V)	Number of pins	PU
Straight connector to straight socket						
22260955	AB-PB-M12MS-0,2PUR-M12FS	0,2	4	250	2	1
22260773	AB-PB-M12MS-0,3PUR-M12FS	0,3	4	250	2	1
22260774	AB-PB-M12MS-1,0PUR-M12FS	1	4	250	2	1
22260775	AB-PB-M12MS-2,0PUR-M12FS	2	4	250	2	1
22260776	AB-PB-M12MS-5,0PUR-M12FS	5	4	250	2	1
22260777	AB-PB-M12MS-10,0PUR-M12FS	10	4	250	2	1
Angled plug to angled socket						
22260079	AB-PB-M12MA-5,0PUR-M12FA	5	4	250	2	1
22260904	AB-PB-M12MA-10,0PUR-M12FA	10	4	250	2	1
22260905	AB-PB-M12MA-15,0PUR-M12FA	15	4	250	2	1

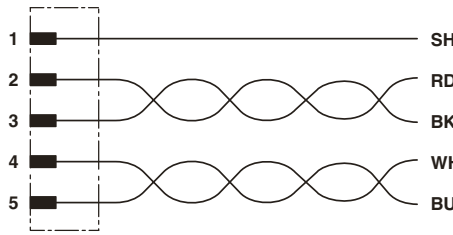
Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Customised cable lengths are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.
For detailed technical information please refer to the data sheet (www.lappautomation.com)
For the UNITRONIC® field bus type code, please see table T6

DeviceNet/CANopen Cable, M12 connector on free conductor end



Info

- Pre-assembled DeviceNet/CANopen data network cable



DeviceNet/CANopen Cable, M12 connector on free conductor end

Benefits

- Cost-effective and efficient wiring of field bus installations, sensors and actuators
- Space-saving due to compact dimensions
- Robust design
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 5-pin DeviceNet/CANopen cable, shielded
- M12 A-coded with quick-locking system
- Straight socket or straight plug to free conductor end
- The cables have marker carriers
- Suitable for drag chains

Approvals



Design

- Halogen-free PUR, screened cable
- Fixed flexible control cable
- Design (signal line): 19 x 0.12 mm
- Core colours: red-black, blue-white

Suitable connectors

- EPIC® Data Connectors 330
- Field mountable S/A connectors M12 377

Technical data

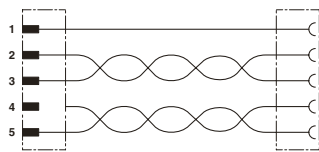
IP	Protection rating IP65/IP67/IP69K
0+T	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -40°C to +80°C Cable, flexible installation -20°C to +80°C
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing
	Outer cable diameter 6,7 mm
	Conductor cross-section 0,2 mm ²
	Outer sheath, colour violet (RAL 4001)
	Outer sheath, material PUR

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Number of pins	PU
5-pin straight connector						
22260789	AB-DN-M12MS-2,0PUR	2	60	4	5	1
22260790	AB-DN-M12MS-5,0PUR	5	60	4	5	1
22260791	AB-DN-M12MS-10,0PUR	10	60	4	5	1
5-pin straight socket						
22260792	AB-DN-2,0PUR-M12FS	2	60	4	5	1
22260793	AB-DN-5,0PUR-M12FS	5	60	4	5	1
22260794	AB-DN-10,0PUR-M12FS	10	60	4	5	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Customised cable lengths are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.
For detailed technical information please refer to the data sheet (www.lappautomation.com)
For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

S/A DeviceNet/CANopen cable, M 12 connector on M 12 socket



Info

- DeviceNet/CANopen data network cable, ready for connection

S/A DeviceNet/CANopen cable, M 12 connector on M 12 socket

Benefits

- Cost-effective and efficient wiring of field bus installations, sensors and actuators
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 5-pin DeviceNet/CANopen cable, shielded
- M 12 A-coded with quick-locking system
- Straight plug to straight socket
- The cables have marker carriers
- Suitable for drag chains

Approvals



Design

- Halogen-free PUR, screened cable
- Fixed flexible control cable
- Design (signal line): 19 x 0.12 mm
- Design (voltage line): 19 x 0.15 mm
- Core colours: red-black, blue-white

Technical data



Protection rating
IP65/IP67/IP69K



Ambient temperature (operation)
Plug/socket
-25°C to +90°C
Cable, fixed installation
-40°C to +80°C
Cable, flexible installation
-20°C to +75°C

Contact surface material
Ni/Au

Coding
A - Standard

Knurl material
Zinc die-cast, nickel-plated

Gripping body material
TPU, flame-retardant, self-extinguishing

Outer cable diameter
6,7 mm



Conductor cross-section
0,2 mm²

Outer sheath, colour
violet (RAL 4001)

Outer sheath, material
PUR

Article number	Article designation	Length (m)	Nominal voltage U _N (V)	Nominal current I _N in (A)	Number of pins	PU
Straight connector to straight socket						
22260795	AB-DN-M12MS-0,3PUR-M12FS	0,3	60	4	5	1
22260796	AB-DN-M12MS-1,0PUR-M12FS	1	60	4	5	1
22260797	AB-DN-M12MS-2,0PUR-M12FS	2	60	4	5	1
22260798	AB-DN-M12MS-5,0PUR-M12FS	5	60	4	5	1
22260799	AB-DN-M12MS-10,0PUR-M12FS	10	60	4	5	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 DeviceNet is a registered trademark of ODVA
 Customised cable lengths are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

BUS M 12 connectors that can be assembled



Info

- For
 - PROFIBUS
 - CANopen
 - DeviceNet
 - PROFINET
 - ETHERNET



BUS M 12 connectors that can be assembled

Benefits

- Quick and easy on-site assembly
- Creating individual cable lengths
- Inexpensive and efficient wiring for BUS installations
- Space-saving due to compact dimensions
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- Screened version
- For CANopen/DeviceNet applications (A-coded)
- For PROFIBUS applications (B-inverse coded)
- For PROFINET applications (D-coded)
- For Ethernet applications (D-coded)

Approvals



Suitable cables

- Cables for BUS-Systems PROFIBUS-DP/ FMS/FIP Page 302
- Cables for Bus-System CAN Page 329
- Cables for Bus-System DeviceNet Page 327
- PROFIBUS cable: M 12 connector on free conductor end Page 391
- ETHERLINE® 2-pairs CAT.5/5e Page [P327]

Technical data

Number of pins	5 (PROFIBUS/CANopen/DeviceNet) 4 (PROFINET/ETHERNET)
Protection rating	IP67
Ambient temperature (operation)	Plug/socket -40°C to +85°C
Contact material	CuSn
Contact surface material	Au (PROFIBUS/CANopen/DeviceNet) Ni/Au (PROFINET/ETHERNET)
Coding	A - CANopen/DeviceNet B - inverse (PROFIBUS) D - data (PROFINET/ETHERNET)
Knurl material	Nickel-plated brass
Gripping body material	Zinc die-cast, nickel-plated
Sealing material	NBR (PROFIBUS/CANopen/DeviceNet) Neoprene (PROFINET/ETHERNET)
Contact carrier material	PA 66
Nominal voltage U_N	60 V
Nominal current I_N	4 A (PROFIBUS/CANopen/DeviceNet) 1,75 A (PROFINET/ETHERNET)
PG screw connection	PG 9 (PROFIBUS/CANopen/DeviceNet)

Article number	Article designation	Min. conductor cross-section, flexible, in mm ²	Max. conductor cross-section, flexible, in mm ²	Min. conductor cross-section AWG/kcmil	Max. conductor cross-section AWG/kcmil	Min. cable diameter (mm)	Max. cable diameter (mm)	PU
PROFIBUS, 5-pin straight connector, screw connection								
22260653	AB-C5-M12MSB-PG9-SH-AU	0.25	0.75	24	18	6	8.5	1
PROFIBUS, 5-pin straight socket, screw connection								
22260646	AB-C5-M12FSB-PG9-SH-AU	0.25	0.75	24	18	6	8.5	1
PROFINET/ETHERNET, 4-pin straight connector, fast-connection								
22260820	AB-C4-M12MSD-SH	0.14	0.34	26	22	4	8	1
CANopen/DeviceNet, 5-pin straight connector, screw connection								
22260135	AB-C5-M12MS-PG9-SH	0.25	0.75	24	18	6	8	1
CANopen/DeviceNet, 5-pin straight socket, screw connection								
22260136	AB-C5-M12FS-PG9-SH	0.25	0.75	24	18	6	8	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
DeviceNet is a registered trademark of ODVA
Photographs are not to scale and do not represent detailed images of the respective products.

Terminating resistor M 12 for DeviceNet/CANopen/PROFIBUS



Info

- Fully industrialised

Terminating resistor M 12 for DeviceNet/CANopen/PROFIBUS

Benefits

- Inexpensive termination of BUS cables
- Space-saving due to compact dimensions
- Robust design
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- Free of substances that could hinder paint or varnish
- For DeviceNet und CANopen applications (A-Standard coded)
- For PROFIBUS applications (B-inverse coded)

Approvals



Design

- Straight connector M12 with integrated termination resistor

Technical data



Protection rating
IP65/IP67/IP69K



Ambient temperature (operation)
Plug/socket
-25°C to +90°C

Contact material
CuSn

Contact surface material
Ni/Au

Coding
B - inverse (PROFIBUS)
A - Standard (DeviceNet/CANopen)

Knurl material
Zinc die-cast, nickel-plated

Gripping body material
TPU, flame-retardant, self-extinguishing

Contact carrier material
TPU GF

Nominal voltage U_N
60 V

Nominal current I_N
4 A

Article number	Article designation	Nominal current I_N in (A)	Nominal voltage U_N (V)	Coding	Number of pins	PU
For PROFIBUS applications (B-inverse coded)						
22260722	AB-C4-M12MS-PB-TR	4	60	B - inverse	4	5
For DeviceNet und CANopen applications (A-Standard coded)						
22260766	AB-C5-M12MS-DN-TR	4	60	A - Standard	5	5

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

DeviceNet is a registered trademark of ODVA

Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet (www.lappautomation.com)

For the UNITRONIC® field bus type code, please see table T6

Accessories

- M 12 T distributor for PROFIBUS refer to page 397
- S/A T-connector M12 as parallel distributor refer to page 398

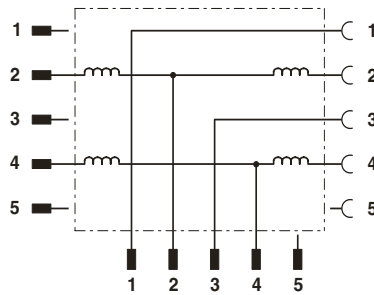
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

M12 T distributor for PROFIBUS



Info

- Fully industrialised



M12 T distributor for PROFIBUS

Benefits

- Inexpensive and efficient wiring for PROFIBUS installations
- Space-saving due to compact dimensions
- Robust design
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin PROFIBUS T-connector
- M12 B-coded (inverse)
- Screened version
- M12 plug to M12 plug and M12 socket
- Free of substances that could hinder paint or varnish

Approvals



Technical data

IP	Protection rating IP 67
0+T	Ambient temperature (operation) Plug/socket -25 °C to +80 °C
	Contact material Copper alloy
	Contact surface material Ni/Au
	Coding B - inverse
	Knurl material Nickel-plated brass
	Gripping body material PUR
	Sealing material VITON®
	Contact carrier material PUR
	Nominal voltage U_N 60 V
	Nominal current I_N 4 A

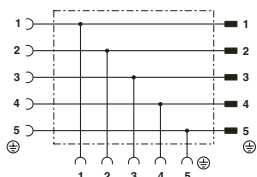
Article number	Article designation	Nominal current I _N in (A)	Nominal voltage U _N (V)	Number of pins	PU
22260761	AB-C2-M12T-2XM12FS PB	4	30	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products. For detailed technical information please refer to the data sheet (www.lappautomation.com) For the UNITRONIC® field bus type code, please see table T6

Accessories

- Terminating resistor M12 for DeviceNet/CANopen/PROFIBUS refer to page 396

S/A T-connector M 12 as parallel distributor



S/A T-connector M 12 as parallel distributor



Info

- For DeviceNet and CANopen!

Benefits

- Cost-effective and efficient wiring of field bus installations, sensors and actuators
- Space-saving due to compact dimensions
- Robust design
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 5-pin DeviceNet/CANopen T-Connector
- M12 A-coded
- Parallel distributor with M12 socket to M12 plug and M12 socket
- Free of substances that could hinder paint or varnish

Approvals



Technical data

	Number of pins
	5
	Protection rating IP65/IP67
	Ambient temperature (operation) Plug/socket -25°C to +90°C
	Contact material CuZn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing
	Sealing material NBR
	Contact carrier material TPU GF
	Nominal voltage U_N 60 V
	Nominal current I_N 4 A

Article number	Article designation	Nominal current I _N in (A)	Nominal voltage U _N (V)	Number of pins	PU
22260765	AB-C5-M12T-2XM12FS DN	4	60	5	5

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 DeviceNet is a registered trademark of ODVA
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to the data sheet (www.lappautomation.com)
 For the UNITRONIC® field bus type code, please see table T6

Accessories

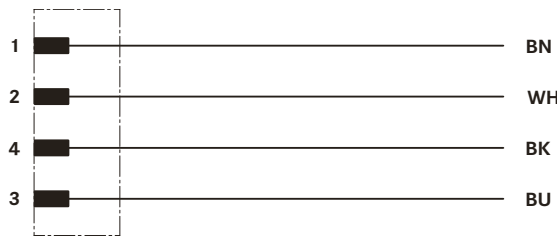
- Terminating resistor M 12 for DeviceNet/CANopen/PROFIBUS refer to page 396

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

Power cable: M12 connector on free conductor

Info

- All-purpose



Power cable: M12 connector on free conductor

Benefits

- Cost-effective and efficient wiring of field bus installations, sensors and actuators
- Space-saving due to compact dimensions
- Customise the construction on the free conductor end
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin power cable for field bus applications
- M12 A-coded with quick-locking system
- Straight plug or straight socket to free conductor end
- The cables have marker carriers
- Suitable for drag chains

Approvals



Design

- PUR outer sheath
- Fixed flexible control cable
- PVC core insulation
- Design: 4 x 0.75 mm² (42 x 0.15 mm)

Suitable connectors

- Field mountable S/A connectors M12 377

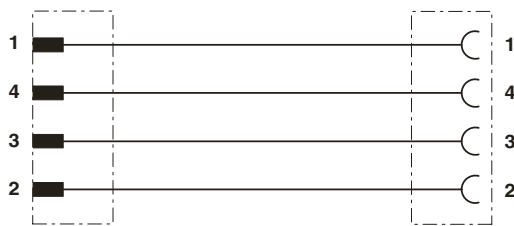
Technical data

IP	Protection rating IP65/IP67/IP69K
0	Ambient temperature (operation) Plug/socket -25°C to +90°C Cable, fixed installation -25°C to +80°C Cable, flexible installation -5°C to +80°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing
	Core colour brown, white, blue, black
	Outer cable diameter 5,9 mm
⊘	Conductor cross-section 0,75 mm ²
	Outer sheath, colour Black (RAL 9005)
	Outer sheath, material PUR

Article number	Article designation	Length (m)	Nominal current I _N in (A)	Nominal voltage U _N (V)	Number of pins	PU
4-pin straight connector						
22260778	AB-PC4-M12MS-2,0PUR	2	4	250	4	1
22260779	AB-PC4-M12MS-5,0PUR	5	4	250	4	1
22260783	AB-PC4-10,0PUR-M12FS	10	4	250	4	1
4-pin straight socket						
22260781	AB-PC4-2,0PUR-M12FS	2	4	250	4	1
22260782	AB-PC4-5,0PUR-M12FS	5	4	250	4	1
22260780	AB-PC4-M12MS-10,0PUR	10	4	250	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.
 For detailed technical information please refer to www.lappautomation.com
 For the UNITRONIC® field bus type code, please see table T6

Power cable: straight M12 connector on straight M12 socket



Info

- All-purpose

Power cable: straight M12 connector on straight M12 socket

Benefits

- Cost-effective and efficient wiring of field bus installations, sensors and actuators
- Space-saving due to compact dimensions
- Fast and easy assembly
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 4-pin power cable for field bus applications
- M12 A-coded with quick-locking system
- Straight plug to straight socket
- Free of substances that could hinder paint or varnish
- Suitable for drag chains

Approvals



Design

- PUR outer sheath
- Fixed flexible control cable
- PVC core insulation
- Design: 4 x 0.75 mm² (42 x 0.15 mm)

Technical data



Protection rating
IP65/IP67/IP69K



Ambient temperature (operation)
Plug/socket
-25°C to +90°C
Cable, fixed installation
-25°C to +80°C
Cable, flexible installation
-5°C to +80°C

Contact material
CuSn

Contact surface material
Ni/Au

Coding
A - Standard

Knurl material
Zinc die-cast, nickel-plated

Gripping body material
TPU, flame-retardant, self-extinguishing

Outer cable diameter
5,9 mm



Conductor cross-section
0,75 mm²

Outer sheath, colour
Black (RAL 9005)

Outer sheath, material
PUR

Article number	Article designation	Length (m)	Nominal current I _n in (A)	Nominal voltage U _N (V)	Number of pins	PU
Straight connector to straight socket						
22260784	AB-PC4-M12MS-0,3PUR-M12FS	0.3	4	250	4	1
22260785	AB-PC4-M12MS-1,0PUR-M12FS	1	4	250	4	1
22260786	AB-PC4-M12MS-2,0PUR-M12FS	2	4	250	4	1
22260787	AB-PC4-M12MS-5,0PUR-M12FS	5	4	250	4	1
22260788	AB-PC4-M12MS-10,0PUR-M12FS	10	4	250	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Customised cable lengths, outer-sheath materials (e.g. PVC), and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.
For detailed technical information please refer to the data sheet (www.lappautomation.com)
For the UNITRONIC® field bus type code, please see table T6

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

Coaxial - RG



Benefits

- Coaxial cables allow distortion-free and low-attenuation transmission of signals with a high bandwidth.
- High frequencies

Application range

- For applications with limited movements and for fixed installation in dry or damp interiors and outdoors
- For radio and computer systems, as well as all applications related to commercial radio-frequency technology and electronics

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



Design

- Coaxial cables are significantly less sensitive to external interference due to their structure.

Technical data

Dielectric constant

- Polyethylene (PE) 2.3
- Polyethylene, hollow (PE-ho) 1.5
- Polytetrafluoroethylene (PTFE) 2.1



Minimum bending radius

Fixed installation: 6 x outer diameter



Temperature range

Fixed installation: PE outer sheath:
-40°C to +80°C
Fixed installation: PVC outer sheath:
-40°C to +80°C
Fixed installation: fluoroplastic
-55°C to +250°C



Specifications and approvals

Similar to MIL C-17F

Article number	Article designation	Characteristic impedance in ohm	Capacity pF/m	Attenuation approx. dB/100 m at 200 MHz/400 MHz	Propagation rate (%)	Operating voltage 50 Hz eff. kV	Test voltage (kV)	Inner conductor material	Internal Ø	Dielectric material	Dielectric Ø	Outer conductor material	Outer cable sheath	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170000	RG-58 C/U	50 +/- 2 Ω	101	24 / 33	66	2.0	5.0	CuLivz	0.90	PE	2.95	Cvz	PVC	4.95	19.1	38
2170001	RG-174 A/U	50 +/- 2 Ω	101	40 / 59	66	1.5	2.0	StCuLibl	0.48	PE	1.52	Cvz	PVC	2.80	5.4	12
2170002	RG-178 B/U	50 +/- 2 Ω	95	63 / 93	70	0.7	2.0	StCuLivs	0.30	PTFE	0.86	Cvs	FEP	1.91	4.4	9
2170003	RG-188 A/U	50 +/- 2 Ω	95	47 / 56	70	1.5	2.0	StCuLivs	0.51	PTFE	1.52	Cvs	PTFE	2.76	8.3	17.5
2170005	RG-213 /U	50 +/- 2 Ω	101	10 / 15	66	5.0	10.0	CuLibl	2.25	PE	7.25	Cbl	PVC	10.30	75.8	157
2170006	RG-214 /U	50 +/- 2 Ω	101	9 / 14	66	5.0	10.0	CuLivs	2.25	PE	7.25	CvsCvs	PVC	10.80	117.8	207
2170007	RG-223 /U	50 +/- 2 Ω	101	23 / 34	66	2.0	3.0	CuMvs	0.89	PE	2.95	CvsCvs	PVC	5.50	38.5	60
2170016	RG-6 A/U	75 +/- 3 Ω	67	14 / 20	66	2.0	5.0	StCuMbl	0.72	PE	4.70	Cbl	PVC	8.40	72.0	120
2170009	RG-11 A/U	75 +/- 3 Ω	67	11 / 16	66	5.0	10.0	CuLivz	1.20	PE	7.30	Cbl	PVC	10.30	55.5	140
2170011	RG-11 A/U outdoor	75 +/- 3 Ω	67	11 / 16	66	5.0	10.0	CuLivz	1.20	PE	7.30	Cbl	PVC	12.10	55.5	170
2170012	RG-59 B/U	75 +/- 3 Ω	67	16.5 / 23	66	1.7	7.0	StCuMbl	0.60	PE	3.70	Cbl	PVC	6.15	25.0	57
2170010	RG-187 A/U	75 +/- 3 Ω	65	47 / 56	70	1.5	2.0	StCuLivs	0.31	PTFE	1.52	Cvs	PTFE	2.80	7.3	17
2170008	RG-62 A/U	93 +/- 5 Ω	43	15 / 19	75	0.8	2.0	StCuMbl	0.65	PE hollow	3.70	Cbl	PVC	6.15	24.0	52

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

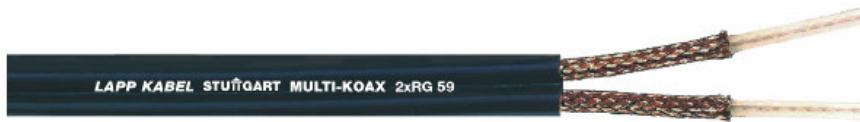
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Photographs are not to scale and do not represent detailed images of the respective products.

Coaxial cables

High frequencies

Multi coaxial cables RG 59 B/U



Benefits

- In extended systems, the use of the RG 59 B/U multi-coaxial cable as a screened supply cable prevents an accumulation of individual cables running in parallel over long distances.
- This saves installation costs and provides greater mechanical protection for the each sensitive cable.

Product features

- Multi-coaxial cables provide an easier installation than individual installation

Approvals



Design

- 2 x single coaxial cables type RG 59 B/U
- Twin cable
- PVC outer sheath
- Colour: black

Technical data

- Based on**
Similar to MIL specification MIL C 17
- Minimum bending radius**
Fixed installation: 15 x cable diameter
- Temperature range**
Fixed installation: -40°C to +80°C

Article number	Number of single cables x RG type	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170056	2 x RG 59 B/U	6.5 x 13.0	50.0	116

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths Photographs are not to scale and do not represent detailed images of the respective products.

Coaxial cables RGB



Benefits

- Low attenuation ensures a longer transmission distance
- Transmission of the red (R), green (G) and blue (B) colour signals

Application range

- Colour monitor cable for PCs and CAD workstations, process visualisation
- For fixed installation in rooms (RGB CY..x Kx 0.4/1.8)
- For highly flexible applications in power chains (energy supply chains) and continuously moving machine components (RGB-FD..x Kx 0.6L/2.4)

Approvals



Design

- Conductor: tinned-copper wire
- Dielectric: cellular polyolefin
- Outer conductor: copper braiding or tinned-copper wire wrapping
- Red (R), green (G), blue (B) elements - for RGB 5 x Kx 0.4/1.8 red, green, blue, white, black
- PVC outer sheath



Info

- Connecting Cable for Colour Monitors

Technical data

- Mutual capacitance**
60 nF/km
- Minimum bending radius**
15 x outer diameter
- Temperature range**
-10 °C to +80 °C
Occasional flexing: -5 °C to +70 °C
- Characteristic impedance**
75 Ohm

Article number	Article designation	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Fixed installation				
0034245	RGB CY 3 x Kx 0,4/1,8 + 3 x 0,25	8.0	51.0	97
0034246	RGB DY 5 x Kx 0,4/1,8	9.7	60.0	132
Flexible and highly flexible applications				
0034247	RGB-FD 3 x Kx 0,6L/2,4	10.8	29.0	100

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- STAR STRIP stripping tool refer to page 906
- DATA STRIP stripping tool refer to page 907

Accessories for INDUSTRIAL networking
LAN cables for structured industrial cabling

404

Components for building-networking

LAN cables for structured building cabling	410
Ethernet patch cable	416
RJ45 Ethernet connector	418
Crimping tools for RJ45 connectors	420
Modular connection systems	421
LSA+ connection systems	426

Accessories for INDUSTRIAL networking

LAN cables for structured industrial cabling	
ETHERLINE® Cat.5e	404
ETHERLINE® Cat.5e FLEX	404
ETHERLINE® Cat.5e FD	405
ETHERLINE® Cat.5 FD BK	405
ETHERLINE® Cat.5 ARM	406
ETHERLINE® Cat.5 FRNC HYBRID	406
ETHERLINE® PN Cat.5	407
ETHERLINE® PN FLEX	407
ETHERLINE® PN Cat.5 FD	407
ETHERLINE® Y Cat.5e BK 2x2AWG22/7	New 408
ETHERLINE® TORSION Cat. 5	408
ETHERLINE® Cat.6 _A + Cat.7	409
ETHERLINE® CAT.6 FD	New 409

Components for building-networking

LAN cables for structured building cabling	
UNITRONIC® LAN 200 - CAT.5e	New 410
UNITRONIC® LAN 250 - CAT.6	New 411
UNITRONIC® LAN 500 - Cat.6 _A	412
UNITRONIC® LAN 1000 S/FTP Cat.7	New 413
UNITRONIC® LAN 1200 S/FTP Cat.7 _A	New 414
UNITRONIC® LAN 1500 S/FTP Cat.7 _A	New 414
UNITRONIC® LAN OUTDOOR	New 415
UNITRONIC® LAN FLEX	New 415
Ethernet patch cable	
Patchcable RJ45 CAT.5e	416
Patchcable RJ45 CAT.6 S-STP	416
LANmark-6 RJ45 Patchcord	417
LANmark-7 GG45 Patchcord	417
S-FTP Patchcable Crossover RJ45 CAT.5e	417
RJ45 Ethernet connector	
Connector RJ45 CAT.5 Hirose TM11	418
Connector RJ45 CAT.5 Stewart SS37	418
Field-Terminable Connector RJ45 CAT.5e FM45	418
Connector RJ45 CAT.6 Hirose TM21	419
Connector RJ45 Cat.6A fieldmountable	New 419
Crimping tools for RJ45 connectors	
Crimping tool RJ45 Hirose	420
Crimping tool RJ45 Stewart	420
Modular connection systems	
LANmark-5 EVO SnapIn Connector	421
LANmark-5 EVO SnapIn Connector AWG26	421
LANmark-6 EVO SnapIn Connector	421
LANmark-6 EVO SnapIn Connector AWG26	421
LANmark-6 EVO SnapIn Connector 10G	422
LANmark-7 GG45 SnapIn Connector	422
Comfort Tool	422
Easy Termination Tool	422
Patchpanel Modular fix mounting	423
Patchpanel Modular extendable	423
Patchpanel Modular Mini Surface-Mounted	423
Patchpanel Modular rail mounting	423
Outlet Snap-In front module	424
Surface-Mounted Case (84x84 mm) and coverplate	424
Keystone Clips for EVO SnapIn Connectors	425
Keystone Clips for SnapIn Connectors	425
SnapIn rail mount Adapter	425
LSA+ connection systems	
Flush-Mounted Outlet LSA+	426
Data Binder LSA+	426
Punch down tool LSA+	426

ETHERLINE®

Data communication systems
for ETHERNET-Technology



ETHERLINE® Cat.5e

Fixed installation



Benefits

- Very low installation cost due to the use of Ethernet cables
- Screened against interference

Application range

- 10/100 Mbit/s for Industrial Ethernet
- Seamless communication from the sensor/actuator level to the Internet
- Industrial use
- Suitable for fixed installation in dry and damp rooms

Product features

- High-quality, double screening ensures high transmission reliability in areas with electro-magnetic interference

- PUR outer sheath is highly resistant to mineral oils and abrasion
- Halogen-free and flame-retardant FRNC outer sheath

Approvals



Design

- Solid conductor
- Core insulation made of foam skin
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath as either PUR or LSZH
- Colour: water blue (RAL 5021)
- 2 or 4-pair version

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version					
Halogen-free compound					
2170280	ETHERLINE® H CAT.5e	2 x 2 x AWG24/1	5.8	22.0	45
PUR outer sheath, halogen-free					
2170281	ETHERLINE® P CAT.5e	2 x 2 x AWG24/1	5.8	22.0	53
4-pair version					
Halogen-free compound					
2170296	ETHERLINE® H CAT.5e	4 x 2 x AWG24/1	6.3	32.0	54
2170298	ETHERLINE® H-H CAT.5e	4 x 2 x AWG24/1	6.0 / 7.5	32.0	80
Outer sheath: PUR, halogen-free					
2170297	ETHERLINE® P CAT.5e	4 x 2 x AWG24/1	6.3	32.0	62

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.



Info

- Industrial Ethernet cable
- Cat.5e

Technical data



Peak operating voltage
(not for power applications) 125 V



Minimum bending radius
Fixed installation: see data sheet



Test voltage
Core/core: 1000 V
Core/screen: 500 V



Temperature range
During installation: -5 °C to +60 °C
Operation: see data sheet



Characteristic impedance
100 Ohm +/- 15%

ETHERLINE® Cat.5e FLEX

Flexible use



Benefits

- For directly connecting two electric components
- Very low installation cost due to the use of Ethernet cables
- Screened against interference

Application range

- Suitable for fixed installation in dry and damp rooms
- 10/100 Mbit/s for Industrial Ethernet
- For flexible applications (7-wire stranded conductor)
- Industrial use

Product features

- Premium screening against electromagnetic interference
- Halogen-free outer sheath
- PUR outer sheath is highly resistant to mineral oils and abrasion

Design

- Stranded conductor, 7-wire, bare
- Core insulation made of foam skin
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath as either PUR or LSZH
- Colour: water blue (RAL 5021)
- 2 or 4-pair version

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version					
Halogen-free compound					
2170283	ETHERLINE® H Flex CAT.5e	2 x 2 x AWG26/7	5.4	19.0	43
PUR outer sheath, halogen-free					
2170284	ETHERLINE® P Flex CAT.5e	2 x 2 x AWG26/7	5.8	19.0	45
4-pair version					
Halogen-free compound					
2170299	ETHERLINE® H Flex CAT.5e	4 x 2 x AWG26/7	6.1	25.0	48
Outer sheath: PUR, halogen-free					
2170300	ETHERLINE® P Flex CAT.5e	4 x 2 x AWG26/7	6.1	25.0	54

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.



Info

- Industrial Ethernet cable
- Cat.5e
- Only for patch cable applications (max. 60 m)

Technical data



Peak operating voltage
(not for power applications) 125 V



Minimum bending radius
See data sheet



Test voltage
Core/core: 1000 V
Core/screen: 500 V



Temperature range
During installation: -5 °C to +60 °C
Operation: see data sheet



Characteristic impedance
100 Ohm +/- 15%



Info

- Industrial Ethernet cable
- For highly flexible applications
- Only for patch cable applications (max. 60 m)

Benefits

- Very low installation cost due to the use of Ethernet cables
- Screened against interference
- Seamless communication from the sensor/ actuator level to the Internet

Application range

- 10/ 100 Mbit/s for Industrial Ethernet
- Industrial use
- Power chain applications
- Dry or damp rooms

Product features

- High-quality, double screening ensures high transmission reliability in areas with electro-magnetic interference
- PUR outer sheath is highly resistant to mineral oils and abrasion

Design

- Braided conductor, 19-wire
- Inner sheath: thermoplastic elastomer, halogen-free
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- PUR outer sheath
- Colour: water blue (RAL 5021)
- 2 or 4-pair version

ETHERLINE® Cat.5e FD

Highly flexible application

Technical data

- Peak operating voltage**
(not for power applications) 125 V
- Minimum bending radius**
Flexing: 15 x outer diameter
Fixed installation: 8 x outer diameter
- Test voltage**
Core/core: 1000 V
Core/screen: 500 V
- Temperature range**
Flexing: -20 °C to +70 °C
Fixed installation: -30 °C to +80 °C
- Characteristic impedance**
100 Ohm +/- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version					
2170289	ETHERLINE® FD P CAT.5e	2 x 2 x AWG26/19	6.1	20.0	48
4-pair version					
2170489	ETHERLINE® FD P CAT.5e	4 x 2 x AWG26/19	6.3	27.0	54

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.



Info

- Suitable for outdoor use and direct burial
- Usable on the roads
- CAT.5-Performance

Benefits

- Very low installation cost due to the use of Ethernet cables
- Additional application options thanks to suitability for outdoor use, UV-resistant
- Good flexibility - easy installation with tight space requirements
- Screened against interference
- Easy to coil for mobile use

Application range

- Suitable for the transfer of audio signals (ETHERSOUND), light control signals (DMX over Ethernet), or for computer networking

Product features

- ETHERLINE® CAT.5 FD BK is a highly flexible, halogen-free, CATEGORY 5 high-speed data transmission cable, which specifically developed for road environments.
- Complies with standards EIA/TIA-568, TSB-36 and ISO/IEC IS 11801

Approvals



Design

- Bare stranded copper wire, 26AWG (19 x 0.10), (0.14 mm²)
- Insulation: foam skin, max. core diameter 1.0 mm
- Twisting: 2 twisted-pair cores, stranding from 4 pairs
- Inner sheath: halogen-free TPE compound
Screening: braided tinned-copper wires, coverage of 85% ± 5
- Outer sheath: halogen-free PUR, black

Technical data

- Minimum bending radius**
95 mm
- Temperature range**
Flexible use: -5 °C to +50 °C
Fixed installation: -40 °C to +70 °C

Article number	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
CE217489	4x2xAWG26/19	6.3	27.0	54

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Standard lengths: (100; 500; 1000) m
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ETHERLINE® FD P CAT.5

ETHERLINE® Cat.5 FD BK

The Ethernet cable for installation in events

LAPP KABEL STUTTGART ETHERLINE® CAT.5 FD BK



ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

ETHERLINE® Cat.5 ARM

Fixed installation

LAPP KABEL STUFGART ETHERLINE® Y2Y ARM TYPE A CAT.5



Info

- Industrial Ethernet cable
- With armouring for improved rodent protection

Benefits

- Very low installation cost due to the use of Ethernet cables
- EMC-optimised
- Rodent-protection

Application range

- Can be used for Industrial Ethernet in harsh industrial environments
- 10/100 Mbit/s for Industrial Ethernet

Product features

- CAT.5-Performance

Design

- Solid and bare copper conductor
- Core insulation: PE
- Overlapping plastic tape
- Overall screening with copper braid and plastic-laminated aluminium foil
- Inner sheath made of PVC (green)
- 2 layer galvanzid steel tape
- Outer sheath made of black polyethylene (PE)

Technical data



Minimum bending radius

Fixed installation:
10 x cable diameter
Fixed installation: 5 x cable diameter, once



Test voltage

Core/core: 2000 V
Core/screen: 2000 V



Temperature range

Operation: -40 °C to +70 °C
During installation: -20°C to +60°C



Characteristic impedance

100 Ohm +/- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170496	ETHERLINE® Cat.5 ARM	2 x 2 x AWG22/1	9.3	30.4	124

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

ETHERLINE® Cat.5 FRNC HYBRID

Flexible use

LAPP KABEL STUFGART ETHERLINE® FRNC HYBRID



Info

- HYBRID: cable for data transmission + power supply

Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required

Application range

- Industrial Ethernet cable
- 10/100 Mbit/s for Industrial Ethernet
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference

Product features

- Flame-retardant according to IEC 60332.1.2
- HYBRID: cable for data transmission + power supply

Design

- Colour: green (based on RAL 6018)
- Cores for Power Supply
4 x 1.5 mm² (AWG16)
- Data transfer: braided conductor, 7-wire, bare
- Screening: wrapped with foil and braided copper wires
- Twisting: data pairs and power supply pairs twisted together
- Overlapping plastic tape
- FRNC outer sheath

Technical data



Minimum bending radius

Fixed installation:
10 x cable diameter
Fixed installation: 5 x cable diameter, once



Test voltage

See data sheet



Temperature range

Operation: -20°C to +70°C



Characteristic impedance

100 Ohm +/- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170887	ETHERLINE® Cat.5 FRNC HYBRID	2x2xAWG22/7 + 4x1.5	10.3	94.2	153

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

ETHERLINE® PN Cat.5

Fixed installation



Info

- Conductor: AWG22 = PROFINET-compliant
- CAT.5/5e

Benefits

- For Profinet applications
- Screened against interference

Application range

- for industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702

Product features

- Fixed installation
- FC: "Fast Connect" cable design

- Flame-retardant according to IEC 60332-1-2
- ETHERLINE® Y FC version: flame-retardant according to IEC 60332-3

Design

- Solid and bare copper conductor
- Core insulation: PE
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PVC

Technical data

- Minimum bending radius**
See data sheet
- Test voltage**
See data sheet
- Temperature range**
See data sheet
- Characteristic impedance**
100 Ohm +- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170891	ETHERLINE® PN Cat.5e Y	2 x 2 x AWG22/1	6.4	30.4	56
FC: "Fast Connect" cable design					
2170893	ETHERLINE® Y FC UL/CSA (CMG) CAT.5	2 x 2 x AWG22/1	6.5	30.4	70
Suitable for outdoor use and direct burial					
2170494	ETHERLINE® PN Cat.5e YY	2 x 2 x AWG22/1	7.8	30.4	62

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

ETHERLINE® PN FLEX



Info

- for Profinet applications
- CAT.5-Performance
- Flexible use

Benefits

- Screened against interference
- Conductor: AWG22 = PROFINET-compliant

Application range

- for industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702

Product features

- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test

Design

- Stranded 7-wire bare conductor
- Core insulation: PE
- Inner sheath made of PVC
- Overall screening with copper braid and plastic-laminated aluminium foil
- PVC-based outer sheath
- Colour: green

Technical data

- Minimum bending radius**
Fixed installation: 7 x outer diameter
Fixed installation: 3 x outer diameter
- Test voltage**
Core/core: 2000 V
Core/screen: 2000 V
- Temperature range**
Operation: -40 °C to +70 °C
- Characteristic impedance**
100 Ohm +- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170886	ETHERLINE® PN Cat.5 Y FLEX FC	2 x 2 x AWG22/7	6.5	31.3	67

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

ETHERLINE® PN Cat.5 FD



Info

- Highly flexible application
- for Profinet applications

Benefits

- Screened against interference
- Conductor: AWG22 = PROFINET-compliant

Application range

- Power chain applications
- Dry or damp rooms
- Industrial use

Product features

- PUR outer sheath is highly resistant to mineral oils and abrasion

- Flame-retardant according to IEC 60332.1.2

Design

- Stranded 7-wire bare conductor
- Inner sheath: thermoplastic copolymer (FRNC)
- Overall screening with copper braid and plastic-laminated aluminium foil
- PUR outer sheath
- Colour: green (based on RAL 6018)

Technical data

- Minimum bending radius**
Flexing: 7.5 x outer diameter
Fixed installation: 5 x cable diameter, once
- Test voltage**
Core/core: 700 V
Core/screen: 700 V
- Temperature range**
Operation: -20 °C to +70 °C
- Characteristic impedance**
100 Ohm +- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications (7-wire stranded conductor) = type C					
2170894	ETHERLINE® FD P FC CAT.5	2 x 2 x AWG22/7	6.5	31.3	63

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

New

ETHERLINE® Y Cat.5e BK 2x2AWG22/7

LAPP KABEL STUTTGART ETHERLINE® Y CAT. 5e SUN RES

Benefits

- UV and weather-resistant in black
- For flexible applications (7-wire stranded conductor) = type B
- FAST ETHERNET = 100 Mbit/s

Application range

- Many applications with Industrial Ethernet, e.g. PROFINET type B, i.e. fixed installation and flexible use.
- Resistant to acids, alkalis and certain oils at room temperature

Product features

- PVC compound TM2 acc. to VDE 0281-1 or HD 21.1

Approvals



Design

- Stranded conductor, 7-wire, bare
- Core insulation: Based on Polyolefin
- Star quad
- Aluminum-coated foil
- Screening braid made of tinned-copper wires
- PVC outer sheath

Technical data



Peak operating voltage
(not for power applications) 125 V



Minimum bending radius
Fixed installation: 10 x outer diameter
Flexing: 15 x outer diameter



Test voltage
Core/core: 1000 V
Core/screen: 500 V



Temperature range
Flexing: -10°C to +70°C
Fixed installation: -40°C to +80°C



Characteristic impedance
At 1 - 100 MHz: 100 ± 15 Ohm

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170901	ETHERLINE® Y CAT.5e BK 2x2AWG22/7	2 x 2 x AWG22/7	6.2	30.4	59

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)
Photographs are not to scale and do not represent detailed images of the respective products.

ETHERLINE® TORSION Cat. 5

LAPP KABEL STUTTGART ETHERLINE® TORSION CAT.5

Benefits

- This cable is an important supplement to the range of ETHERLINE® Industrial Ethernet cables.
- Cable suitable for high torsion stress. Tested with more than 1 million bending cycles and a right/left movement of 180° per metre.

Application range

- Many applications with Industrial Ethernet, e.g. PROFINET, i.e. fixed installation, flexible and highly flexible use as well as TORSION.

Product features

- Flame-retardant according to IEC 60332.1.2
- Outer sheath with high abrasion-resistance

Approvals



- UL AWM (Style 21161)

Design

- Stranded conductor, tinned
- AWG 22 (19-wire)
- PE core insulation
- Star quad
- PUR outer sheath, halogen-free



Info

- Industrial Ethernet Cable, 2-pair, suitable for torsion stress

Technical data



Peak operating voltage
max. 100 V (not for power applications)



Minimum bending radius
Installation: 5 x outer diameter



Test voltage
700 V



Temperature range
-40°C to +80°C



Characteristic impedance
At 1 - 100 MHz: 100 ± 15 Ohm

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170888	ETHERLINE® TORSION CAT.5	2 x 2 x AWG22/19	6.5	31.3	52

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Multipurpose shears A and B refer to page 902
- SMARTSTRIP stripping tool refer to page 907

ETHERLINE® Cat.6_A + Cat.7 Fixed installation



Info

- Industrial Ethernet cable

Benefits

- Screened against interference
- Cat.6_A = 500 MHz
- Cat.7 = 600 MHz

Application range

- Can be used for Industrial Ethernet in harsh industrial environments
- Can be used in dry or damp rooms

Product features

- PUR outer sheath is highly resistant to mineral oils and abrasion

- Robust, halogen-free outer sheath
- PVC outer sheath

Approvals



Design

- Solid bare copper wire AWG22
- Core insulation made of polyethylene (PE)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Colour: green

Technical data

Z_∞ Characteristic impedance
100 ohm at 1 - 100 MHz

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170466	ETHERLINE® Cat. 6 _A H	4 x 2 x AWG22 / 1	8.7	53.0	99
2170476	ETHERLINE® CAT.7 H	4 x 2 x AWG22 / 1	8.7	53.0	99
2170465	ETHERLINE®CAT. 6 _A P	4 x 2 x AWG22 / 1	8.7	53.0	91
2170475	ETHERLINE® Cat.7 P	4 x 2 x AWG22 / 1	8.7	53.0	91
2170464	ETHERLINE® Cat. 6 _A Y	4 x 2 x AWG22 / 1	8.7	53.0	98
2170474	ETHERLINE® Cat.7 Y	4 x 2 x AWG22 / 1	8.7	53.0	98

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- DATA STRIP stripping tool refer to page 907



Info

- CAT.6 for drag chain!
- Only for patch cable applications (max. 60 m)

Benefits

- PUR outer sheath is highly resistant to most oils, abrasion, and UV-radiation
- Premium screening against electromagnetic interference

Application range

- For use in power chains and moving machinery parts in dry or damp rooms

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



- UL/CSA type CMX (UL 444)

Design

- Stranded conductor, tinned
- AWG 26 (19-wire)
- PP core insulation
- Inner sheath: thermoplastic copolymer (FRNC)
- PUR outer sheath, halogen-free
- Colour: green (based on RAL 6018)

Suitable connectors

- Field-Terminable Connector RJ45 CAT.5e FM45 418
- Connector RJ45 Cat.6A fieldmountable 419

Technical data

⚡ Peak operating voltage
max. 100 V (not for power applications)

⤵ Minimum bending radius
Fixed installation:
4 x outer diameter
Flexing: 7.5 x outer diameter

⚡ Test voltage
700 V

🌡️ Temperature range
Fixed installation: -40°C to +80°C
Flexing: -30°C to +80°C

Z_∞ Characteristic impedance
At 1 - 100 MHz: 100 ± 15 Ohm

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170488	ETHERLINE® FD P.CAT.6	4 x 2 x AWG26 / 19	7.8	31.7	63

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

For current information see: www.lappgroup.com

New

UNITRONIC® LAN 200 - CAT.5e



Info

- EIA = Electronic Industries Association
- TIA = Telecommunication Industries Association
- TSB = Technical Systems Bulletin

Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

Product features

- Transfer of digital and analogue data signals
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T
IEEE 802.5: ISDN; FDDI; ATM

Approvals



- Class D in ISO/IEC 11801 standard corresponds to CAT.5
- LAN CAT.5e cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36, as well as ISO/IEC 11801 or EN 50173 (Class D).

Design

- U/UTP: no overall or pair shielding
- F/UTP: foil screening as overall screening
- SF/UTP: copper braid and foil screening as overall screening
- Solid conductor
- Outer sheath either as PVC or LSZH

Technical data

- Minimum bending radius**
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter
- Temperature range**
Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C
- Characteristic impedance**
100 Ohm +/- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC version					
2170125	200 U/UTP Cat.5e	4 x 2 x AWG24/1	5.6	17.0	32
2170126	200 F/UTP Cat.5e	4 x 2 x AWG24/1	6.4	18.0	42
2170128	200 SF/UTP Cat.5e	4 x 2 x AWG24/1	6.7	32.0	60
Halogen-free versions					
2170185	200 U/UTP Cat.5e LSZH	4 x 2 x AWG24/1	5.6	17.0	
2170138	200 SF/UTP Cat.5e LSZH	4 x 2 x AWG24/1	6.7	32.0	61

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: Coil 100 m; Drum (500; 1000) m
 Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Connector RJ45 CAT.5 Hirose TM11 refer to page 418
- Connector RJ45 CAT.5 Stewart SS37 refer to page 418
- Field-Terminable Connector RJ45 CAT.5e FM45 refer to page 418
- DATA STRIP stripping tool refer to page 907

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

UNITRONIC® LAN 250 - CAT.6



Info

- EIA = Electronic Industries Association
- TIA = Telecommunication Industries Association
- TSB = Technical Systems Bulletin



Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).

Product features

- Transfer of digital and analogue data signals
- LAN Cat.6 cables are specified up to 350 MHz
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T
IEEE 802.5: ISDN; FDDI; ATM

Approvals



- Class E out of the standard ISO/IEC 11801 corresponds to CAT.6
- LAN CAT.6 cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36, as well as ISO/IEC 11801 or EN 50173 (Class E - permanent link).

Design

- U/UTP: no overall or pair shielding
- F/UTP: foil screening as overall screening
- Solid conductor
- Outer sheath either as PVC or LSZH

Technical data

- Minimum bending radius**
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter
- Temperature range**
Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C
- Characteristic impedance**
100 Ohm +- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)
PVC versions				
2170186	250 U/UTP Cat.6	4 x 2 x AWG24/1	6.5	18.0
Halogen-free versions				
2170193	250 U/UTP Cat.6 LSZH	4 x 2 x AWG24/1	6.5	18.0
2170194	250 F/UTP Cat.6 LSZH	4 x 2 x AWG24/1	7.5	19.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

UNITRONIC® LAN 500 - Cat.6_A

LAPP KABEL STUÏTGART UNITRONIC® LAN CAT. 6A 4x2xAWG23

LAPP KABEL STUÏTGART UNITRONIC® LAN CAT. 6A 4x2xAWG26



Info

- EIA = Electronic Industries Association
- TIA = Telecommunication Industries Association
- TSB = Technical Systems Bulletin

■ Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

■ Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

■ Product features

- Transfer of digital and analogue data signals
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
IEEE 802.5: ISDN; FDDI; ATM

■ Approvals



- Class E_A out of the standard ISO/IEC 11801 corresponds to Cat.6_A
- LAN Cat.6_A cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36, as well as ISO/IEC 11801 or EN 50173 (Class E_A - permanent link).

■ Design

- U/FTP: aluminium compound foil as pair screening
- F/FTP: aluminium compound foil as overall screening and pair screening
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Solid conductor
- Outer sheath either as PVC or LSZH

■ Technical data



Minimum bending radius
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter



Temperature range
Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C



Characteristic impedance
100 Ohm ± 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC version					
2170143	500 S/FTP Cat.6 _A	4 x 2 x AWG23/1	7.7	27.0	53
Halogen-free versions					
2170195	500 U/FTP Cat.6 _A LSZH	4 x 2 x AWG23/1	7.4	21.0	
2170196	500 F/FTP Cat.6 _A LSZH	4 x 2 x AWG23/1	7.6	22.0	

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

CAT.6a is available as a draft

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

■ Accessories

- Connector RJ45 CAT.6 Hirose TM21 refer to page 419
- DATA STRIP stripping tool refer to page 907

New

UNITRONIC® LAN 1000 S/FTP Cat.7



Info

- EIA = Electronic Industries Association
- TIA = Telecommunication Industries Association
- TSB = Technical Systems Bulletin

LAPP KABEL STUTTGART UNITRONIC® LAN S/FTP 1000 MHz Cat.7

LAPP KABEL STUTTGART UNITRONIC® LAN S/FTP 1000 MHz Cat.7 DUPLEX

Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

Product features

- Transfer of digital and analogue data signals
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
IEEE 802.5: ISDN; FDDI; ATM; cable sharing
IEEE 802.3at: suitable for PoE

Approvals



- Class F in the ISO/IEC 11801 standard corresponds to CAT.7

Design

- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Solid conductor
- Outer sheath: halogen-free, flame-retardant compound

Technical data

Minimum bending radius
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter

Temperature range
Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C

Characteristic impedance
100 Ohm ± 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Halogen-free versions					
2170614	1000 S/FTP Cat.7 LSZH	4 x 2 x AWG23/1	7.7	27.0	78
2170634	1000 S/FTP Cat.7 duplex	2 x (4 x 2 x AWG23/1)	7.7 x 15.4	54.0	156

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil 100 m; Drum (500; 1000) m
Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

UNITRONIC® LAN 1200 S/FTP Cat.7_A

LAPP KABEL STUTTGART UNITRONIC® LAN S/FTP 1200 MHz Cat.7A



Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

Product features

- Transfer of digital and analogue data signals
- The cable is specified for up to 1.2 GHz
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
IEEE 802.5: ISDN; FDDI; ATM; cable sharing
IEEE 802.3at: suitable for PoE

Approvals



- LAN Cat.7_A cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36 as well as ISO/IEC 11801 or EN 50173 (Class F_A - permanent link).
- Exceeds the requirements of EN 50173 and ISO/IEC 11801 standards

Design

- Solid bare copper wire AWG22
- Cellular polyolefin core insulation, max. core diameter 1.6 mm
- Pair screen made of aluminium-lined plastic foil, overall screening made of tinned-copper braiding
- Outer sheath: halogen-free, flame-retardant compound
- Colour: yellow (RAL 7032)



Info

- Complies with the EN 50173 and ISO/IEC 11801 standards

Technical data



Minimum bending radius
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter



Temperature range
Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C



Characteristic impedance
100 Ohm ± 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170615	1200 S/FTP Cat. 7 _A LSZH	4 x 2 x AWG22/1	8.1	34.0	80

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Drum

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Multipurpose shears A and B refer to page 902
- DATA STRIP stripping tool refer to page 907

New

UNITRONIC® LAN 1500 S/FTP Cat.7_A

LAPP KABEL STUTTGART UNITRONIC® LAN S/FTP 1500 MHz Cat.7A



Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).

Product features

- Transfer of digital and analogue data signals
- Cable is specified for up to 1.5 GHz
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
IEEE 802.5: ISDN; FDDI; ATM; cable sharing
IEEE 802.3at: suitable for PoE, VoIP

Approvals

- LAN Cat.7_A cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36 as well as ISO/IEC 11801 or EN 50173 (Class F_A - permanent link).
- Exceeds the requirements of EN 50173 and ISO/IEC 11801 standards

Design

- Solid bare copper wire AWG22
- Cellular polyolefin core insulation, max. core diameter 1.6 mm
- Pair screen made of aluminium-lined plastic foil, overall screening made of tinned-copper braiding
- Outer sheath: halogen-free, flame-retardant compound
- Colour: yellow (RAL 7032)



Info

- Complies with the EN 50173 and ISO/IEC 11801 standards

Technical data



Minimum bending radius
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter



Temperature range
Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C



Characteristic impedance
100 Ohm ± 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)
2170199	1500 S/FTP Cat. 7 _A LSZH	4 x 2 x AWG22/1	8.5	42.0

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

For current information see: www.lappgroup.com

New

UNITRONIC® LAN OUTDOOR



Info

- Data cable for primary, secondary and tertiary cabling with PE outer sheath for outdoor applications

Benefits

- Suitable for outdoor use and direct burial
- UV and water-resistant
- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- For outdoor use
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

Product features

- Transfer of digital and analogue data signals
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
- IEEE 802.5: ISDN; FDDI; ATM; cable sharing
- IEEE 802.3at: suitable for PoE

LAPP KABEL STUTTGART UNITRONIC® LAN 1000 MHz S/FTP CAT.7 PE 4x2x23AWG/1

Approvals

- LAN Cat.7 cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36, as well as ISO/IEC 11801 or EN 50173 (Class F - permanent link).

Design

- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Solid conductor
- Core insulation: foamed polyolefin
- PE outer sheath
- Colour: black (RAL 9005)

Technical data

- Minimum bending radius**
During installation: 10 x outer diameter
Fixed installation: 4 x outer diameter
- Temperature range**
Operation: up to +60 °C
During installation: -15 °C to +60 °C
- Characteristic impedance**
100 Ohm +- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Suitable for direct burial					
2170198	1000 S/FTP Cat.7 (L)PE	4 x 2 x AWG23/1	10.0	34.0	72
Suitable for direct routing underground, not transversely waterproof					
2170197	1000 S/FTP Cat.7 PE	4 x 2 x AWG23/1	9.6	34.0	75

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

New

UNITRONIC® LAN FLEX

Flexible use



Info

- Only for patch cable applications (max. 60 m)

Benefits

- For directly connecting two electric components
- Easy to assemble

Application range

- Indoor applications
- LAN connections
- Control cabinet wiring

Product features

- Good flexibility - easy installation with tight space requirements

Design

- F/UTP: foil screening as overall screening
- SF/UTP: copper braid and foil screening as overall screening
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath either as PVC or LSZH

Technical data

- Minimum bending radius**
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter
- Characteristic impedance**
100 Ohm +- 15%

LAPP KABEL STUTTGART UNITRONIC® LAN 200 MHz F/UTP CAT.5e Y 4x2x26AWG/7

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC versions					
2170127	200 F/UTP Cat.5e	4 x 2 x AWG26/7	5.6	13.0	30
2170129	200 SF/UTP Cat.5e	4 x 2 x AWG26/7	6.0	22.0	41
2170144	600 S/FTP CAT7 Y	4 x 2 x AWG26/7	6.5	22.0	40
Halogen-free versions					
2170137	200 F/UTP Cat.5e LSZH	4 x 2 x AWG26/7	5.6	13.0	31
2170139	200 SF/UTP Cat.5e LSZH	4 x 2 x AWG26/7	6.0	22.0	42

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Patchcable RJ45 CAT.5e



Product features

- FTP patch cable CAT.5e
- Foil screening, 300 MHz, grey, FRNC, with Hirose TM 11 connector, also available in different colours, allocation according to TIA/EIA 568B
- S-FTP patch cable CAT.5e
- Foil and braid screening, 300 MHz, grey, FRNC, with Hirose TM 11 connector, also available in different colours, allocation according to TIA/EIA 568B

Approvals



Article number	Article designation	Colour	Length (m)	PU
FTP patch cable CAT.5e				
CE6547	Patchcable RJ45 CAT.5e FTP 0.5m	grey	0.5	5 pieces
CE6548	Patchcable RJ45 CAT.5e FTP 1.0m	grey	1.0	5 pieces
CE6549	Patchcable RJ45 CAT.5e FTP 1.5m	grey	1.5	5 pieces
CE6550	Patchcable RJ45 CAT.5e FTP 2.0m	grey	2.0	5 pieces
CE6551	Patchcable RJ45 CAT.5e FTP 3.0m	grey	3.0	5 pieces
CE6552	Patchcable RJ45 CAT.5e FTP 5.0m	grey	5.0	5 pieces
CE6553	Patchcable RJ45 CAT.5e FTP 7.5m	grey	7.5	5 pieces
CE6554	Patchcable RJ45 CAT.5e FTP 10.0m	grey	10.0	5 pieces
CE6555	Patchcable RJ45 CAT.5e FTP 15.0m	grey	15.0	1 piece
CE6556	Patchcable RJ45 CAT.5e FTP 20.0m	grey	20.0	1 piece
S-FTP patch cable CAT.5e				
CE6647	Patchcable RJ45 CAT.5e S-FTP 0.5m	grey	0.5	5 pieces
CE6648	Patchcable RJ45 CAT.5e S-FTP 1.0m	grey	1.0	5 pieces
CE6649	Patchcable RJ45 CAT.5e S-FTP 1.5m	grey	1.5	5 pieces
CE6650	Patchcable RJ45 CAT.5e S-FTP 2.0m	grey	2.0	5 pieces
CE6651	Patchcable RJ45 CAT.5e S-FTP 3.0m	grey	3.0	5 pieces
CE6652	Patchcable RJ45 CAT.5e S-FTP 5.0m	grey	5.0	5 pieces
CE6653	Patchcable RJ45 CAT.5e S-FTP 7.5m	grey	7.5	5 pieces
CE6654	Patchcable RJ45 CAT.5e S-FTP 10.0m	grey	10.0	5 pieces
CE6655	Patchcable RJ45 CAT.5e S-FTP 15.0m	grey	15.0	1 piece
CE6656	Patchcable RJ45 CAT.5e S-FTP 20.0m	grey	20.0	1 piece

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Other colours are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Patchcable RJ45 CAT.6 S-STP



Product features

- PiMF 500 MHz, with Hirose TM21 connector
- Halogen-free
- Configuration is in accordance with TIA/EIA 568B
- Colour: grey; other colours are available upon request

Approvals



Article number	Article designation	Colour	Length (m)	PU
S-STP patch cable CAT.6				
CE6847	Patchcable RJ45 CAT.6 S-STP 0.5m	grey	0.5	5 pieces
CE6848	Patchcable RJ45 CAT.6 S-STP 1.0m	grey	1.0	5 pieces
CE6849	Patchcable RJ45 CAT.6 S-STP 1.5m	grey	1.5	5 pieces
CE6850	Patchcable RJ45 CAT.6 S-STP 2.0m	grey	2.0	5 pieces
CE6851	Patchcable RJ45 CAT.6 S-STP 3.0m	grey	3.0	5 pieces
CE6852	Patchcable RJ45 CAT.6 S-STP 5.0m	grey	5.0	5 pieces
CE6853	Patchcable RJ45 CAT.6 S-STP 7.5m	grey	7.5	5 pieces
CE6854	Patchcable RJ45 CAT.6 S-STP 10.0m	grey	10.0	5 pieces
CE6855	Patchcable RJ45 CAT.6 S-STP 15.0m	grey	15.0	1 piece
CE6856	Patchcable RJ45 CAT.6 S-STP 20.0m	grey	20.0	1 piece

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Other colours are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

LANmark-6 RJ45 Patchcord

Product features

- 10Gigabit Ethernet
- The patchcord fully complies to Category 6, maximising the channel performance and exceeding the requirements of ISO/IEC 11801:2002 as part of a LANmark-6 wiring of Class E. This offers an improved data transmission rates and enables the inclusion of consolidation points for maximum system flexibility.
- Halogen-free, flame-retardant sheath with lower smoke development
- Screened version

Approvals



Article number	Article designation	Colour	Length (m)	PU
LANmark-6 RJ45 Patchcord				
CE6147	LANmark-6 RJ45 Patchcord 0.5m	orange	0.5	1 piece
CE6148	LANmark-6 RJ45 Patchcord 1.0m	orange	1.0	1 piece
CE6149	LANmark-6 RJ45 Patchcord 1.5m	orange	1.5	1 piece
CE6150	LANmark-6 RJ45 Patchcord 2.0m	orange	2.0	1 piece
CE6151	LANmark-6 RJ45 Patchcord 3.0m	orange	3.0	1 piece
CE6152	LANmark-6 RJ45 Patchcord 5.0m	orange	5.0	1 piece
CE6154	LANmark-6 RJ45 Patchcord 10.0m	orange	10.0	1 piece
CE6155	LANmark-6 RJ45 Patchcord 15.0m	orange	15.0	1 piece

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

LANmark-7 GG45 Patchcord

Product features

- The LANmark-7 Patchcable with two four-paired, non-switched CAT.7 connectors makes it possible to operate one GG45 Permanent Link in 600 MHz mode.
- Screened version
- 2 x GG45 4-pair, backward-incompatible plug
- Low smoke zero halogen (LSZH)

Approvals



Article number	Article designation	Colour	Length (m)	PU
LANmark-7 RJ45 Patchcord GG45				
60641	LANmark-7 GG45 Patchcord 1.0m	orange	1.0	1 piece
60642	LANmark-7 GG45 Patchcord 2.0m	orange	2.0	1 piece
60643	LANmark-7 GG45 Patchcord 3.0m	orange	3.0	1 piece
60644	LANmark-7 GG45 Patchcord 5.0m	orange	5.0	1 piece
60645	LANmark-7 GG45 Patchcord 10.0m	orange	10.0	1 piece

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

S-FTP Patchcable Crossover RJ45 CAT.5e



Product features

- For interconnecting two computers without the use of a central active component (hub, switch...).

- Foil and braid screening, 150 MHz
- Halogen-free
- Hirose TM 11 connector
- Outer sheath and anti-kink sleeve colour: red

Approvals



Article number	Article designation	Colour	Length (m)	PU
Crossover patch cable				
CE6660	Crossover Patchcable RJ45 CAT.5e S-FTP 2.0m	red	2.0	5 pieces
CE6661	Crossover Patchcable RJ45 CAT.5e S-FTP 3.0m	red	3.0	5 pieces
CE6662	Crossover Patchcable RJ45 CAT.5e S-FTP 5.0m	red	5.0	5 pieces
CE6664	Crossover Patchcable RJ45 CAT.5e S-FTP 10.0m	red	10.0	5 pieces

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Connector RJ45 CAT.5 Hirose TM 11



Product features

- Screened version
- Suitable for stranded conductors (AWG26)
- Included: bend protection and guide plate
- Anti-kink protection: beige
- Max. outer sheath diameter: 5.8 mm

Approvals



Article number	Article designation	PU
CE6321	Connector RJ45 CAT.5 Hirose TM11	50 pieces

Hirose is a registered trademark of the HIROSE ELECTRIC Group
 Other colours are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Crimping tool RJ45 Hirose refer to page 420

Connector RJ45 CAT.5 Stewart SS37



Product features

- Screened version
- Suitable for stranded conductors (AWG26)
- Included: bend protection and guide plate
- Anti-kink protection: light grey
- Max. outer sheath diameter: 5.72 mm

Approvals



Article number	Article designation	PU
CE6323	Connector RJ45 CAT.5 Stewart SS37	50 pieces

Stewart is a registered trademark of Bel Fuse Inc.
 Other colours are available upon request.
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Crimping tool RJ45 Stewart refer to page 420

Field-Terminable Connector RJ45 CAT.5e FM45



Product features

- Screened version
- FM45 is a tool-free switchable, field-terminable RJ45 Connector with IDC contacting and CAT.5e performance. The 8-pin connection is tension and vibration-resistant, and can be re-switched. The connecting block can accommodate both screened and unscreened cable of up to 8 mm diameter.
- Suitable for AWG 23 - 26, AWG 22 possible with restrictions
- IDC/piercing terminal according to 60352-4
- Suitable for solid and stranded conductors
- Suitable for use in industrial applications
- Protection rating: IP20

Approvals



Article number	Article designation	PU
21700540	Field-Terminable Connector RJ45 CAT.5e FM45	1 piece

Photographs are not to scale and do not represent detailed images of the respective products.

Connector RJ45 CAT.6 Hirose TM21

Product features

- Channel Class E up to 250 MHz (CAT.6)
- Fully screened
- Conductor: Ø 0.5 mm solid wire:
AWG 24 & 26;
guide plate for 1.1 mm diameter wire;
cable outer diameter: 6.6 mm
- Easy to handle
- Included: bend protection and guide plate
- Anti-kink protection: beige
- Suitable for solid and stranded conductors

Approvals



Article number	Article designation	PU
CE6324	Connector RJ45 CAT.6 Hirose TM21	50 pieces

Hirose is a registered trademark of the HIROSE ELECTRIC Group
Other colours are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Crimping tool RJ45 Hirose refer to page 420

New

Connector RJ45 Cat.6_A fieldmountable

Product features

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- Qualified for 10 Gigabit Ethernet
- Housing: zinc die-casting, grey

- By a multi-level relief setting the connector can accommodate a cable diameter from 5,0 mm up to 9,0 mm
- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG24/1- 22/1
- Suitable for use in industrial applications
- Available with colour code T568A or T568B



Article number	Article designation	PU
21700600	EPIC® DATA ED-IE-AX-6 _A -A-20-FC	10 pieces
21700601	EPIC® DATA ED-IE-AX-6 _A -B-20-FC	10 pieces

Crimping tool RJ45 Hirose



Product features

- Crimping tool for RJ45 connector Hirose TM11 and TM21
- Crimping tool for RJ45 connector Hirose TM11 and TM21
- Crimping tool for RJ45 connector CAT.6 Hirose TM21

Approvals



Article number	Article designation	PU
CE5091	Crimping tool RJ45 Hirose TM11/TM21 8-pole	1 piece

Hirose is a registered trademark of the HIROSE ELECTRIC Group
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Connector RJ45 CAT.5 Hirose TM11 refer to page 418
- Connector RJ45 CAT.6 Hirose TM21 refer to page 419

Crimping tool RJ45 Stewart



Product features

- Crimping tool for RJ45 connector CAT.5 Stewart SS37
- Crimping tool for RJ45 connector CAT.5 Stewart SS37
- Crimping tool for RJ plug 4, 6, 6-DEC and 8-pin

Approvals



Article number	Article designation	PU
CE5093	Crimping tool RJ45 Stewart SS37 8-pole	1 piece
CE5092	Crimping tool RJ 4-, 6-, 6-DEC- and 8-pole	1 piece

Stewart is a registered trademark of Bel Fuse Inc.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Connector RJ45 CAT.5 Stewart SS37 refer to page 418

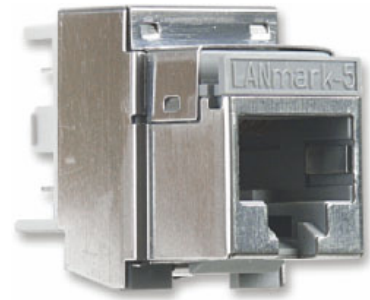
LANmark-5 EVO SnapIn Connector

Product features

- CAT.5e socket screened incl. EMC cover
- Suitable for AWG 22, 23 and 24
- Colour-coded in accordance with EIA/TIA 568A and B
- Fast and optimised termination of all 8 cores
- Suitable for modular components
- All services of CAT.5/Class D according to EN 50173:2002 and ISO/IEC 11801:2002 are supported:

- 10BaseT
- Fast Ethernet
- Gigabit Ethernet
- 155 ATM, 622 ATM, 1.2 ATM

Approvals



Article number	Article designation	PU
61103	LANmark-5 EVO SnapIn Connector	24 pieces

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- LANmark-5 EVO SnapIn Connector AWG26 refer to page 421
- LANmark-7 GG45 SnapIn Connector refer to page 422

Accessories

- Comfort Tool refer to page 422
- Easy Termination Tool refer to page 422

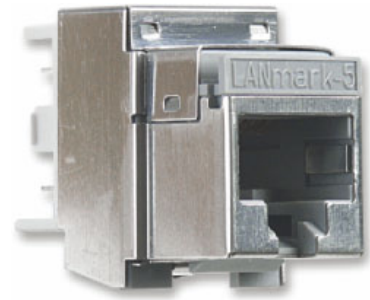
LANmark-5 EVO SnapIn Connector AWG26

Product features

- Especially suited to stranded conductors (Consolidation Point) AWG26 and 27
- Colour-coded in accordance with EIA/TIA 568A and B
- Fast and optimised termination of all 8 cores
- Suitable for modular components
- All services of CAT.5/Class D according to EN 50173:2002 and ISO/IEC 11801:2002 are supported:

- 10BaseT
- Fast Ethernet
- Gigabit Ethernet
- 155 ATM, 622 ATM, 1.2 ATM

Approvals



Article number	Article designation	PU
61102	LANmark-5 EVO SnapIn Connector AWG26	24 pieces

Photographs are not to scale and do not represent detailed images of the respective products.

LANmark-6 EVO SnapIn Connector

Product features

- CAT.6 socket screened incl. EMC cover
- Suitable for AWG 22, 23 and 24
- Colour-coded in accordance with EIA/TIA 568A and B
- Fast and optimised termination of all 8 cores
- Suitable for modular components
- All services of CAT.6/Class E according to EN 50173:2002 and ISO/IEC 11801:2002 are supported:

- 10BaseT
- Fast Ethernet
- Gigabit Ethernet
- 155 ATM, 622 ATM, 1.2 ATM

Approvals



Article number	Article designation	PU
62104	LANmark-6 EVO SnapIn Connector	24 pieces

Photographs are not to scale and do not represent detailed images of the respective products.

LANmark-6 EVO SnapIn Connector AWG26

Product features

- CAT.6 socket screened incl. EMC cover
- Colour-coded in accordance with EIA/TIA 568A and B
- Colour-coded in accordance with EIA/TIA 568A and B
- Fast and optimised termination of all 8 cores
- Suitable for modular components
- All services of CAT.6/Class E according to EN 50173:2002 and ISO/IEC 11801:2002 are supported:

- 10BaseT
- Fast Ethernet
- Gigabit Ethernet
- 155 ATM, 622 ATM, 1.2 ATM

Approvals



Article number	Article designation	PU
62105	LANmark-6 EVO SnapIn Connector AWG26	24 pieces

Photographs are not to scale and do not represent detailed images of the respective products.

LANmark-6 EVO SnapIn Connector 10G



Product features

- Suitable for AWG 22, 23 and 24
- Colour-coded in accordance with EIA/TIA 568A and B
- Fast and optimised termination of all 8 cores
- Suitable for modular components
- All services of CAT.6/Class E according to EN 50173:2002 and ISO/IEC 11801:2002, as well as for 10 Gigabit Ethernet according to IEEE 802.3an draft 1.11, are supported:

- 10BaseT
- Fast Ethernet
- Gigabit Ethernet
- 10Gigabit Ethernet
- 155 ATM, 622 ATM, 1.2 ATM

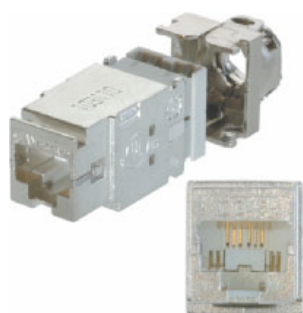
Approvals



Article number	Article designation	PU
62106	LANmark-6 EVO SnapIn Connector 10G	24 pieces

Photographs are not to scale and do not represent detailed images of the respective products.

LANmark-7 GG45 SnapIn Connector



Product features

- CAT.7 GG45 socket screened incl. EMC cover
- Suitable for AWG 22, 23 and 24
- Colour-coded in accordance with EIA/TIA 568A and B
- Fast and optimised termination of all 8 cores
- Suitable for modular components
- All applications defined for CAT.5 / 6 and 7 are supported:

- 10BaseT
- Fast Ethernet
- Gigabit Ethernet
- 10Gigabit Ethernet
- 155 ATM, 622 ATM, 1.2 ATM

Approvals



Article number	Article designation	PU
63103	LANmark-7 GG45 SnapIn Connector	24 pieces

Photographs are not to scale and do not represent detailed images of the respective products.

Comfort Tool



Product features

- This tool is recommended for quick, easy and reliable installation of SnapIn connectors. All 8 cores are terminated in one simple step.
- The marking on the pliers defines the correct stripping dimension.

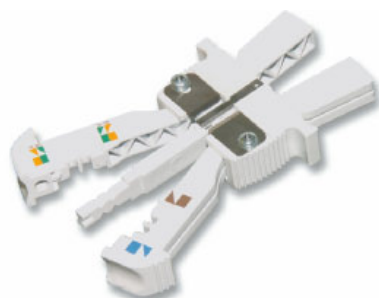
Approvals



Article number	Article designation	PU
60501	Comfort Tool	1 piece

Photographs are not to scale and do not represent detailed images of the respective products.

Easy Termination Tool



Product features

- Precise and fast removal of pair screening in PiMF cables.
- All foils are removed at exactly the same length, ensuring that the distances of the four foil screens match the available space on the GG45.

- The integrated holder for the wire manager simplifies insertion of the cores. Simple handling for quick and reproducible stripping results.
- An application sheet is included. The piercing terminals are adjustable and replaceable.

Approvals



Article number	Article designation	PU
60503	Easy Termination Tool	1 piece

Caution! The Easy Termination Tools are meant for GG45 installation. Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

Patchpanel Modular fix mounting

Product features

- 19" modular patch panel, for fixed installation
- 24 connections with integrated dust-protection caps
- Compatible with all Snap-In Connectors
- Stable metal structure
- Printed numbering system

- Dimensions: 19" - 1RU - 85 mm
- Colour: grey-white (RAL 9002)

Approvals



Article number	Article designation	PU
60024	Patchpanel Modular fix mounting	1 piece

Delivered without snap-in connectors!

Photographs are not to scale and do not represent detailed images of the respective products.

Patchpanel Modular extendable

Product features

- 19" modular patch panel, extendable
- Front screen can be pulled out and swivelled at an angle of 45°, allowing simple and fast installation, as well as simple maintenance (sliding mechanism)
- 24 connections with integrated dust-protection caps
- Compatible with all Snap-In Connectors

- Stable metal structure
- Flexible label for the numbering system
- Dimensions: 19" - 1RU - 125 mm
- Colour: grey-white (RAL 9002)

Approvals



Article number	Article designation	PU
60124	Patchpanel Modular extendable	1 piece

Delivered without snap-in connectors!

Photographs are not to scale and do not represent detailed images of the respective products.

Patchpanel Modular Mini Surface-Mounted

Product features

- Compatible with all Snap-In Connectors
- 12 connections with integrated dust-protection caps
- Compatible with all Snap-In Connectors
- Feed-through possibilities from the front and bottom: two pre-manufactured openings on the back and one pre-manufactured opening in the lower panel permit more flexible feed-through of the cable

- Holes for cable ties for securing the cable
- For use with desktop equipment, in false floors or in cable ducts
- Printed numbering system
- Dimensions (WxHxD): 200 x 40 x 230 mm
- Colour: grey-white (RAL 9002)

Approvals



Article number	Article designation	PU
62112	Patchpanel Modular Mini Surface-Mounted	1 piece

Delivered without snap-in connectors!

Photographs are not to scale and do not represent detailed images of the respective products.

Patchpanel Modular rail mounting

Product features

- Compatible with all Snap-In Connectors
- 6 connections with integrated dust-protection caps
- Compatible with all Snap-In Connectors
- Robust powder-coated metal housing for top-hat rail and wall-mounting
- Strain relief of the cables through strain relief rail, 1 x M20, 1 x PG16 or 1 x PG11 gland

- Dimensions (WxHxD): 50 x 150 x 104 mm
- Protection rating: IP20
- Colour: black

Approvals



Article number	Article designation	PU
60055	Patchpanel Modular rail mounting	1 piece

Delivered without snap-in connectors!

Photographs are not to scale and do not represent detailed images of the respective products.

Outlet Snap-In front module



Suitable Housings

- Surface-Mounted Case (84x84 mm) and coverplate Page 424

Product features

- Kit consisting of back module with Snap-In front module
- The modular housing fits into a wide range of international 45 x 45 cover frames, cable ducts, etc.
- The Snap-In connectors are inserted into the front module using a simple click-in mechanism, and the front module is also mounted into the housing without the use of any tools.
- Compatible with all Snap-In Connectors



Info

- Click, instead of screw-in (tool-free assembly)

- Suitable for both copper and fibre-optic modules
- 2 connectors with integrated dust-protection caps
- Angled outlet
- Colour: pure white (RAL 9010)
- Optional accessory: cover frame with integrated mounting ring

Approvals



Article number	Article designation	PU
60622	Flush-Mounted Outlet 45 Modular	1 piece
60722	Flush-Mounted Outlet 50 Modular	1 piece

Delivered without snap-in connectors!

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Surface-Mounted Case (84x84 mm) and coverplate refer to page 424

Surface-Mounted Case (84x84 mm) and coverplate



Product features

- Surface-mounted housing with integrated flush-mounted cover frame
- Cover frame with integrated mounting ring (2-part)
- Used in areas where concealed installation is not possible or undesirable
- Suitable for data outlet LSA+ CAT.6 (case 50)

- Cover frame also usable for flush-mounted outlet
- Dimensions: 84 x 84 mm
- Height: 40 mm (incl. frame)
- Colour: pure white (RAL 9010)

Approvals



Article number	Article designation	PU
Surface-mounted case		
60632	Surface-Mounted Case 45	1 piece
60732	Surface-Mounted Case 50	1 piece
Cover frame with integrated mounting ring (2-part)		
60652	Surface-Mounted Masking Frame 45	1 piece
60852	Surface-Mounted Masking Frame 50	1 piece

Photographs are not to scale and do not represent detailed images of the respective products.

Keystone Clips for EVO SnapIn Connectors

Product features

- Red keystone clips for LANmark EVO SnapIn with keystone format (wall thickness 1.5 - 1.75 mm)
- Suitable for EVO SnapIn Connectors
- Not suitable for GG45 connectors

Approvals



Article number	Article designation	PU
61203	Keystone Clips for EVO SnapIn Connectors	24 pieces

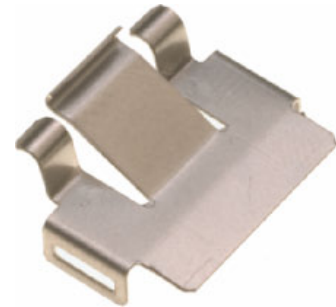
Photographs are not to scale and do not represent detailed images of the respective products.

Keystone Clips for SnapIn Connectors

Product features

- Keystone clips for LANmark SnapIn with keystone format
- Suitable for GG45 Connectors
- Not suitable for EVO SnapIn Connectors

Approvals



Article number	Article designation	PU
61201	Keystone Clips for SnapIn Connectors	24 pieces

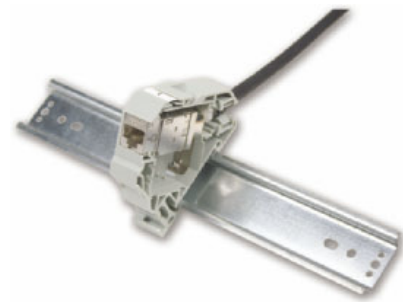
Photographs are not to scale and do not represent detailed images of the respective products.

SnapIn rail mount Adapter

Product features

- Plastic housing including CAT.6 SnapIn Connector
- Suitable for use in industrial applications
- Angled outlet at 45°
- Several adapters can be connected in series
- Covers packed in pairs (right/left)
- Side cover for SnapIn rail adapter (60797)
- Colour: pure white (RAL 9010)

Approvals



Article number	Article designation	PU
60795	SnapIn rail mount Adapter	12 pieces

Photographs are not to scale and do not represent detailed images of the respective products.

Flush-Mounted Outlet LSA+



Suitable Housings

- Surface-Mounted Case (84x84 mm) and coverplate Page 424

Approvals



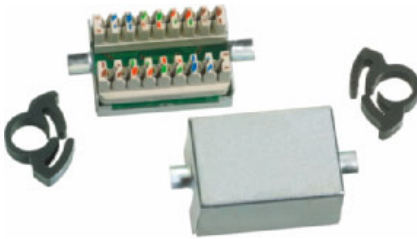
Product features

- Flush-mounted outlet 80 x 80 LSA+ CAT.6
- 2x RJ45 angled outlet
- Colour-coded in accordance with EIA/TIA 568A and B
- Suitable for cable types (AWG 22, 23 and 24)
- Colour: pure white (RAL 9010)

Article number	Article designation	PU
62722	Flush-Mounted Outlet 80x80 LSA+ CAT.6	1 piece

Photographs are not to scale and do not represent detailed images of the respective products.

Data Binder LSA+



Product features

- A data connector allows installation cables to be easily extended and damaged cables to be replaced, without having to reinstall the entire cable network.
- A data connector allows installation cables to be easily extended and damaged cables to be replaced, without having to reinstall the entire cable network.
- Cable inlet 7.5 mm
- Screw-adjustable strain relief
- Adhesive strips for fastening

Approvals



Article number	Article designation	PU
CE6382	Data Binder LSA+ CAT.6	1 piece

Photographs are not to scale and do not represent detailed images of the respective products.

Punch down tool LSA+



Product features

- LSA+ punch-down tool for setting the individual cores on the data outlets or patch panel.
- Cores are set properly in the terminal strip and cut off at the same time.

Approvals



Article number	Article designation	PU
CE5076	Punch down tool LSA+	1 piece

Photographs are not to scale and do not represent detailed images of the respective products.

For communication technology

POF cables	429
PCF cables	432
GOF cables	433
Duplex Jumper and Pigtails	437
Splice boxes, wall distributors and accessories	439
POF cables	431

For communication technology

HITRONIC® cable sets / trunk systems	428
POF cables	
HITRONIC® POF SIMPLEX PE	429
HITRONIC® POF SIMPLEX PE-PUR	429
HITRONIC® POF DUPLEX PE	430
PCF cables	
HITRONIC® POF DUPLEX PE-PUR	431
HITRONIC® BUS PCF DUPLEX indoor + outdoor	432
GOF cables	
HITRONIC® HQN Outdoor Cable	433
HITRONIC® HVN Outdoor Cable	434
HITRONIC® HQW Armoured Outdoor Cable	New 435
HITRONIC® HRH Breakout Cable	436
Duplex Jumper and Pigtails	
Duplex Jumper/Patchcord	437
Simplex Pigtail	438
Splice boxes, wall distributors and accessories	
19" Splice Box for ST	439
19" Splice Box for SC	439
Splice Box Compact	439
Mini Wall mounted Rack	440
Accessories for Splice Box and Wall mounted Rack	440
LWL-Kupplungen	440

HITRONIC®

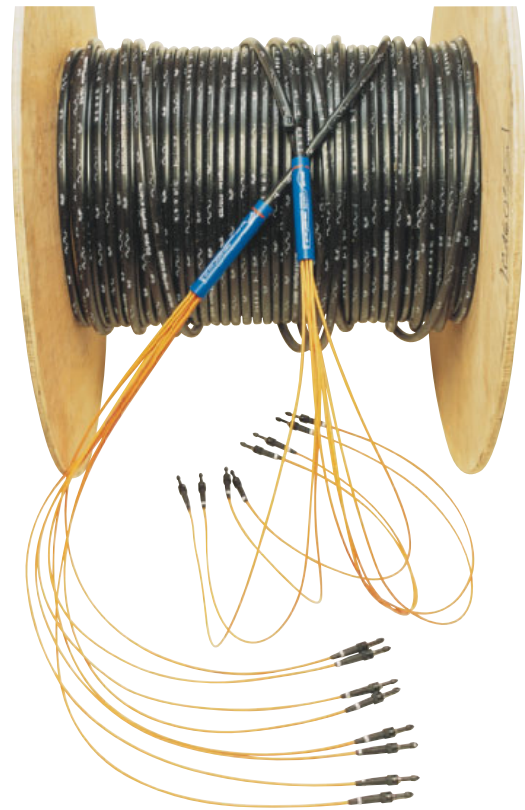
Optical transmission systems



Two different connection types are used with fibre optic cables:

1. Detachable connections realised with plug connectors. In this case it is necessary to attach a plug to a glass fibre. This calls for trained personnel and expensive special tools.
2. Non-detachable connections created by directly splicing two glass fibres together. To do this requires highly trained personnel and very expensive equipment. If the necessary resources are used only occasionally, the investment is very unlikely to pay for itself.

The answer: The Lapp fibre trunk system.



■ Advantages

Using a trunk system offers you the following advantages:

- No costs of special equipment
- No need for highly trained personnel
- Uniform quality thanks to manufacture under laboratory conditions
- Installation is quick, thereby saving costs
- No need to carry out measurements on the cable run, comes with OTDR test certificate
- Fan-out elements also available in IP67

■ Requirements

The following data are needed to produce your tailor-made trunk system:

- Length of cable run (effective run +3 to 5 metres reserve on either side)
- Fibre type (SM 9 µm, MM 50 µm or 62.5 µm)
- Number of fibres (2, 4, 6, 8 ... to 48 fibres)
- Plug type (ST, SC, DIN, E-2000 ... including mixed)
- Cable type (indoor, outdoor, rodent protection etc.)
- Special type on request

HITRONIC® POF SIMPLEX PE



Info

- J-V2Y 1P 980/1000
- Simplex plastic fibre-optic cable for direct connector assembly

Benefits

- Transmission lengths up to 70 m
- Direct connector assembly
- EMC protection
- No crosstalk
- Easy to handle

Application range

- For optical signal transmission in industrial applications
- Very suitable for fixed installation in control cabinets, cable ducts, or pipes with low mechanical stress

Product features

- Halogen-free
- Lightweight design
- High flexibility

Approvals



Design

- Plastic fibre-optic cables
- PE buffer tube
- Without outer sheath
- Colour: black

Technical data

- Optical fibre type**
Core material: PMMA
Cladding material: fluoropolymers
- Temperature range**
Operation: -50°C to +80°C
Installation: -10°C to +50°C
- Permissible bending radius**
Static: ≥ 25 mm
- Permissible tensile force**
Fixed installation: 5 N
Short-term: 15 N

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)	Weight (kg/km)
28000001	HITRONIC® POF SIMPLEX PE	POF	1	2.2	4

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Mille-Tie™ is a registered trademark of Millepede™ International Ltd. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- HITRONIC® POF DUPLEX PE refer to page 430

Accessories

- Mille-Tie™ cable ties refer to page 961
- Damage-free cable bundles through: Mille-Tie™
- Connectors, tools and other accessories are available upon request

HITRONIC® POF SIMPLEX PE-PUR



Info

- J-V2Y(ZN)11Y 1P 980/1000
- Simplex POF cable with strain relief and PUR outer sheath

Benefits

- Transmission lengths up to 70 m
- EMC protection
- No crosstalk
- Easy to handle

Application range

- For optical signal transmission in industrial applications with high mechanical stress

Product features

- Flame-retardant and halogen-free
- Resistant to abrasion, oil, microbes and hydrolysis
- Adhesion-free

Approvals



Design

- Plastic fibre-optic cables
- PE buffer tube
- Aramid yarns as strain relief
- PUR outer sheath, orange (RAL 2003)

Technical data

- Optical fibre type**
Core material: PMMA
Cladding material: fluoropolymers
- Temperature range**
Operation: -20°C to +70°C
Installation: -10°C to +50°C
Storage: -50°C to +80°C
- Permissible bending radius**
Short-term: 30 mm
Fixed installation: 50 mm
- Permissible tensile force**
Fixed installation: 100 N
Short-term: 350 N



Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)	Weight (kg/km)
28020001	HITRONIC® POF SIMPLEX PE-PUR	POF	1	5.5	25

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Mille-Tie™ is a registered trademark of Millepede™ International Ltd. Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- HITRONIC® POF DUPLEX PE-PUR refer to page 431

Accessories

- SMARTSTRIP stripping tool refer to page 907
- Mille-Tie™ cable ties refer to page 961
- Damage-free cable bundles through: Mille-Tie™
- Connectors, tools and other accessories are available upon request

HITRONIC® POF DUPLEX PE



Info

- J-V2Y 2x1 P 980/1000
- Duplex plastic fibre-optic cable for direct connector assembly

Benefits

- Transmission lengths up to 70 m
- Direct connector assembly
- EMC protection
- No crosstalk
- Easy to handle

Application range

- For optical signal transmission in industrial applications
- Very suitable for fixed installation in control cabinets, cable ducts, or pipes with low mechanical stress
- Light mechanical stress
- Identification by white dots

Product features

- Halogen-free
- Lightweight design
- High flexibility

Approvals



Design

- Plastic fibre-optic cables
- Twin cable
- PE buffer tube
- Without outer sheath
- Colour: black

Technical data



Optical fibre type

Core material: PMMA
Cladding material: fluoropolymers



Temperature range

Operation: -50°C to +80°C
Installation: -10°C to +50°C



Permissible tensile force

Fixed installation: 10 N
Short-term: 30 N

Article number	Article designation	Fibre type	Number of fibres	Weight (kg/km)
28000002	HITRONIC® POF DUPLEX PE	POF	2	7.6

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Mille-Tie™ is a registered trademark of Millepede™ International Ltd.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Mille-Tie™ cable ties refer to page 961
- Damage-free cable bundles through: Mille-Tie™
- Connectors, tools and other accessories are available upon request

HITRONIC® POF DUPLEX PE-PUR

Info

- J-V2Y(ZN)11Y 2P 980/1000
- Duplex plastic fibre-optic cable with strain relief and PUR outer sheath



Benefits

- Transmission lengths up to 70 m
- EMC protection
- No crosstalk
- Easy to handle

Application range

- For optical signal transmission in industrial applications with high mechanical stress

Product features

- Flame-retardant and halogen-free
- Resistant to abrasion, oil, microbes and hydrolysis
- Adhesion-free

Approvals



Design

- Plastic fibre-optic cables
- PE buffer tube
- Aramid yarns as strain relief
- PUR outer sheath, orange (RAL 2003)

Technical data

Optical fibre type
Core material: PMMA
Cladding material: fluoropolymers

Temperature range
Operation:
-20 °C to +70 °C (PE-PUR)
-20 °C to +85 °C (Heavy PE-PUR)
Installation: 0 °C to +50 °C
Storage:
-50 °C to +80 °C (PE-PUR)
-30 °C to +95 °C (Heavy PE-PUR)

Permissible bending radius
Static: ≥ 30 mm (PE-PUR), ≥ 50 mm (Heavy PE-PUR)
Dynamic: ≥ 50 mm (PE-PUR), ≥ 80 mm (Heavy PE-PUR)

Permissible tensile force
Fixed installation: 100 N (PE-PUR), 130 N (Heavy PE-PUR)
Short-term: 400 N

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)	Weight (kg/km)
28020002	HITRONIC® POF DUPLEX PE-PUR	POF	2	5.5	28
28030002	HITRONIC® POF DUPLEX HEAVY PE-PUR	POF	2	8.0	28

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Mille-Tie™ is a registered trademark of Millepede™ International Ltd.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SMARTSTRIP stripping tool refer to page 907
- DATA STRIP stripping tool refer to page 907
- Mille-Tie™ cable ties refer to page 961
- Damage-free cable bundles through: Mille-Tie™
- Connectors, tools and other accessories are available upon request

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

HITRONIC® BUS PCF DUPLEX indoor + outdoor



Info

- Polymer-cladded fibre (PCF)
- Standard designation (indoor): J-V(ZN)H11Y 2K200/230
- Standard designation (outdoor): AT-VQ(ZN)HB2Y 2K200/230

Benefits

- Data transmission up to approx. 500 m
- To be used for direct connector assembly
- Easy to assemble
- EMC protection
- High mechanical stability

Application range

- Can be used in industrial environments, for data transmission in field bus systems, such as PROFIBUS, INTERBUS etc.

Product features

- Data transmission up to approx. 500 m
- Usable wavelengths: 650 nm and 850 nm
- In Duplex version
- Good resistance to oil, petrol, acids and alkalis
- PE/PUR outer sheath is halogen-free

Approvals



Design

- 2 step-index fibres PCF 200/230 (Polymer Cladded Fibre)
- DUPLEX cable with fibre core made of quartz glass and a fluorinated polymer (plastic, ETFE) sheath
- Outer sheath: PUR for indoors; PE for outdoors

Technical data

Dimensions
PCF 200/230 µm

Fibre type
Step index fibre

Minimum bending radius
(indoor) 120 mm
(outdoor) 200 mm

Optical values
Attenuation at 850 nm wavelength:
8 dB/km
Bandwidth-length product:
20 MHz x km at 850 nm
Numerical aperture: 0.37

Temperature range
During installation: -5°C to +50°C
Operation: -20°C to +70°C

Permissible tensile force
Fixed installation (indoor): 400 N
Fixed installation (outdoor): 500 N

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)	Weight (kg/km)
2185311	HITRONIC® BUS PCF PUR DUPLEX indoor	PCF	2	8.0	55
2185302	HITRONIC® BUS PCF PE DUPLEX outdoor	PCF	2	10.5	90

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Mille-Tie™ is a registered trademark of Millepede™ International Ltd.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SMARTSTRIP stripping tool refer to page 907
- DATA STRIP stripping tool refer to page 907
- Mille-Tie™ cable ties refer to page 961
- Damage-free cable bundles through: Mille-Tie™

HITRONIC® HQN Outdoor Cable



Info

- A-DQ(ZN)B2Y
- Outdoor cable with central loose tube and non-metallic strain relief

Benefits

- Suitable for direct burial
- Easy to install due to the compact design, high flexibility, robust sheath and small bending radii
- UV and water-resistant
- Zero electromagnetic interference as the cable contains no metal

Application range

- For outdoor use
- Campus backbone
- WAN applications
- Industrial environment
- Methods of Deployment: empty plastic pipes, ducts and trays

Product features

- Central loose tube with up to 24 fibres
- Colour-coded fibres
- Longitudinal watertight
- Rodent-protection
- Robust, halogen-free outer sheath

Approvals



Design

- Glass fibres with primary coating
- Gel-filled loose tube
- Water-blocking reinforced glass yarn strength members
- PE outer sheath
- Colour: black (RAL 9005)

Technical data

- Optical fibre type**
Core material: Glass
Cladding material: Glass
- Temperature range**
Operation: -20 °C to +60 °C
Installation: 0 °C to +50 °C
Storage: -40 °C to +70 °C
- Permissible bending radius**
Static: ≥ 15 x outer diameter
Dynamic: ≥ 20 x outer diameter
- Permissible tensile force**
Fixed installation: 1500 N
Short-term: 3000 N

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)
Multimode G 50 OM3				
27600304	HITRONIC® HQN 1500 4G 50/125 OM3	50/125 OM3	4	7.3
27600308	HITRONIC® HQN 1500 8G 50/125 OM3	50/125 OM3	8	7.3
27600312	HITRONIC® HQN 1500 12G 50/125 OM3	50/125 OM3	12	7.3
27600324	HITRONIC® HQN 1500 24G 50/125 OM3	50/125 OM3	24	8.3
Multimode G 50 OM2				
27600204	HITRONIC® HQN 1500 4G 50/125 OM2	50/125 OM2	4	7.3
27600208	HITRONIC® HQN 1500 8G 50/125 OM2	50/125 OM2	8	7.3
27600212	HITRONIC® HQN 1500 12G 50/125 OM2	50/125 OM2	12	7.3
27600224	HITRONIC® HQN 1500 24G 50/125 OM2	50/125 OM2	24	8.3
Multimode G 62.5 OM1				
27600104	HITRONIC® HQN 1500 4G 62.5/125 OM1	62.5/125 OM1	4	7.3
27600108	HITRONIC® HQN 1500 8G 62.5/125 OM1	62.5/125 OM1	8	7.3
27600112	HITRONIC® HQN 1500 12G 62.5/125 OM1	62.5/125 OM1	12	7.3
27600124	HITRONIC® HQN 1500 24G 62.5/125 OM1	62.5/125 OM1	24	8.3
Singlemode E 9 OS2				
27600904	HITRONIC® HQN 1500 4E 9/125 OS2	9/125 OS2	4	7.3
27600908	HITRONIC® HQN 1500 8E 9/125 OS2	9/125 OS2	8	7.3
27600912	HITRONIC® HQN 1500 12E 9/125 OS2	9/125 OS2	12	7.3
27600924	HITRONIC® HQN 1500 24E 9/125 OS2	9/125 OS2	24	8.3

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
The cables can also be supplied as pre-terminated fibre optic trunks.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Simplex Pigtail refer to page 438
- DATA STRIP stripping tool refer to page 907

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

HITRONIC® HVN Outdoor Cable



Info

- A-DQ(ZN)B2Y
- Outdoor cable with stranded loose tube and non-metallic strain relief

Benefits

- Suitable for direct burial
- Easy to install due to the compact design, high flexibility, robust sheath and small bending radii
- UV and water-resistant
- Zero electromagnetic interference as the cable contains no metal

Application range

- For outdoor use
- Campus backbone
- WAN applications
- Industrial environment
- Methods of Deployment: empty plastic pipes, ducts and trays

Product features

- Stranded loose tube with up to 144 fibres (12 loose tubes with each 12 fibres)
- Colour-coded fibres and loose tubes
- Longitudinal watertight
- Rodent-protection
- Robust, halogen-free outer sheath

Approvals



Design

- Up to 12 stranded gel-filled loose tubes
- Central GRP strength member
- Water-blocking reinforced glass yarn strength members
- PE outer sheath
- Colour: black (RAL 9005)

Technical data



Optical fibre type
Core material: Glass
Cladding material: Glass



Temperature range
Operation: -20 °C to +60 °C
Installation: 0 °C to +50 °C
Storage: -40 °C to +70 °C



Permissible bending radius
Static: ≥ 15 x outer diameter
Dynamic: ≥ 20 x outer diameter



Permissible tensile force
Fixed installation: 5000 N
Short-term: 6000 N

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)
Multimode G 50 OM3				
26600324	HITRONIC® HVN5000 2x12G 50/125 OM3	50/125 OM3	24	11
26600348	HITRONIC® HVN5000 4x12G 50/125 OM3	50/125 OM3	48	11
Singlemode E 9 OS2				
26600924	HITRONIC® HVN5000 2x12 E 9/125 OS2	9/125 OS2	24	11
26600948	HITRONIC® HVN5000 4x12 E 9/125 OS2	9/125 OS2	48	11

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
The cables can also be supplied as pre-terminated fibre optic trunks.
Photographs are not to scale and do not represent detailed images of the respective products.
Other models are available upon request.

New

HITRONIC® HQW Armoured Outdoor Cable



Info

- A-DQ(ZN)(SR)2Y
- Outdoor cable with corrugated steel tape armour, central loose tube and non-metallic strength elements

Benefits

- Armouring provides excellent protection against high mechanical stress and rodents
- Suitable for direct burial
- Easy to install due to the compact design, high flexibility, robust sheath and small bending radii
- UV and water-resistant
- Zero electromagnetic interference as the cable contains no metal

Application range

- For outdoor use
- Campus backbone
- WAN applications
- Industrial environment
- Methods of Deployment: empty plastic pipes, ducts and trays

Product features

- Central loose tube with up to 24 fibres
- Colour-coded fibres
- Longitudinal watertight
- Excellent rodent protection
- Robust, halogen-free outer sheath

Approvals



Design

- Gel-filled loose tube
- Water-blocking reinforced glass yarn strength members
- Corrugated steel tape armour
- PE outer sheath
- Colour: black (RAL 9005)

Technical data

- Optical fibre type**
Core material: Glass
Cladding material: Glass
- Temperature range**
Operation: -20°C to +60°C
Installation: 0 °C to +50 °C
Storage: -40 °C to +70 °C
- Permissible bending radius**
Static: ≥ 15 x outer diameter
Dynamic: ≥ 20 x outer diameter
- Permissible tensile force**
Long-term: 3000 N
Short-term: 5700 N

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)
Multimode G 50 OM3				
27900304	HITRONIC® HQW3000 4G 50/125 OM3	50/125 OM3	4	9.6
27900308	HITRONIC® HQW3000 8G 50/125 OM3	50/125 OM3	8	9.6
27900312	HITRONIC® HQW3000 12G 50/125 OM3	50/125 OM3	12	9.6
27900324	HITRONIC® HQW3000 24G 50/125 OM3	50/125 OM3	24	9.6
Multimode G 50 OM2				
27900204	HITRONIC® HQW3000 4G 50/125 OM2	50/125 OM2	4	9.6
27900208	HITRONIC® HQW3000 8G 50/125 OM2	50/125 OM2	8	9.6
27900212	HITRONIC® HQW3000 12G 50/125 OM2	50/125 OM2	12	9.6
27900224	HITRONIC® HQW3000 24G 50/125 OM2	50/125 OM2	24	9.6
Multimode G 62.5 OM1				
27900104	HITRONIC® HQW3000 4G 62.5/125 OM1	62.5/125 OM1	4	9.6
27900108	HITRONIC® HQW3000 8G 62.5/125 OM1	62.5/125 OM1	8	9.6
27900112	HITRONIC® HQW3000 12G 62.5/125 OM1	62.5/125 OM1	12	9.6
27900124	HITRONIC® HQW3000 24G 62.5/125 OM1	62.5/125 OM1	24	9.6
Singlemode E 9 OS2				
27900904	HITRONIC® HQW3000 4E 9/125 OS2	9/125 OS2	4	9.6
27900908	HITRONIC® HQW3000 8E 9/125 OS2	9/125 OS2	8	9.6
27900912	HITRONIC® HQW3000 12E 9/125 OS2	9/125 OS2	12	9.6
27900924	HITRONIC® HQW3000 24E 9/125 OS2	9/125 OS2	24	9.6

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. The cables can also be supplied as pre-terminated fibre optic trunks. Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

HITRONIC® HRH Breakout Cable



Info

- J-V(ZN)HH
- Breakout cable for direct connector assembly

Benefits

- Suitable for field assembly
- Universal cable for cabling of buildings
- Very easy to install due to compact design, high flexibility, small bending radii and suitable for field assembly
- Zero electromagnetic interference as the cable contains no metal

Application range

- For indoor use
- Tertiary cabling
- Structured cabling - backbone
- Universal cable for cabling of buildings

Product features

- Installation cable with up to 12 Simplex cables
- Flame-retardant and halogen-free
- Highly flexible
- Mechanically robust

Approvals



Design

- 2.1 mm tight-buffered subcable with FRNC sheath
- Subcable identification: numbers
- Aramid yarns as strain relief
- FRNC inner and outer sheaths
- Colour: aqua (RAL 6027) for OM3, orange (RAL 2003) for OM2 and OM1

Technical data



Optical fibre type
Core material: Glass
Cladding material: Glass



Temperature range
Operation: -10°C to +60°C
Installation: 0°C to +50°C
Storage: -20°C to +70°C



Permissible bending radius
Static: ≥ 15 x outer diameter
Dynamic: ≥ 20 x outer diameter

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)
Multimode G 50 OM3				
26000302	HITRONIC® HRH400 2G 50/125 OM3	50/125 OM3	2	7
26000304	HITRONIC® HRH600 4G 50/125 OM3	50/125 OM3	4	7
26000308	HITRONIC® HRH1200 8G 50/125 OM3	50/125 OM3	8	9.7
26000312	HITRONIC® HRH1700 12G 50/125 OM3	50/125 OM3	12	10.3
Multimode G 50 OM2				
26000202	HITRONIC® HRH400 2G 50/125 OM2	50/125 OM2	2	7
26000204	HITRONIC® HRH600 4G 50/125 OM2	50/125 OM2	4	7
26000208	HITRONIC® HRH1200 8G 50/125 OM2	50/125 OM2	8	9.7
26000212	HITRONIC® HRH1700 12G 50/125 OM2	50/125 OM2	12	10.3
Multimode G 62.5 OM1				
26000102	HITRONIC® HRH400 2G 62.5/125 OM1	62.5/125 OM1	2	7
26000104	HITRONIC® HRH600 4G 62.5/125 OM1	62.5/125 OM1	4	7
26000108	HITRONIC® HRH1200 8G 62.5/125 OM1	62.5/125 OM1	8	9.7
26000112	HITRONIC® HRH1700 12G 62.5/125 OM1	62.5/125 OM1	12	10.3

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. The cables can also be supplied as pre-terminated fibre optic trunks. Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- DATA STRIP stripping tool refer to page 907

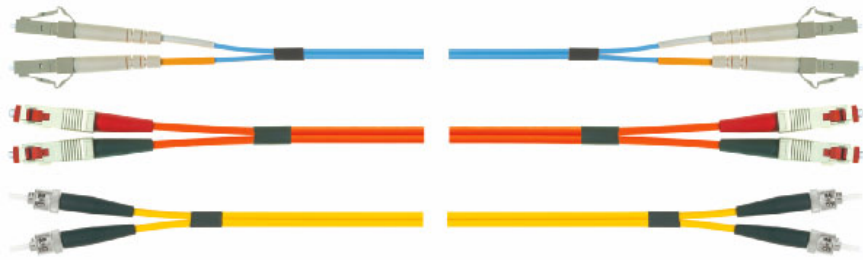
ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX

Duplex Jumper/Patchcord



Info

- J-VH 2x1 G/E
- Pre-terminated tight buffered duplex cable with durable ceramic ferrules



Benefits

- "Plug & Play" connection between any optical devices
- Non-permanent connections allow for easy change of equipment
- Direct connection between two active optical components
- Zero electromagnetic interference as the cable contains no metal

Application range

- For indoor use
- LAN connections

Product features

- Flame-retardant and halogen-free
- High flexibility
- Cable termination with durable ceramic ferrules

Approvals



Design

- Tight-buffered duplex cable with FRNC outer sheath
- Connector: LC, SC or ST
- Cable colour: aqua for multimode OM3, orange for multimode OM2 and OM1, yellow for single-mode OS2
- Standard length: 2 m

Technical data



Optical fibre type
Core material: Glass
Cladding material: Glass



Temperature range
Operation: -20°C to +60°C
Installation: 0°C to +50°C
Storage: -25°C to +70°C



Permissible bending radius
Static: ≥ 30 mm
Dynamic: ≥ 40 mm



Permissible tensile force
Fixed installation: 150 N

Article number	Article designation	PU
Duplex Jumper Singlemode 9 µm		
94841	Duplex Jumper ST/ST 9 µm, 2 m	1 piece
94891	Duplex Jumper SC/SC 9 µm, 2 m	1 piece
94931	Duplex Jumper ST/SC 9 µm, 2m	1 piece
9498	Duplex Jumper LSH APC/LC 9 µm, 2 m	1 piece
9477	Duplex Jumper LSH APC/LSH APC 9 µm, 2m	1 piece
9495	Duplex Jumper LSH APC/SC 9 µm, 2 m	1 piece
Duplex Jumper Multimode 50 µm		
93681	Duplex Jumper ST/ST 50 µm, 2 m	1 piece
93561	Duplex Jumper SC/SC 50 µm, 2 m	1 piece
94641	Duplex Jumper ST/SC 50 µm, 2 m	1 piece
9510	Duplex Jumper MTRJ/MTRJ 50 µm, 2m	1 piece
9513	Duplex Jumper MTRJ/ST 50 µm, 2 m	1 piece
9509	Duplex Jumper LC/LC 50 µm, 2 m	1 piece
9508	Duplex Jumper LC/SC 50 µm, 2 m	1 piece
9501	Duplex Jumper LC/ST 50 µm, 2 m	1 piece
9457	Duplex Jumper LSH/LSH 50 µm, 2 m	1 piece
9511	Duplex Jumper MTRJ/SC 50 µm, 2 m	1 piece
Duplex Jumper Multimode 62,5 µm		
93781	Duplex Jumper ST/ST 62.5 µm, 2 m	1 piece
93581	Duplex Jumper SC/SC 62.5 µm, 2m	1 piece
94651	Duplex Jumper ST/SC 62.5 µm, 2 m	1 piece
9519	Duplex Jumper LC/LC 62.5 µm, 2 m	1 piece
9531	Jumper Duplex LC/ST 62.5 µm, 2 m	1 piece
9521	Duplex Jumper MTRJ/SC 62.5 µm, 2 m	1 piece
9528	Duplex Jumper LC/SC 62.5 µm, 2 m	1 piece
9523	Duplex Jumper MTRJ/ST 62.5 µm, 2 m	1 piece

Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

Simplex Pigtail



Info

- J-VH 1 G/E
- Pre-terminated tight-buffered simplex cable with one durable ceramic ferrule

Benefits

- Create a direct plug connection for installation cables with splicing
- Ease of installation and assembly
- Zero electromagnetic interference as the cable contains no metal

Application range

- For indoor use
- Connection to an end optical device

Product features

- Flame-retardant and halogen-free
- High flexibility
- Cable termination with durable ceramic ferrules
- Set consisting of 12 colour-coded pigtails

Approvals



Design

- Tight-buffered simplex fibre with FRNC secondary coating (900 µm)
- Connector: LC, SC or ST
- Colour-coded primary and secondary coatings
- Standard length: 2 m

Technical data



Optical fibre type

Core material: Glass
Cladding material: Glass



Temperature range

Operation: -20°C to +60°C
Installation: 0°C to +50°C
Storage: -25°C to +70°C



Permissible tensile force

Fixed installation: 150 N

Article number	Article designation	PU
Pigtail Multimode 50 µm		
93911	ST Pigtail Simplex 50 µm, 2m	12 piece
93411	SC Pigtail 50 µm, 2 m	12 piece
Pigtail Multimode 62.5 µm		
93931	ST Pigtail Simplex 62.5 µm, 2 m	12 piece
93441	SC Pigtail Simplex 62.5 µm, 2 m	12 piece
Pigtail Singlemode 9 µm		
93471	ST Pigtail Simplex 9 µm, 2 m	12 piece
93401	SC Pigtail Simplex 9 µm, 2 m	12 piece
9396	LSH APC Pigtail Simplex 9 µm, 2 m	12 piece

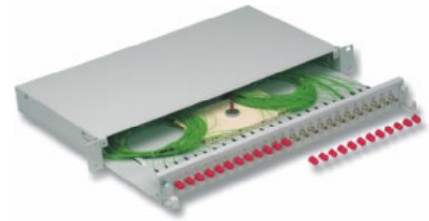
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

19" Splice Box for ST

Product features

- For up to 12 or 24 fibres
- Can be pulled out
- Unpopulated
- For a maximum of 4 splicing cartridges
- Height: 1 RU
- Dimensions (WxHxD): 483 x 44.5 x 244 mm
- Material: sheet steel, 1.5 mm
- Colour: light grey (RAL 7035)

Approvals



Article number	Article designation	PU
Splice Box Compact		
CE9138	19" Splice Box for 12 ST	1 piece
CE9139	19" Splice Box for 24 ST	1 piece

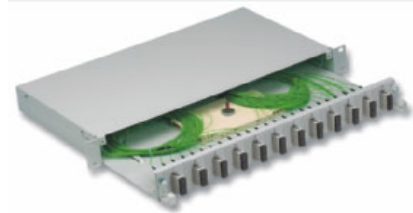
Splice boxes for more fibres with other types of connectors are available upon request. Also available in pre-assembled versions with couplings and pigtails. Photographs are not to scale and do not represent detailed images of the respective products.

19" Splice Box for SC

Product features

- For up to 24 fibres
- Included: front panel with 12 SC-duplex holes
- Can be pulled out
- Unpopulated
- Height: 1 RU
- Dimensions (WxHxD): 483 x 44.5 x 170 mm
- Material: steel plate, 1.5 mm
- Colour: light grey (RAL 7035)

Approvals



Article number	Article designation	PU
Splice Box Compact		
CE9135	19" Splice Box für SC	1 piece

Splice boxes for more fibres with other types of connectors are available upon request. Also available in pre-assembled versions with couplings and pigtails. Photographs are not to scale and do not represent detailed images of the respective products.

Splice Box Compact

Product features

- Panel mounting
- Lockable
- Max. capacity of 8 splicing cartridges or 4 splicing cartridges and one distribution plate
- Includes distributor plate for 8 ST couplings
- Includes distributor plate for 4 SC duplex couplings
- Dimensions (WxHxD): 265 x 150 x 55 mm
- Colour: light grey (RAL 7035)

Approvals



Article number	Article designation	PU
Splice Box Compact		
CE9147	Splice Box Compact	1 piece

Photographs are not to scale and do not represent detailed images of the respective products.

Mini Wall mounted Rack



Product features

- Panel mounting
- Lockable
- Max. capacity of 8 splicing cartridges or 4 splicing cartridges and one distribution plate
- Accessories for Mini wall-mounted rack:
 - Distributor plate for 24 ST couplings
 - Distributor plate for 24 SC Simplex couplings
 - Distributor plate for 12 SC Duplex couplings
- Dimensions (W x H x D): 320 x 280 x 54 mm
- Colour: light grey (RAL 7035)

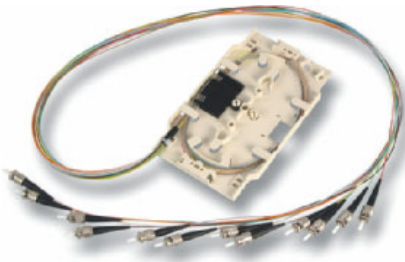
Approvals



Article number	Article designation	PU
CE9150	Mini Wall mounted Rack	1 piece
Accessories for Mini wall-mounted rack		
CE9151	Distribution plate for 24 x ST-Couplers	1 piece
CE9152	Distribution plate for 24 x SC-simplex-Couplers	1 piece
CE9153	Distribution plate for 12 x SC-duplex-Couplers	1 piece

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories for Splice Box and Wall mounted Rack



Product features

- Splicing cassette for up to 2 splicing protection holders
- Cover for splicing cartridge
- 12-fold splicing protection holder
- Splicing protection sleeve for ANT splicing device
- Dummy cap instead of E2000 coupling
- Dummy cap instead of ST coupling
- Dummy cap instead of SC duplex coupling

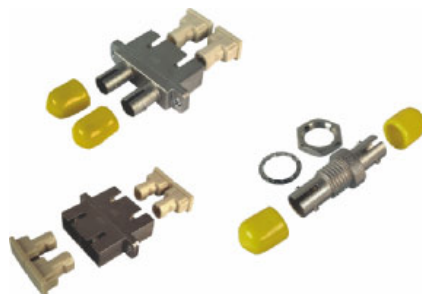
Approvals



Article number	Article designation	PU
Accessories for splice boxes and wall-mounted rack		
CE9914	Splicing cartridge for up to 2 splicing protection hold	1 piece
CE9914D	Cover for splicing cartridge	1 piece
CE9916	Splicing protection holder 12-fold	1 piece
CE9913	Splicing protection sleeve for ANT splicing device	15 pieces
CE9917	Blind cap instead of E2000 coupling	10 pieces
CE9918	Blind cap instead of ST coupling	10 pieces
CE9919	Blind cap instead of SC duplex coupling	10 pieces

Photographs are not to scale and do not represent detailed images of the respective products.

LWL-Kupplungen



Product features

- The couplings connect the glass fibre connectors with the same or different connector types.

Approvals



Article number	Article designation	PU
Multimode		
CE93191	SC / SC Duplex-Adapter for 50 µm or 62.5 µm	4 piece
CE94611	SC / SC Duplex-Adapter for 50 µm or 62.5 µm	4 piece
CE9462	LC / LC Duplex-Adapter for 50 µm or 62.5 µm	4 piece
CE9441	SC / ST Duplex-Adapter for 50 µm or 62.5 µm	4 piece
CE9449	MTRJ / MTRJ Simplex-Adapter for 50 µm or 62.5 µm	4 piece
Singlemode		
CE94591	SC / SC Duplex-Coupler for 9 µm	4 piece
CE9460	SC / ST Duplex-Adapter for 9 µm	4 piece
CE9009	E2000 / E2000 Simplex-Adapter for 9 µm	4 piece
CE9011	E2000 / E2000 Simplex-Adapter B* for 9 µm	4 piece
CE9458	LC / LC Duplex-Adapter for 9 µm	4 piece

Photographs are not to scale and do not represent detailed images of the respective products.

Rectangular connectors

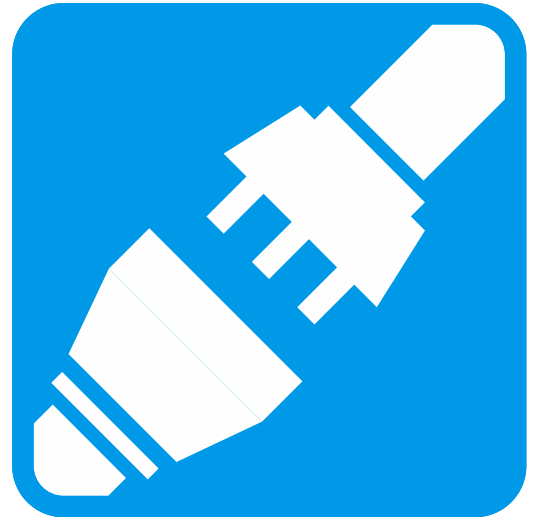
EPIC® H-A Inserts	450
EPIC® STA inserts	453
EPIC® H-Q 5 / H-D 8 Inserts	456
EPIC® H-D Inserts	457
EPIC® H-DD Inserts	462
EPIC® H-BE Inserts	465
EPIC® H-EE Inserts	471
EPIC® H-BS Inserts	474
EPIC® H-BVE Inserts	475
EPIC® TB-H-BE Terminal adapter	476
EPIC® MC Modules	477
EPIC® MCR Frames	485
EPIC® Contacts + tools	486
EPIC® H-Q contacts, tools, accessories	496
EPIC® H-A 3 Housings	497
EPIC® H-A 10 Housings	502
EPIC® H-A 16 Housings	508
EPIC® H-A 32 Housings	514
EPIC® H-A 48 Housings	519
EPIC® ULTRA H-B 6	521
EPIC® ULTRA H-B 10	523
EPIC® ULTRA H-B 16	524
EPIC® ULTRA H-B 24	525
EPIC® H-B 6 Housings	526
EPIC® H-B 10 Housings	532
EPIC® H-B 16 Housings	545
EPIC® H-B 24 Housings	559
EPIC® H-B 32 Housings	573
EPIC® H-B 48 Housings	576
EPIC® Housing accessories	579
EPIC® Rectangular Kits	583
EPIC® H-Q inserts	593
EPIC® H-Q housings	594
EPIC® H-Q contacts, tools, accessories	596

Circular connectors

EPIC® CIRCON M23 Housings	597
EPIC® CIRCON M23 Inserts	602
EPIC® CIRCON M23 Contacts, tools, accessories	608
EPIC® M23	609
EPIC® ZYLIN R 3.0	611
EPIC® ZYLIN R3.0 tools, accessories	613
EPIC® CIRCON LS1	614
EPIC® CIRCON LS1 Contacts, tools, accessories	622
EPIC® LS1.5	623
EPIC® LS1.5 Contacts, tools, accessories	626
EPIC® LS3	627
EPIC® LS3 Contacts, tools, accessories	629
EPIC® LS1	630
EPIC® POWERLOCK CRIMP 660A	632
EPIC® POWERLOCK Contacts, tools, accessories	635
EPIC® POWERLOCK SCREW 400A	636
EPIC® POWERLOCK Contacts, tools, accessories	639

Solar connectors

EPIC® SOLAR 4 THIN	640
EPIC® SOLAR	641



Rectangular connectors

EPIC® Solutions for many applications	444	EPIC® MC Dummy Module	480	EPIC® H-A 16 TBF-LB	513
EPIC® CIRCON	446	EPIC® MC Module: Koax 3pole	481	EPIC® H-A 16 TBFH-LB	513
EPIC® Contacts, Tools, Accessories	447	EPIC® MC Module: PROFIBUS DP	481	EPIC® H-A 32 Housings	
EPIC® CIRCON	449	EPIC® MC Module: Universal Bus	481	EPIC® H-A 32 TG	514
EPIC® H-A Inserts		EPIC® MC Module: RJ45	482	EPIC® H-A 32 TGB	514
EPIC® H-A 3	450	EPIC® CE6326 Connector RJ45	483	EPIC® H-A 32 TS	515
EPIC® H-A 4	450	EPIC® MC Module Pneumatic 1pole	484	EPIC® H-A 32 TSB	515
EPIC® H-A 10	451	EPIC® MC Module Pneumatic 2pole	484	EPIC® H-A 32 AG	516
EPIC® H-A 16	451	EPIC® MC Module removal tool	484	EPIC® H-A 32 AD-BO	516
EPIC® H-A 32	452	EPIC® MCR Frames		EPIC® H-A 32 SGR	517
EPIC® H-A 48	452	EPIC® MCR 6	485	EPIC® H-A 32 SGRL	517
EPIC® STA inserts		EPIC® MCR 10	485	EPIC® H-A 32 SDR-BO	518
EPIC® STA 6 Screw termination	453	EPIC® MCR 16	485	EPIC® H-A 32 SDRL-BO	518
EPIC® STA 6 Solder termination	453	EPIC® MCR 24	485	EPIC® H-A 32 TBF	518
EPIC® STA 14 Screw termination	454	EPIC® Contacts + tools		EPIC® H-A 48 Housings	
EPIC® STA 14 Solder termination	454	EPIC® M-D 1.0 D-Sub stamped		EPIC® H-A 48 TG	519
EPIC® STA 20 Screw termination	455	contacts-on-reel	486	EPIC® H-A 48 TS	519
EPIC® STA 20 Solder termination	455	EPIC® Tools for M-D 1,0 D-Sub		EPIC® H-A 48 AG	520
EPIC® H-Q 5 / H-D 8 Inserts		contacts-on-reel stamped	486	EPIC® H-A 48 SGR	520
EPIC® H-Q 5	456	EPIC® H-D 1.6 machined contacts	487	EPIC® H-A 48 SGRL	520
EPIC® H-D 8	456	EPIC® Tools for contacts H-D 1.6		EPIC® ULTRA H-B 6	
EPIC® H-D Inserts		machined	487	EPIC® ULTRA H-B 6 TG LB	New 521
EPIC® H-D 7 machined	457	EPIC® H-D 1.6 stamped contacts	488	EPIC® ULTRA H-B 6 TS LB	New 521
EPIC® H-D 7 stamped	457	EPIC® Tools for contacts H-D 1.6 stamped	488	EPIC® ULTRA H-B 6 AG LB	New 522
EPIC® H-D 15 machined	458	EPIC® H-D 1.6 stamped contacts-on-reel	489	EPIC® ULTRA H-B 6 SGR LB	New 522
EPIC® H-D 15 stamped	458	EPIC® Tools for contacts-on-reel H-D 1.6		EPIC® ULTRA H-B 10	
EPIC® H-D 25 machined	459	stamped	489	EPIC® ULTRA H-B 10 TS QB	New 523
EPIC® H-D 25 stamped	459	EPIC® H-BE 2.5 machined contacts	490	EPIC® ULTRA H-B 10 AG QB	New 523
EPIC® H-D 40 machined	460	EPIC® Tools for contacts H-BE 2.5		EPIC® ULTRA H-B 16	
EPIC® H-D 40 stamped	460	machined	490	EPIC® ULTRA H-B 16 TS QB	New 524
EPIC® H-D 64 machined	461	EPIC® MC 2.5 machined contacts	491	EPIC® ULTRA H-B 16 AG QB	New 524
EPIC® H-D 64 stamped	461	EPIC® Tools for contacts MC 2.5		EPIC® ULTRA H-B 24	
EPIC® H-DD Inserts		machined	491	EPIC® ULTRA H-B 24 TS QB	New 525
EPIC® H-DD 24	462	EPIC® MC 2.5 stamped contacts	492	EPIC® ULTRA H-B 24 AG QB	New 525
EPIC® H-DD 42	462	EPIC® Tools for contacts MC 2.5 stamped	492	EPIC® H-B 6 Housings	
EPIC® H-DD 72	463	EPIC® MC 2.5 stamped contacts-on-reel	493	EPIC® H-B 6 TG	526
EPIC® H-DD 108	463	EPIC® Tools for contacts-on-reel MC 2.5		EPIC® H-B 6 TGH	526
EPIC® H-DD 144	464	stamped	493	EPIC® H-B 6 TS	526
EPIC® H-DD 216	464	EPIC® MC 3.6 machined contacts	494	EPIC® H-B 6 TSH	527
EPIC® H-BE Inserts		EPIC® Tools for contacts MC 3.6		EPIC® H-B 6 AG-LB	527
EPIC® H-BE 6 Screw termination	465	machined	494	EPIC® H-B 6 AD-LB	527
EPIC® H-BE 6 Crimp termination	465	EPIC® MC Coax-Contacts	495	EPIC® H-B 6 SGR-LB	528
EPIC® H-BE 6 Cage clamp	465	EPIC® Tools for contacts MC Coax	495	EPIC® H-B 6 SGRL-LB	528
EPIC® H-BE 10 Screw termination	466	EPIC® H-Q contacts, tools, accessories		EPIC® H-B 6 SGRH-LB	528
EPIC® H-BE 10 Crimp termination	466	EPIC® H-Q Contacts	New 496	EPIC® H-B 6 SGRLH-LB	529
EPIC® H-BE 10 Cage clamp	466	EPIC® H-Q Cable Glands	496	EPIC® H-B 6 SDR-LB	529
EPIC® H-BE 16 Screw termination	467	EPIC® H-Q Accessories	496	EPIC® H-B 6 SDRL-LB	529
EPIC® H-BE 16 Crimp termination	467	EPIC® H-A 3 Housings		EPIC® H-B 6 SDRH-LB	530
EPIC® H-BE 16 Cage clamp	467	EPIC® H-A 3 Hood Metal straight entry	497	EPIC® H-B 6 SDRLH-LB	530
EPIC® H-BE 24 Screw termination	468	EPIC® H-A 3 Hood Thermoplastic		EPIC® H-B 6 TBF-LB	531
EPIC® H-BE 24 Crimp termination	468	straight entry	497	EPIC® H-B 6 TBFH-LB	531
EPIC® H-BE 24 Cage clamp	468	EPIC® H-A 3 Hood Metal side entry	498	EPIC® H-B 10 Housings	
EPIC® H-BE 32 Screw termination	469	EPIC® H-A 3 Hood Thermoplastic		EPIC® H-B 10 TG-RO	532
EPIC® H-BE 32 Crimp termination	469	side entry	498	EPIC® H-B 10 TGH-RO	532
EPIC® H-BE 32 Cage clamp	469	EPIC® H-A 3 Panel Mount Base (straight)	499	EPIC® H-B 10 TS-RO	532
EPIC® H-BE 48 Screw termination	470	EPIC® H-A 3 Panel Mount Base with cover	499	EPIC® H-B 10 TSH-RO	533
EPIC® H-BE 48 Crimp termination	470	EPIC® H-A 3 Panel Mount Base (angled)	499	EPIC® H-B 10 TG	533
EPIC® H-BE 48 Cage clamp	470	EPIC® H-A 3 Surface Mount Base	500	EPIC® H-B 10 TGH	533
EPIC® H-EE Inserts		EPIC® H-A 3 Surface Mount Base		EPIC® H-B 10 TGB	534
EPIC® H-EE 10	471	(open bottom)	500	EPIC® H-B 10 TGBH	534
EPIC® H-EE 18	471	EPIC® H-A 3 Cable Coupler Hood metal		EPIC® H-B 10 TS	534
EPIC® H-EE 32	472	(straight entry)	501	EPIC® H-B 10 TSH	535
EPIC® H-EE 46	472	EPIC® H-A 3 Cable Coupler Hood		EPIC® H-B 10 TSB	535
EPIC® H-EE 64	473	Thermoplastic (straight entry)	501	EPIC® H-B 10 TSBH	535
EPIC® H-EE 92	473	EPIC® H-A 10 Housings		EPIC® H-B 10 AG-LB	536
EPIC® H-BS Inserts		EPIC® H-A 10 TG	502	EPIC® H-B 10 AD-LB	536
EPIC® H-BS 6	474	EPIC® H-A 10 TGH	502	EPIC® H-B 10 AG	536
EPIC® H-BS 12	474	EPIC® H-A 10 TS	503	EPIC® H-B 10 AD-BO	536
EPIC® H-BVE Inserts		EPIC® H-A 10 TSH	503	EPIC® H-B 10 AGS-LB	537
EPIC® H-BVE 3	475	EPIC® H-A 10 AG-LB	504	EPIC® H-B 10 SGR-LB	537
EPIC® H-BVE 6	475	EPIC® H-A 10 AD-LB	504	EPIC® H-B 10 SGRL-LB	537
EPIC® H-BVE 10	475	EPIC® H-A 10 SGR-LB	505	EPIC® H-B 10 SGRH-LB	538
EPIC® TB-H-BE Terminal adapter		EPIC® H-A 10 SGR-LB	505	EPIC® H-B 10 SGRLH-LB	538
EPIC® TB-H-BE 16	476	EPIC® H-A 10 SDR-LB	506	EPIC® H-B 10 SDR-LB	538
EPIC® TB-H-BE 24	476	EPIC® H-A 10 SDRL-LB	506	EPIC® H-B 10 SDRL-LB	539
EPIC® MC Modules		EPIC® H-A 10 TBF-LB	507	EPIC® H-B 10 SDRH-LB	539
EPIC® MC Module: High Current 1+PE	477	EPIC® H-A 10 TBFH-LB	507	EPIC® H-B 10 SDRLH-LB	539
EPIC® MC Module: High Current 2pole	477	EPIC® H-A 16 Housings		EPIC® H-B 10 SGR	540
EPIC® MC Module: High Voltage 3pole	477	EPIC® H-A 16 TG	508	EPIC® H-B 10 SGRL	540
EPIC® MC Module: High Voltage 4+PE	478	EPIC® H-A 16 TGH	508	EPIC® H-B 10 SGRH	540
EPIC® MC Module: 3pole	478	EPIC® H-A 16 TS	509	EPIC® H-B 10 SGRLH	541
EPIC® MC Module: HE 4pole	478	EPIC® H-A 16 TSH	509	EPIC® H-B 10 SDR-BO	541
EPIC® MC Module: Cage clamp 4pole	479	EPIC® H-A 16 AG-LB	510	EPIC® H-B 10 SDRL-BO	541
EPIC® MC Module: 5pole	479	EPIC® H-A 16 AD-LB	510	EPIC® H-B 10 SDRH-BO	542
EPIC® MC Module: 10pole	479	EPIC® H-A 16 SGR-LB	511	EPIC® H-B 10 SDRLH-BO	542
EPIC® MC Module: 10pole stamped	480	EPIC® H-A 16 SGRL-LB	511	EPIC® H-B 10 TBF-LB	543
EPIC® MC Module: 20pole	480	EPIC® H-A 16 SDR-LB	512	EPIC® H-B 10 TBFH-LB	543
		EPIC® H-A 16 SDRL-LB	512	EPIC® H-B 10 TBF	543

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

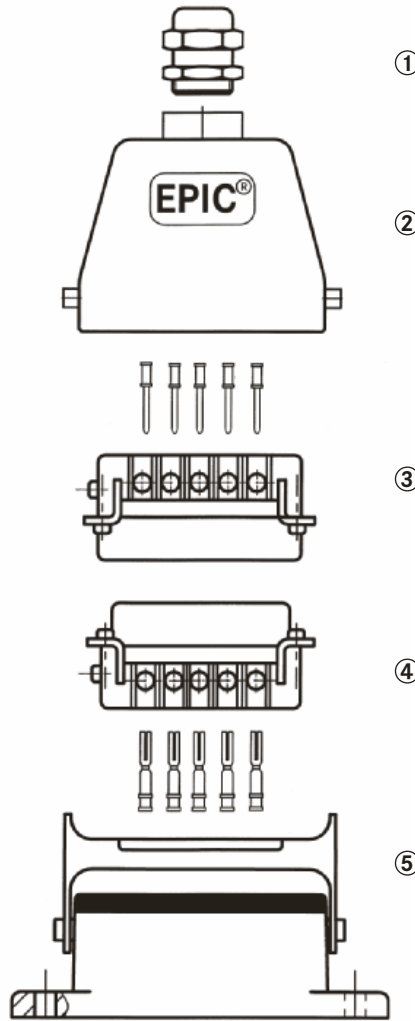
EPIC® H-B 10 TBFH	544	EPIC® H-B 48 TG	576	EPIC® ZYLIN R 3.0	
EPIC® H-B 16 Housings		EPIC® H-B 48 TS	576	EPIC® ZYLIN R 3.0 D PG16	611
EPIC® H-B 16 TG-RO	545	EPIC® H-B 48 AG-LB	577	EPIC® ZYLIN R 3.0 F PG16	611
EPIC® H-B 16 TGH-RO	545	EPIC® H-B 48 AD-LB	577	EPIC® ZYLIN R 3.0 A	611
EPIC® H-B 16 TS-RO	545	EPIC® H-B 48 SGR-LB	577	EPIC® ZYLIN R 3.0 B1	612
EPIC® H-B 16 TSH-RO	546	EPIC® H-B 48 SGRL-LB	578	EPIC® ZYLIN R 3.0 B2	612
EPIC® H-B 16 TG	546	EPIC® H-B 48 SDR-LB	578	EPIC® ZYLIN R 3.0 G1	612
EPIC® H-B 16 TG 2X	546	EPIC® H-B 48 SDRL-LB	578	EPIC® ZYLIN R3.0 tools, accessories	
EPIC® H-B 16 TGH	547	EPIC® Housing accessories		EPIC® ZYLIN R 3.0 Tools	613
EPIC® H-B 16 TGH 2X	547	EPIC® QUICK & EASY Mounting system	579	EPIC® ZYLIN R 3.0 Accessories	613
EPIC® H-B 16 TGB	548	EPIC® QUICK & EASY Accessories	579	EPIC® CIRCON LS1	
EPIC® H-B 16 TGBH	548	EPIC® Flat gaskets for housings		EPIC® LS1 A1 6 contacts	614
EPIC® H-B 16 TS	548	H-A und H-B	580	EPIC® LS1 A3 6 contacts	614
EPIC® H-B 16 TSH	549	EPIC® Fixing screws	580	EPIC® LS1 G5 6 contacts	615
EPIC® H-B 16 TSB	549	EPIC® Coding parts	580	EPIC® LS1 A6 6 contacts	615
EPIC® H-B 16 TSBH	549	EPIC® Protective cover H-A 3	581	EPIC® LS1 D6 6 contacts	616
EPIC® H-B 16 AG-LB	550	EPIC® Protective cover H-A	581	EPIC® LS1 D6 6 contacts (short)	616
EPIC® H-B 16 AD-LB	550	EPIC® Protective cover H-B	581	EPIC® LS1 F6 6 contacts	617
EPIC® H-B 16 AG	550	EPIC® Cover plates	582	EPIC® LS1 F7 6 contacts	617
EPIC® H-B 16 AD-BO	551	EPIC® Adapter plates for 1 D-Sub insert	582	EPIC® LS1 A1 8 contacts	618
EPIC® H-B 16 SGR-LB	551	EPIC® Adapter plates for 2 D-Sub inserts	582	EPIC® LS1 A3 8 contacts	618
EPIC® H-B 16 SGRL-LB	551	EPIC® Locking levers	582	EPIC® LS1 G5 8 contacts	619
EPIC® H-B 16 SGRH-LB	552	EPIC® Rectangular Kits		EPIC® LS1 A6 8 contacts	619
EPIC® H-B 16 SGRLH-LB	552	EPIC® H-A 3 Kits Thermoplastic	583	EPIC® LS1 D6 8 contacts	620
EPIC® H-B 16 SDR-LB	552	EPIC® H-A 3 Kits Metal	584	EPIC® LS1 D6 8 contacts (short)	620
EPIC® H-B 16 SDRL-LB	553	EPIC® H-A 4 Kits Thermoplastic	585	EPIC® LS1 F6 8 contacts	621
EPIC® H-B 16 SDRH-LB	553	EPIC® H-A 4 Kits Metal	586	EPIC® LS1 F7 8 contacts	621
EPIC® H-B 16 SDRLH-LB	553	EPIC® H-A 10 Kits	587	EPIC® CIRCON LS1 Contacts, tools, accessories	
EPIC® H-B 16 SGR	554	EPIC® H-A 16 Kits	588	EPIC® LS1 Contacts male	622
EPIC® H-B 16 SGRL	554	EPIC® H-BE 6 Kits	589	EPIC® LS1 Contacts female	622
EPIC® H-B 16 SGRH	554	EPIC® H-BE 10 Kits	590	EPIC® LS1 Tools	622
EPIC® H-B 16 SGRLH	555	EPIC® H-BE 16 Kits	591	EPIC® LS1 Accessories	622
EPIC® H-B 16 SDR-BO	555	EPIC® H-BE 24 Kits	592	EPIC® LS1.5	
EPIC® H-B 16 SDRL-BO	555	EPIC® H-Q inserts		EPIC® LS1.5 A1	New 623
EPIC® H-B 16 SDRH-BO	556	EPIC® H-Q 4+2	New 593	EPIC® LS1.5 A3	New 623
EPIC® H-B 16 SDRLH-BO	556	EPIC® H-Q 8	New 593	EPIC® LS1.5 A6	New 624
EPIC® H-B 16 TBF-LB	557	EPIC® H-Q 17	New 593	EPIC® LS1.5 D6	New 624
EPIC® H-B 16 TBFH-LB	557	EPIC® H-Q housings		EPIC® LS1.5 F6	New 625
EPIC® H-B 16 TBF	557	EPIC® Q Hood Plastic	New 594	EPIC® LS1.5 Contacts, tools, accessories	
EPIC® H-B 16 TBFH	558	EPIC® H-Q Panel Base Plastic	New 594	EPIC® LS1.5 Contacts male	New 626
EPIC® H-B 24 Housings		EPIC® H-Q Panel Base angled Plastic	New 594	EPIC® LS1.5 Contacts female	New 626
EPIC® H-B 24 TG-RO	559	EPIC® H-Q Surface Mount Base Plastic	New 595	EPIC® LS1.5 Tools	New 626
EPIC® H-B 24 TGH-RO	559	EPIC® H-Q Cable Coupler Plastic	New 595	EPIC® LS3	
EPIC® H-B 24 TS-RO	559	EPIC® H-Q Hood Metal	New 595	EPIC® LS3 A1	New 627
EPIC® H-B 24 TSH-RO	560	EPIC® H-Q Panel Base Metal	New 595	EPIC® LS3 D6	New 627
EPIC® H-B 24 TG	560	EPIC® H-Q contacts, tools, accessories		EPIC® LS3 F6	New 628
EPIC® H-B 24 TG 2X	560	EPIC® H-Q Contacts	New 596	EPIC® LS3 Contacts, tools, accessories	
EPIC® H-B 24 TGH	561	EPIC® H-Q Cable Glands	New 596	EPIC® LS3 Contacts male	New 629
EPIC® H-B 24 TGH 2X	561	EPIC® H-Q Accessories	New 596	EPIC® LS3 Contacts female	New 629
EPIC® H-B 24 TGB	562	Circular connectors		EPIC® LS3 Tools	New 629
EPIC® H-B 24 TGBH	562	EPIC® CIRCON M23 Housings		EPIC® LS1	
EPIC® H-B 24 TS	562	EPIC® M23 A1	597	EPIC® LS1 Kits 6pole	630
EPIC® H-B 24 TSH	563	EPIC® M23 A1 D3,2	597	EPIC® LS1 Kits 8pole	631
EPIC® H-B 24 TSB	563	EPIC® M23 A3	597	EPIC® POWERLOCK CRIMP 660A	
EPIC® H-B 24 TSBH	563	EPIC® M23 D6	598	EPIC® POWERLOCK A1 C	632
EPIC® H-B 24 AG-LB	564	EPIC® M23 F6	598	EPIC® POWERLOCK A6 C	632
EPIC® H-B 24 AD-LB	564	EPIC® M23 F7	598	EPIC® POWERLOCK D6 C	633
EPIC® H-B 24 AG	564	EPIC® M23 G4	599	EPIC® POWERLOCK F6 C	633
EPIC® H-B 24 AD-BO	564	EPIC® M23 G5	599	EPIC® POWERLOCK BOX C	634
EPIC® H-B 24 SGR-LB	565	EPIC® M23 G6	599	EPIC® POWERLOCK Contacts, tools, accessories	
EPIC® H-B 24 SGRL-LB	565	EPIC® M23 B1	600	EPIC® POWERLOCK Crimp contacts	635
EPIC® H-B 24 SGRH-LB	566	EPIC® M23 B2	600	EPIC® POWERLOCK Tools	635
EPIC® H-B 24 SGRLH-LB	566	EPIC® M23 O1	600	EPIC® POWERLOCK Accessories	635
EPIC® H-B 24 SDR-LB	567	EPIC® M23 C2	601	EPIC® POWERLOCK SCREW 400A	
EPIC® H-B 24 SDRH-LB	567	EPIC® CIRCON M23 Inserts		EPIC® POWERLOCK A1 S	636
EPIC® H-B 24 SDR-BO	569	EPIC® M23 Inserts 12 pole D-Sub	602	EPIC® POWERLOCK A6 S	636
EPIC® H-B 24 SDRL-BO	569	EPIC® M23 Inserts 17 pole D-Sub	602	EPIC® POWERLOCK D6 S	637
EPIC® H-B 24 SDRH-BO	570	EPIC® M23 Inserts 12 pole PCB-soldering	603	EPIC® POWERLOCK F6 S	637
EPIC® H-B 24 SDRLH-BO	570	EPIC® M23 Inserts 17 pole PCB-soldering	603	EPIC® POWERLOCK BOX S	638
EPIC® H-B 24 TBF-LB	571	EPIC® M23 Inserts 6 pole	604	EPIC® POWERLOCK Contacts, tools, accessories	
EPIC® H-B 24 TBFH-LB	571	EPIC® M23 Inserts 7 pole	604	EPIC® POWERLOCK Screw Contacts	639
EPIC® H-B 24 TBF	571	EPIC® M23 Inserts 8+1 pole	605	EPIC® POWERLOCK Tools	639
EPIC® H-B 24 TBFH	572	EPIC® M23 Inserts 9 pole	605	EPIC® POWERLOCK Accessories	639
EPIC® H-B 32 Housings		EPIC® M23 Inserts 12 pole	606		
EPIC® H-B 32 TG	573	EPIC® M23 Inserts 16 pole	606	Solar connectors	
EPIC® H-B 32 TG 2X	573	EPIC® M23 Inserts 17 pole	607	EPIC® SOLAR 4 THIN	
EPIC® H-B 32 TS	573	EPIC® CIRCON M23 Contacts, tools, accessories		EPIC® SOLAR 4 Thin M pre-assembled	New 640
EPIC® H-B 32 AG	574	EPIC® M23 Contacts male	608	EPIC® SOLAR 4 THIN F pre-assembled	New 640
EPIC® H-B 32 SGR	574	EPIC® M23 Contacts female	608	EPIC® SOLAR	
EPIC® H-B 32 SGR	574	EPIC® M23 Tools	608	EPIC® SOLAR Module Box	641
EPIC® H-B 32 SGRL	574	EPIC® M23 Accessories	608	EPIC® SOLAR Module Box with cables	641
EPIC® H-B 32 TBFH	575	EPIC® M23			
EPIC® H-B 48 Housings		EPIC® M23 Kits 12pole	609		
		EPIC® M23 Kits 17pol.	610		

Please pay attention to the EPIC® Selection table A10, this table is a great guide in helping you to find the right insert and suitable housings for your application. Please also pay attention to the new, complete configured Connector-Kits.

Solutions for many applications:

- Number of poles from 2 up to 216
- Currents up to 82A
- Voltages up to 1000V
- Modular system for current supply, signal-/data transmission and compressed air
- Termination technologies: solder, screw, crimp, cage clamp

- **Tip:** for inserts with screw termination please use the processing tool (Chapter: Tools)



1. Cable Gland:

The Cable Gland provides a seal between the cable and the connector housing. It may also be used to offer additional functions like strain relief and braid continuity for EMC protection.

2. Hood:

The connector housing for the cable entry.

3. Male insert:

Types of contact termination

- Screw
- Crimp (contacts must be ordered separately)
- Cage clamp

4. Female insert:

Types of contact termination

- Screw
- Crimp (contacts must be ordered separately)
- Cage clamp

5. Base:

- Panel mounting (cable entry through cut out in panel)
- or
- Surface mounting (cable entry through a gland into the side of the connector base)
- or
- Cable Connector Hood, cable to cable connection

Screw connection technology (as DIN EN 60999)				
Screw thread	M3	M4	M5	M6
Starting torque Nm	0.5	1.2	2.0	2.5
Clamping screw: H-A, H-BE, H-BVE	•			
Clamping screw: H-BS		•		
Grounding screw: H-A, H-BE, H-BVE		•		
Grounding screw: H-BS			•	
Clamping screw: Module High-Current				•
Fixing screw: Inserts and Module frames	•			

All EPIC® connectors refer to IEC 61984

Please pay attention to the EPIC® Selection table A10, this table is a great guide in helping you to find the right insert and the suitable housings for your application. Please pay attention to the new, complete configured Connector-Kits.

Solutions for many applications:

- Housing variations for cable connection and for the assembly on devices
- Degree of protection max. IP 65 (locked, depends on the cable gland). Therefore we recommend to use a brass cable gland with integrated sealing ring, for example: **SKINTOP® MS...**

Housings with cover:
IP 40, locked max. IP 65

Housings H-A 3: max. IP 65 (locked, depends on the cable gland)

- Housing material and colors:
Aluminium alloy: grey, similar RAL 7001, Zinc die cast (H-A 3):
grey, similar RAL 7001
Thermoplastics (H-A 3):
grey, similar RAL 7035
Thermoplastics (H-A 3):
black, similar RAL 7021

Hood:

A hood may have a top or angle (side) entry of different PG sizes to accommodate a wide range of cable diameters. The hood can be mated with either a surface or panel mounting base, or a cable coupler hood (for cable to cable connection).



Socket housing:

The surface base is a complete enclosure only offering cable entry through a cable gland mounted either on one or both sides of the base.



Panel Base housing:

The panel base is wired from below through a hole cut in a panel. The panel base is attached to the surface of a control panel for connection of control or power cables.

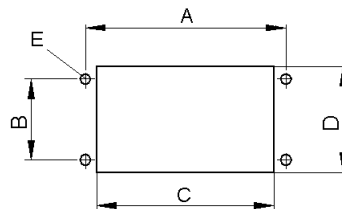


Cable Connector Hood:

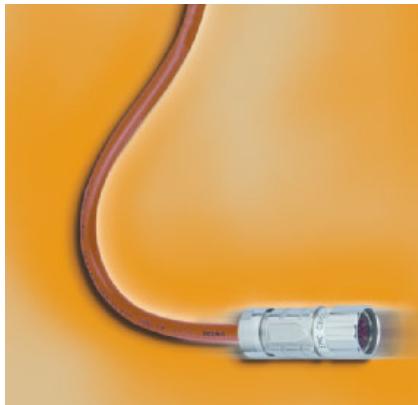
The cable connector hood mates with a top entry hood to offer cable to cable connection. This is frequently used to extend cables.



Panel cut out for panel mount base (mm)					
Panel mount base	A	B	C	D	E
H-A 3	30	—	21	21	3,3
H-A 10	70	17,5	57,5	24	3,6
H-A 16	86	17,5	73,7	24	3,6
H-A 32	92	42	74,2	48,4	4,3
H-A 48	110	65	85,5	71	5,5
H-B 6	70	32	52,2	35	4,3
H-B 10	83	32	65,2	35	4,3
H-B 16	103	32	85,5	35	4,3
H-B 24	130	32	112,2	35	4,3
H-B 32	110	65	85,5	71	5,5
H-B 48	148	70	117	82	7



EPIC® CIRCON LS1



EPIC® CIRCON Material	
Housing	Zinc die cast nickel plated
Insulation body	PA - UL 94 V-0
Sealing	FPM
Other metal parts	Brass nickel plated
Contacts	Brass gold plated

- Unique marking system:
 - a) by means of coloured marking clips or
 - b) alternatively by individual markable labels
 The DYMO® marking system provides easy handling. The labels cannot be erased and cannot be lost.
- With integrated EMC screen
- Corrosion-tested; for use in rough environment
- Large cable clamping range with proved lamella-technology
- Clear visible and tangible allocation when mating
- Vibration tested; perfectly suitable for electric drives and moving parts

Technical Data

Rated current:

1 mm contacts:
7 A for 1.0 mm²
2 mm contacts:
26 A for 4.0 mm²

Rated voltage:

1 mm contacts: 250 V
2 mm contacts: 630 V

Rated impulse voltage:

1 mm contacts: 4 kV
2 mm contacts: 6 kV

Pollution degree:

3, according to DIN EN 61984

Overvoltage category:

3

Cross sections:

1 mm contacts:
0.14 - 1.0 mm² crimp
AWG 18 - 24 crimp
2 mm contacts:
0.5 - 4.0 mm² crimp
AWG 12 - 20 crimp

mating cycles:

500



Range of temperature:

-25°C - +125°C

Circular connectors:

according to DIN EN 61984

Degree of protection:

IP 68 (10 h/1 m), highest protection against the penetration of dust and water

DYMO® is a registered trademark of SANFORD GmbH

EPIC® CIRCON M23



- One connector for all current data cables, cable clamp range 7 - 13,5mm
- Reduced number of parts, insert is appropriate for the use of pin and socket contacts
- Safe and easy keying of the connector through exchangeable coloured keying rings
- All housings with exchangeable keying
- Inserts can be inserted from the front or backside giving it a high flexibility in assembly

Technical Data

Pollution degree:

3, according to DIN EN 61984

Overvoltage category:

3

Cross sections:

1 mm contacts: crimp: 0.14 - 1.0 mm²
AWG 18 - 24, solder: up to 1 mm²
up to AWG 18

Mating cycles:

100



Range of temperature:

-25°C - +125°C

Circular connectors:

according to DIN EN 61984

Degree of protection:

IP 68 (10 h/1 m), highest protection against the penetration of dust and water

Technical Data according DIN EN 61984:

Type	Rated current	Rated voltage	Rated impulse voltage
2 mm contacts (2,5 mm²):			
6 pole	18 A	150 V	4,0 kV
7 pole	18 A	150 V	4,0 kV
8+1 pole	20 A	150 V	2,5 kV
1 mm contacts (1,0 mm²):			
8+1 pole	7 A	150 V	2,5 kV
9 pole	7 A	150 V	1,5 kV
12 pole	7 A	100 V	1,5 kV
16 pole	7 A	100 V	1,5 kV
17 pole	7 A	50 V	0,8 kV

The crimping tool and the crimping machine could be equipped with several crimping dies, suitable to the different EPIC® contacts on the next pages. Both are compatible with most of the crimping dies and locators of the Universal Crimping tool „PEW 12“, shown in chapter Cable Accessoires.

Locator and crimping dies are not included and must be ordered separately, depending on your application. All component parts, which are necessary for crimping the several EPIC® contacts, are listed next to these contacts on the following pages.

EPIC® Crimping machine 11147000

- Approved, robust crimping tool
- Crimping tool in tool case
- Locator and crimping dies are not included and must be ordered separately



Pneumatic Crimping machine 11147001

- small but powerful, robust, pneumatic table crimping machine with a crimping force of 25 kN
- Locator and crimping dies are compatible to of the crimping tool 11147000
- Locator and crimping dies are not included and must be ordered separately
- For proper pressing operation and repeatable crimping results
- 360°-rotatable carrier for the mounting of the crimping dies – ideal for left- and right-handed people
- Maintenance-free operation, approved working-pressure: 5 – 10 bar
- Crimping range: 0.08 – 50 mm² (depending on the crimping dies)
- Dimensions: w x d x h: 28 cm x 32.5cm x 50 cm
- Weight: approximately 30 kg



Further order data for EPIC® tools see next pages

EPIC® 4-Indent-Crimping Tool 11148000 and digital 11148001



EPIC® 4-Indent-Crimping Tool 11148000

- Approved, robust crimping tool
- Crimping tool in case
- Locator is not included and must be ordered separately

EPIC® 4-Indent-Crimping Tool digital 11148001

- Digital version of the standard crimping tool for a convenient adjusting and verification of the crimping parameter
- Locator is not included and must be ordered separately
- stored in a handy plastic case
- a tool family that cares for a wide cable range
- micro setting of indenters and display up to 0.01 mm tolerance
- digital readout to avoid setting errors
- different setting parameters selectable, e.g. mm/inch indication, selector positions acc. to MIL
- locator offers positions for 12 different contacts
- calibration/reset by means of enclosed go - no go gauge
- forced locking system and synchronous drive of indenters for highly reliable crimp connections

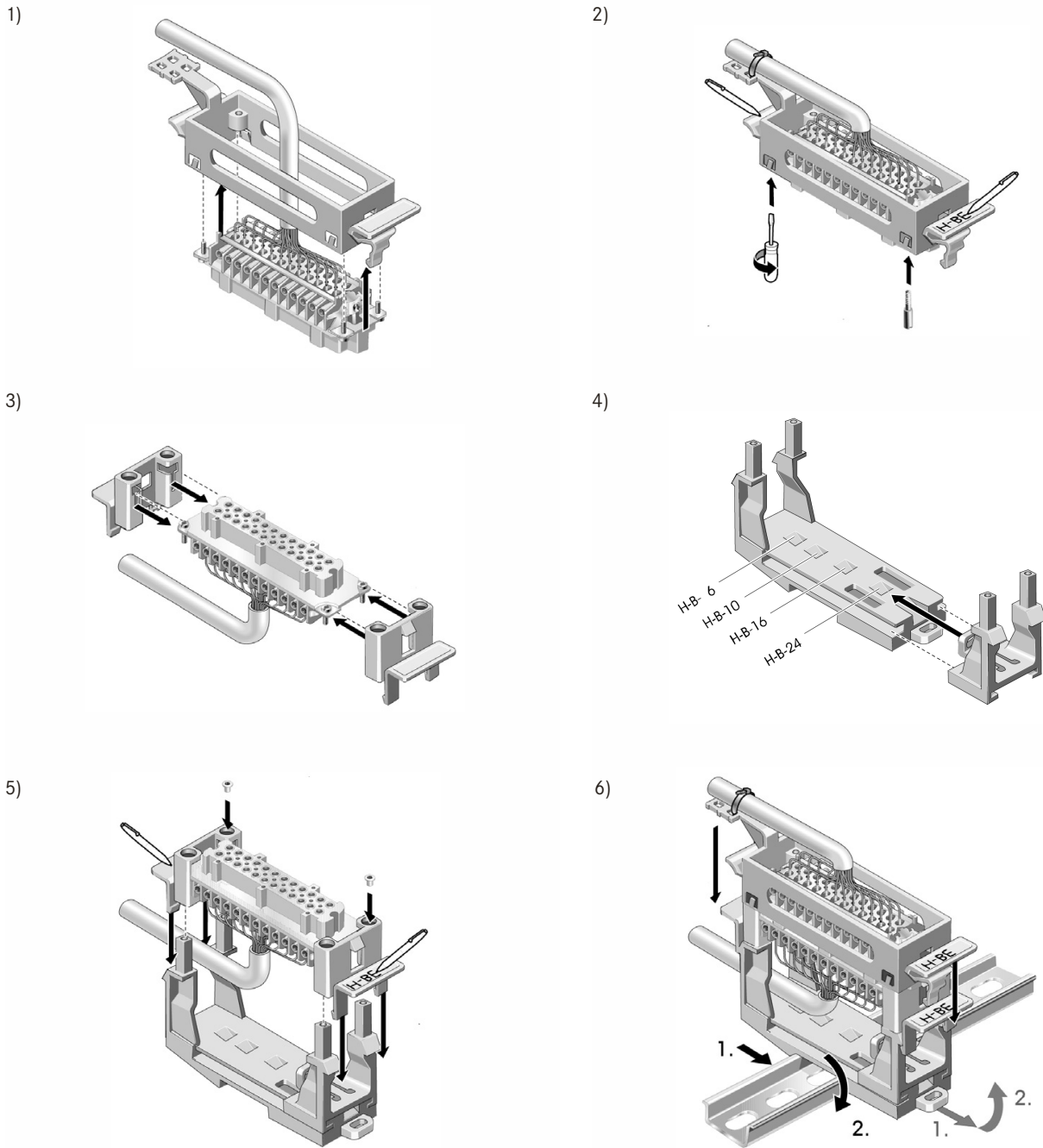
Pneumatic 4-Indent-Crimping machine 11148002



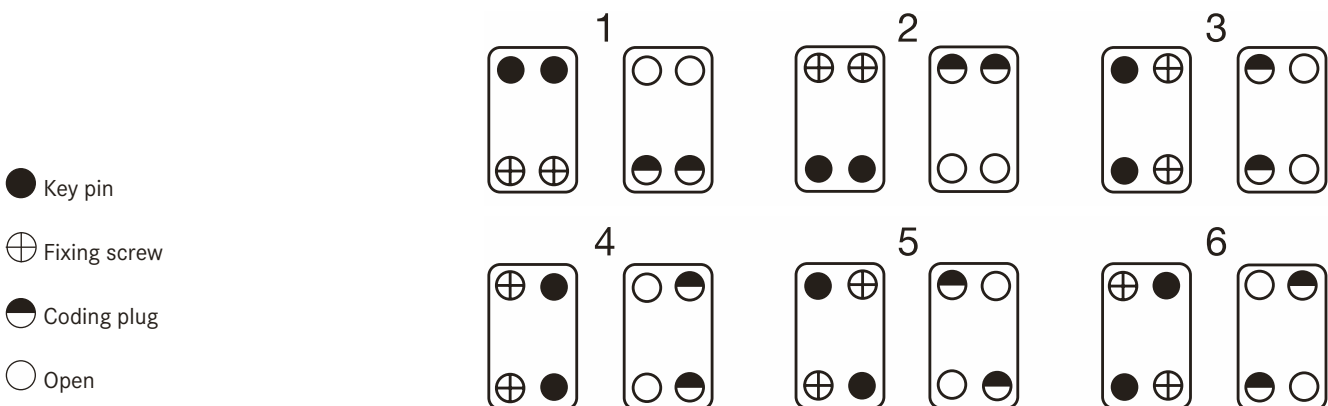
- small but powerful, robust, pneumatic 4-Indent-table crimping machine
- pre-assembled with all necessary parts for crimping the EPIC®-contacts on the following pages
- Locator is not included and must be ordered separately
- for cross-section 0.14 – 6.0 mm²
- crimping machine with a crimping force of 25 kN
- for proper pressing operation and repeatable crimping results
- Micro-setting up to 0.01 mm tolerance
- Maintenance-free operation, approved working-pressure: 5 – 10 bar
- Crimping range: 0.08 – 50 mm² (depending on the crimping dies)
- Dimensions: w x d x h: 28 cm x 32.5 cm x 50 cm
- Weight: approximately 30 kg

Further order data for EPIC® tools see next pages

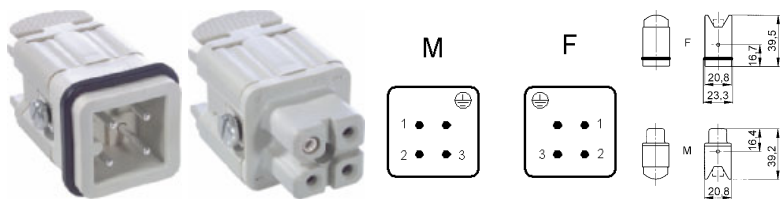
Mounting instruction for Quick + Easy



Key positions for Quick + Easy



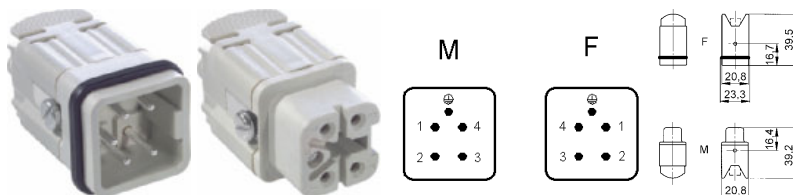
EPIC® H-A 3



Info

- Straight cable entry from the rear

EPIC® H-A 4



Info

- Straight cable entry from the rear

Suitable housing:

- EPIC® H-A 3 Housings Page 497
- Refer to Selection Table A10 to select the required inserts and housings

Benefits

EPIC® H-A 3

- H-A inserts with screw termination up to 2.5 mm² wire cross section
- The small H-A 3s are used whenever there is minimal space. Screw termination with straight cable entrance from the rear

EPIC® H-A 4

- H-A inserts with screw termination up to 2.5 mm² wire cross section
- The small H-A 4s are used wherever space is at a minimum. Screw termination with straight cable insertion from the rear

Technical data

Rated voltage (V)

IEC: 400 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

4 kV

Rated current (A)

IEC: 23 A
UL: 10 A
CSA: 10 A

Degree of soiling

3

Contact resistance

1.5 - 4 mohm

Contacts

Copper alloy, hard silver-plated

Number of contacts

EPIC® H-A 3
3 + PE
EPIC® H-A 4
4 + PE

Termination methods

Screw termination: 0.5 - 2.5 mm² (2.5 mm² with conductor end sleeves depending on the crimping profile)

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



VDE-tested

Certified production control: VDE-REG. no. 437

Application range

- Machine and equipment manufacturing
- Control engineering

Suitable tools

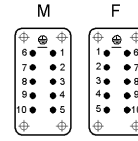
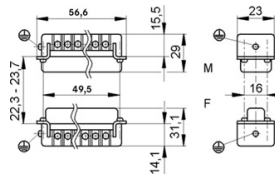
EPIC® H-A 3

- MULTICRIMP 6 crimping pliers refer to page 915
- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 976

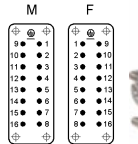
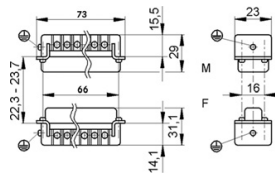
Article number	Article	Version	Contacts	Pieces / PU
H-A 3 screw termination				
10420000	H-A 3 SS	male	1 - 3	10
10421000	H-A 3 BS	female	1 - 3	10
H-A 4 screw termination				
10431000	H-A 4 SS	male	1 - 4	10
10432000	H-A 4 BS	female	1 - 4	10

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



EPIC® H-A 10



EPIC® H-A 16

Suitable housing:

EPIC® H-A 10

- EPIC® H-A 10 Housings Page 502

EPIC® H-A 16

- EPIC® H-A 16 Housings Page 508
- Refer to Selection Table A10 to select the required inserts and housings

Benefits

EPIC® H-A 10

- The proven EPIC® H-A 10 inserts for connection to cross-sections of up to 2.5 mm² in compact housings.

EPIC® H-A 16

- The proven EPIC® H-A 16 inserts for connection to cross-sections of up to 2.5 mm² in compact housings.

Technical data

Rated voltage (V)

IEC: 250 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

4 kV

Rated current (A)

IEC: 16 A
UL: 14 A
CSA: 16 A

Degree of soiling

3

Contact resistance

1.5 - 4 mohm

Contacts

Copper alloy, hard silver-plated

Number of contacts

EPIC® H-A 10

10 + PE

EPIC® H-A 16

16 + PE

Termination methods

Screw termination: 0.5 - 2.5 mm² (2.5 mm² with conductor end sleeves depending on the crimping profile)

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



VDE-tested

Certified production control: VDE-REG. no. 437

Application range

- Machine and equipment manufacturing
- Control engineering

Suitable tools

EPIC® H-A 10

- MULTICRIMP 6 crimping pliers refer to page 915
- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 976

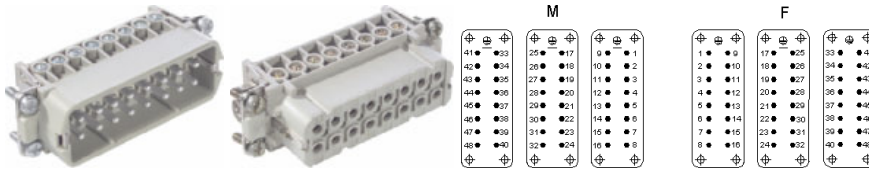
Article number	Article	Version	Wire protection	Contacts	Pieces / PU
H-A 10 screw termination					
10440100	H-A 10 SS	male	yes	1 - 10	5
10441100	H-A 10 BS	female	yes	1 - 10	5
10440000	H-A 10 SS	male		1 - 10	5
10441000	H-A 10 BS	female		1 - 10	5
H-A 16 screw termination					
10530000	H-A 16 SS	male	yes	1 - 16	5
10531000	H-A 16 BS	female	yes	1 - 16	5
10532000	H-A 16 SS	male		1 - 16	5
10533000	H-A 16 BS	female		1 - 16	5

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-A 32



EPIC® H-A 48



Suitable housing:

EPIC® H-A 32

- EPIC® H-A 32 Housings Page 514

EPIC® H-A 48

- EPIC® H-A 48 Housings Page 519
- Refer to Selection Table A10 to select the required inserts and housings

Benefits

- The proven EPIC® H-A 16 inserts for connection to cross-sections of up to 2.5 mm² in compact housings.

Application range

- Machine and equipment manufacturing
- Control engineering

Suitable tools

EPIC® H-A 32

- MULTICRIMP 6 crimping pliers refer to page 915
- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 976

Technical data

Rated voltage (V)

IEC: 250 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

4 kV

Rated current (A)

IEC: 16 A
UL: 14 A
CSA: 16 A

Degree of soiling

3

Contact resistance

1.5 - 4 mohm

Contacts

Copper alloy, hard silver-plated

Number of contacts

16 + PE

Termination methods

Screw termination: 0.5 - 2.5 mm² (2.5 mm² with conductor end sleeves depending on the crimping profile)

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



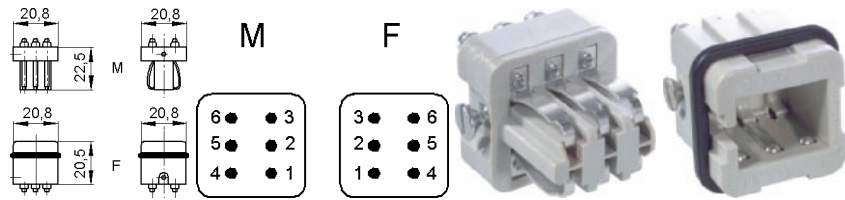
VDE-tested

Certified production control: VDE-REG. no. 437

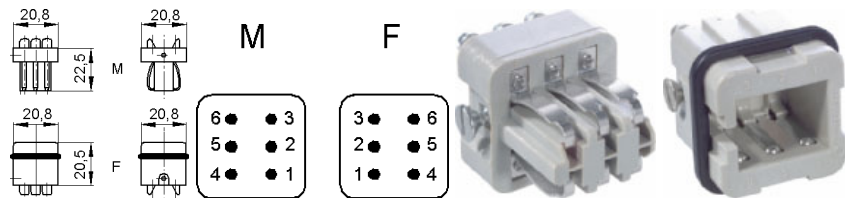
Article number	Article	Version	Wire protection	Contacts	Pieces / PU
H-A 32 screw termination					
10540000	H-A 16 SS	male	yes	17 - 32	5
10530000	H-A 16 SS	male	yes	1 - 16	5
10541000	H-A 16 BS	female	yes	17 - 32	5
10531000	H-A 16 BS	female	yes	1 - 16	5
10542000	H-A 16 SS	male		17 - 32	5
10532000	H-A 16 SS	male		1 - 16	5
10543000	H-A 16 BS	female		17 - 32	5
10533000	H-A 16 BS	female		1 - 16	5
H-A 48 screw termination					
10540100	H-A 16 SS	male	yes	33 - 48	5
10541100	H-A 16 BS	female	yes	33 - 48	5
10542100	H-A 16 SS	male		33 - 48	5
10543100	H-A 16 BS	female		33 - 48	5

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® STA 6 Screw termination



EPIC® STA 6 Solder termination



Suitable housing:

- EPIC® H-A 3 Housings Page 497
- Refer to Selection Table A10 to select the required inserts and housings

Benefits

- STA inserts - proven by the strong contact springs.
- The proven STA inserts for screw termination and solder termination.

Application range

- Control systems
- Rack technology
- Electronic laboratory

Technical data

Rated voltage (V)
IEC: 24 V AC, 60 V DC
UL: 48 V
CSA: 48 V

Rated current (A)
IEC: 10 A
UL: 10 A
CSA: 10 A

Degree of soiling
2

Contact resistance
< 3 mOhm

Contacts
Copper alloy, tinned

Number of contacts
6

Termination methods
EPIC® STA 6 Screw termination
Screw termination: 0.5 - 1.5 mm²
EPIC® STA 6 Solder termination
Solder termination: up to 1.5 mm²

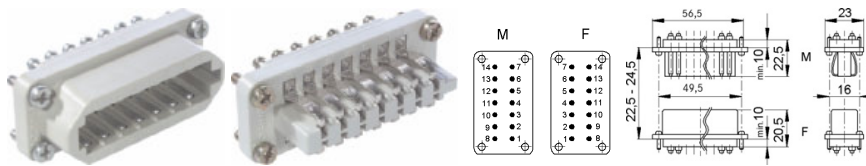
Cycle of mechanical operation
100

Temperature range
-40°C - +80°C

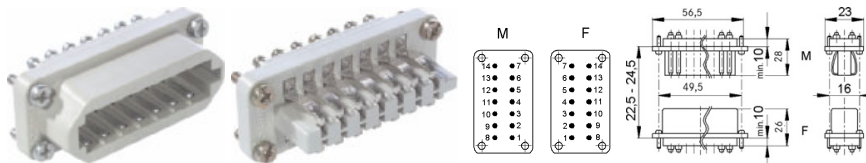
Article number	Article	Version	Contacts	Pieces / PU
STA 6 screw termination				
10486100	STA 6 SS	male	1 - 6	10
10488100	STA 6 FS	Spring	1 - 6	10
STA 6 solder termination				
10485200	STA 6 SL	male	1 - 6	10
10487200	STA 6 FL	Spring	1 - 6	10

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® STA 14 Screw termination



EPIC® STA 14 Solder termination



Suitable housing:

- EPIC® H-A 10 Housings Page 502
- Refer to Selection Table A10 to select the required inserts and housings

Benefits

- STA inserts - proven by the strong contact springs.
- The proven STA inserts for screw termination and solder termination.

Application range

- Control systems
- Rack technology
- Electronic laboratory

Technical data

Rated voltage (V)
 IEC: 24 V AC, 60 V DC
 UL: 48 V
 CSA: 48 V

Rated current (A)
 IEC: 7.5 A
 UL: 7.5 A
 CSA: 7.5 A

Degree of soiling
 2

Contact resistance
 < 3 mOhm

Contacts
 Copper alloy, tinned

Number of contacts
 14

Termination methods
EPIC® STA 14 Screw termination
 Screw termination: 0.5 - 1.5 mm²
EPIC® STA 14 Solder termination
 Solder termination: up to 1.5 mm²

Cycle of mechanical operation
 100



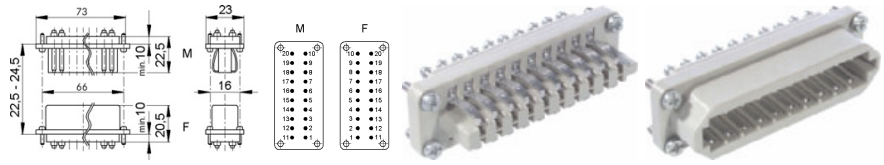
Temperature range
 -40°C - +80°C

Article number	Article	Version	Contacts	Pieces / PU
STA 14 screw termination				
10491100	STA 14 SS	male	1 - 14	5
10493100	STA 14 FS	Spring	1 - 14	5
STA 14 solder termination				
10490200	STA 14 SL	male	1 - 14	5
10492200	STA 14 FL	Spring	1 - 14	5

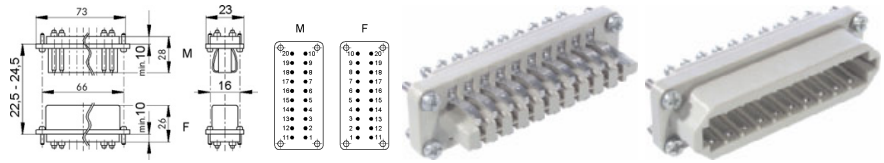
Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® STA 20 Screw termination



EPIC® STA 20 Solder termination



Suitable housing:

- EPIC® H-A 16 Housings Page 508
- Refer to Selection Table A10 to select the required inserts and housings

Benefits

- STA inserts - proven by the strong contact springs.
- The proven STA inserts for screw termination and solder termination.

Application range

- Control systems
- Rack technology
- Electronic laboratory

Technical data

Rated voltage (V)
IEC: 24 V AC, 60 V DC
UL: 48 V
CSA: 48 V

Rated current (A)
IEC: 7 A
UL: 7 A
CSA: 7 A

Degree of soiling
2

Contact resistance
< 3 mOhm

Contacts
Copper alloy, tinned

Number of contacts
20

Termination methods
EPIC® STA 20 Screw termination
Screw termination: 0.5 - 1.5 mm²
EPIC® STA 20 Solder termination
Solder termination: up to 1.5 mm²

Cycle of mechanical operation
100



Temperature range
-40 °C - +80 °C

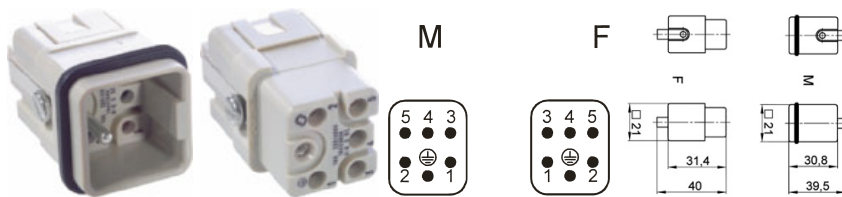
Article number	Article	Version	Contacts	Pieces / PU
STA 20 screw termination				
10501100	STA 20 SS	male	1 - 20	5
10503100	STA 20 FS	Spring	1 - 20	5
STA 20 solder termination				
10500200	STA 20 SL	male	1 - 20	5
10502200	STA 20 FL	Spring	1 - 20	5

Photographs are not to scale and do not represent detailed images of the respective products.

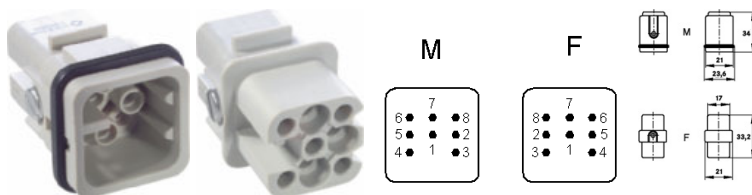
Rectangular connectors

EPIC® H-Q 5 / H-D 8 Inserts

EPIC® H-Q 5



EPIC® H-D 8



Suitable housing:

EPIC® H-Q 5

- EPIC® H-A 3 Housings Page 497
- EPIC® H-BE 2.5 machined contacts Page 490

EPIC® H-D 8

- EPIC® H-A 3 Housings Page 497
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

EPIC® H-Q 5

- EPIC® H-BE 2.5 machined contacts Page 490

EPIC® H-D 8

- EPIC® H-D 1.6 machined contacts Page 487

Benefits

EPIC® H-Q 5

- Small H-Q 5 inserts with machined crimp contacts up to 2.5 mm².
- With five working contacts in the proven crimp technology and one PE contact with screw termination.

EPIC® H-D 8

- Inserts of the connector series H-D are designed for applications in which a high number of contacts are required.

Application range

- Machine and equipment manufacturing
- Control engineering

Technical data

Rated voltage (V)

EPIC® H-Q 5
IEC: 230 V / 400 V

UL: 600 V
CSA: 600 V

EPIC® H-D 8

IEC: 24 V (AC)/60 V (DC) metal housing; 250 V thermoplastic housing;
UL: 250 V

Rated impulse voltage

EPIC® H-Q 5
4 kV

EPIC® H-D 8
2.5 kV

Rated current (A)

EPIC® H-Q 5
IEC: 16 A
UL: 16 A

EPIC® H-D 8
IEC: 10 A
UL: 10 A

Degree of soiling
3

Contact resistance

< 2 mOhm

Contacts

Copper alloy, hard silver/gold-plated

Number of contacts

EPIC® H-Q 5

5 + PE

EPIC® H-D 8

8

Termination methods

EPIC® H-Q 5

Crimp termination: 0.5 - 2.5 mm²

EPIC® H-D 8

Crimp termination: 0.14 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



VDE-tested

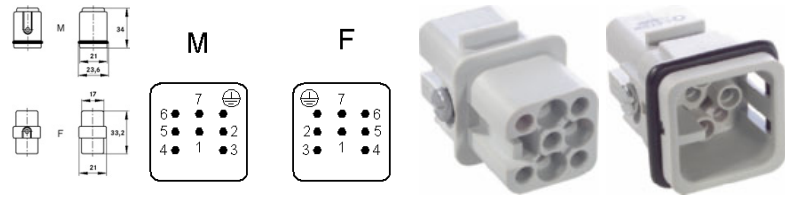
EPIC® H-D 8

Certified production control: VDE-REG. no. 437

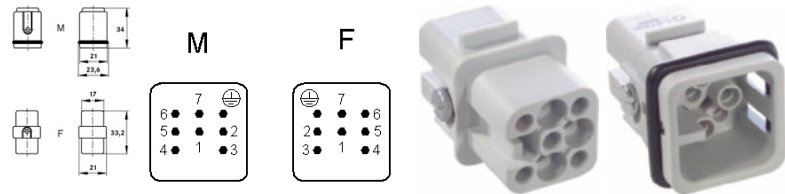
Article number	Article	Version	Contacts	Pieces / PU
H-Q 5 crimp termination				
10431500	H-Q 5 SC	male	1 - 5	10
10432500	H-Q 5 BC	female	1 - 5	10
H-D 8 crimp termination				
11252500	H-D 8 SCM	male	1 - 8	10
11253500	H-D 8 BCM	female	1 - 8	10

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX



EPIC® H-D 7 machined



EPIC® H-D 7 stamped

Suitable housing:

EPIC® H-D 7 machined

- EPIC® H-A 3 Housings Page 497
- EPIC® H-D 1.6 machined contacts Page 487
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-D 7 stamped

- EPIC® H-A 3 Housings Page 497
- EPIC® H-D 1.6 stamped contacts Page 488
- EPIC® H-D 1.6 stamped contacts-on-reel Page 489
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

EPIC® H-D 7 machined

- EPIC® H-D 1.6 machined contacts Page 487

EPIC® H-D 7 stamped

- EPIC® H-D 1.6 stamped contacts Page 488
- EPIC® H-D 1.6 stamped contacts-on-reel Page 489

Benefits

- Inserts of the connector series H-D are designed for applications in which a high number of contacts are required.

Application range

- Machine and equipment manufacturing
- Control engineering

Technical data

Rated voltage (V)

IEC: 24 V (AC)/60 V (DC) metal housing; 250 V thermoplastic housing; UL: 250 V

Rated impulse voltage

2.5 kV

Rated current (A)

IEC: 10 A
UL: 10 A

Degree of soiling

3

Contact resistance

< 2 mOhm

Contacts

Copper alloy, hard silver/gold-plated

Number of contacts

7 + PE

Termination methods

Crimp termination: 0.14 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



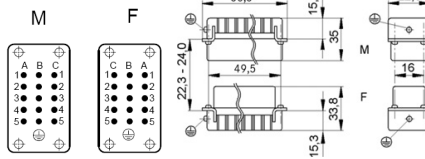
VDE-tested

Certified production control: VDE-REG. no. 437

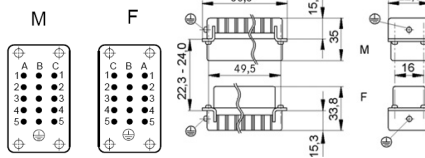
Article number	Article	Version	Article designation	Contacts	Pieces / PU
H-D 7 crimp termination					
11250500	H-D 7 SCM	male	machined	1 - 7	10
11251500	H-D 7 BCM	female	machined	1 - 7	10
11250000	H-D 7 SCG	male	stamped	1 - 7	10
11251000	H-D 7 BCG	female	stamped	1 - 7	10

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-D 15 machined



EPIC® H-D 15 stamped



Suitable housing:

EPIC® H-D 15 machined

- EPIC® H-A 10 Housings Page 502
- EPIC® H-D 1.6 machined contacts Page 487
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-D 15 stamped

- EPIC® H-A 10 Housings Page 502
- EPIC® H-D 1.6 stamped contacts Page 488
- EPIC® H-D 1.6 stamped contacts-on-reel Page 489
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

EPIC® H-D 15 machined

- EPIC® H-D 1.6 machined contacts Page 487

EPIC® H-D 15 stamped

- EPIC® H-D 1.6 stamped contacts Page 488
- EPIC® H-D 1.6 stamped contacts-on-reel Page 489

Benefits

- Inserts of the connector series H-D are designed for applications in which a high number of contacts are required.

Application range

- Machine and equipment manufacturing
- Control engineering

Technical data

Rated voltage (V)

IEC: 250 V
UL: 250 V

Rated impulse voltage

2.5 kV

Rated current (A)

IEC: 10 A
UL: 10 A

Degree of soiling

3

Contact resistance

< 2 mOhm

Contacts

Copper alloy, hard silver/gold-plated

Number of contacts

15 + PE

Termination methods

Crimp termination: 0.14 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

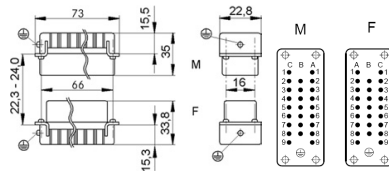


VDE-tested

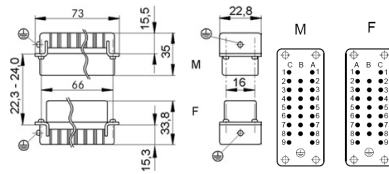
Certified production control: VDE-REG. no. 437

Article number	Article	Version	Article designation	Contacts	Pieces / PU
H-D 15 crimp termination					
11283200	H-D 15 SCM	male	machined	1 - 15	5
11282200	H-D 15 BCM	female	machined	1 - 15	5
11255000	H-D 15 SCG	male	stamped	1 - 15	5
11256000	H-D 15 BCG	female	stamped	1 - 15	5

Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® H-D 25 machined



EPIC® H-D 25 stamped



Suitable housing:

EPIC® H-D 25 machined

- EPIC® H-A 16 Housings Page 508
- EPIC® H-D 1.6 machined contacts Page 487
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-D 25 stamped

- EPIC® H-A 16 Housings Page 508
- EPIC® H-D 1.6 stamped contacts Page 488
- EPIC® H-D 1.6 stamped contacts-on-reel Page 489
- Refer to Selection Table A10 to select the required inserts and housings

Technical data

Rated voltage (V)

IEC: 250 V
UL: 250 V

Rated impulse voltage

2.5 kV

Rated current (A)

IEC: 10 A
UL: 10 A

Degree of soiling

3

Contact resistance

< 2 mOhm

Contacts

Copper alloy, hard silver/gold-plated

Number of contacts

25 + PE

Termination methods

Crimp termination: 0.14 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



VDE-tested

Certified production control: VDE-REG. no. 437

Suitable contacts:

EPIC® H-D 25 machined

- EPIC® H-D 1.6 machined contacts Page 487

EPIC® H-D 25 stamped

- EPIC® H-D 1.6 stamped contacts Page 488
- EPIC® H-D 1.6 stamped contacts-on-reel Page 489

Benefits

- Inserts of the connector series H-D are designed for applications in which a high number of contacts are required.

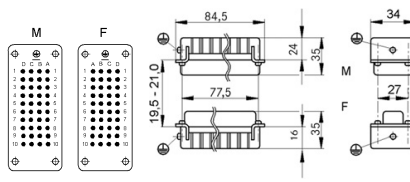
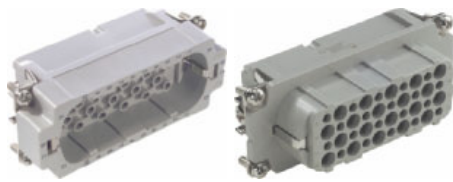
Application range

- Machine and equipment manufacturing
- Control engineering

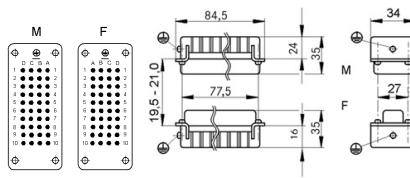
Article number	Article	Version	Article designation	Contacts	Pieces / PU
H-D 25 crimp termination					
11283300	H-D 25 SCM	male	machined	1 - 25	5
11282300	H-D 25 BCM	female	machined	1 - 25	5
11260000	H-D 25 SCG	male	stamped	1 - 25	5
11261000	H-D 25 BCG	female	stamped	1 - 25	5

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-D 40 machined



EPIC® H-D 40 stamped



Suitable housing:

EPIC® H-D 40 machined

- EPIC® H-B 16 Housings Page 545
- EPIC® ULTRA H-B 16 TS QB Page 524
- EPIC® ULTRA H-B 16 AG QB Page 524
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-D 40 stamped

- EPIC® H-B 16 Housings Page 545
- EPIC® ULTRA H-B 16 TS QB Page 524
- EPIC® ULTRA H-B 16 AG QB Page 524
- Refer to Selection Table A10 to select the required inserts and housings

Technical data

Rated voltage (V)

IEC: 250 V
UL: 250 V

Rated impulse voltage

2.5 kV

Rated current (A)

IEC: 10 A
UL: 10 A

Degree of soiling

3

Contact resistance

< 2 mOhm

Contacts

Copper alloy, hard silver/gold-plated

Number of contacts

40 + PE

Termination methods

Crimp termination: 0.14 - 2.5 mm²

Cycle of mechanical operation

100

Temperature range

-40 °C to +100 °C, short-term up to +125 °C



Suitable contacts:

EPIC® H-D 40 machined

- EPIC® H-D 1.6 machined contacts Page 487

EPIC® H-D 40 stamped

- EPIC® H-D 1.6 stamped contacts Page 488
- EPIC® H-D 1.6 stamped contacts-on-reel Page 489

Benefits

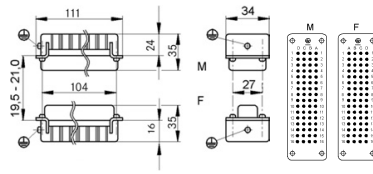
- Inserts of the connector series H-D are designed for applications in which a high number of contacts are required.

Application range

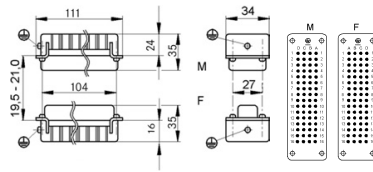
- Plant engineering
- Light & sound technology

Article number	Article	Version	Article designation	Contacts	Pieces / PU
H-D 40 crimp termination					
11265200	H-D 40 SCM	male	machined	1 - 40	10
11266200	H-D 40 BCM	female	machined	1 - 40	10
11265000	H-D 40 SCG	male	stamped	1 - 40	5
11266000	H-D 40 BCG	female	stamped	1 - 40	5

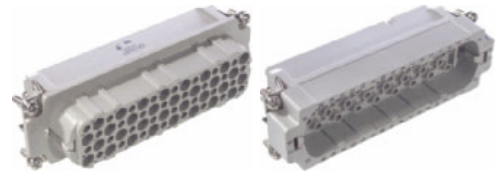
Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® H-D 64 machined



EPIC® H-D 64 stamped



Suitable housing:

EPIC® H-D 64 machined

- EPIC® H-B 24 Housings Page 559
- EPIC® ULTRA H-B 24 TS QB Page 525
- EPIC® ULTRA H-B 24 AG QB Page 525
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-D 64 stamped

- EPIC® H-B 24 Housings Page 559
- EPIC® ULTRA H-B 24 TS QB Page 525
- EPIC® ULTRA H-B 24 AG QB Page 525
- Refer to Selection Table A10 to select the required inserts and housings

Technical data

Rated voltage (V)

IEC: 250 V
UL: 250 V

Rated impulse voltage

2.5 kV

Rated current (A)

IEC: 10 A
UL: 10 A

Degree of soiling

3

Contact resistance

< 2 mOhm

Contacts

Copper alloy, hard silver/gold-plated

Number of contacts

64 + PE

Termination methods

Crimp termination: 0.14 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

Suitable contacts:

EPIC® H-D 64 machined

- EPIC® H-D 1.6 machined contacts Page 487

EPIC® H-D 64 stamped

- EPIC® H-D 1.6 stamped contacts Page 488
- EPIC® H-D 1.6 stamped contacts-on-reel Page 489

Benefits

- Inserts of the connector series H-D are designed for applications in which a high number of contacts are required.

Application range

- Plant engineering
- Light & sound technology

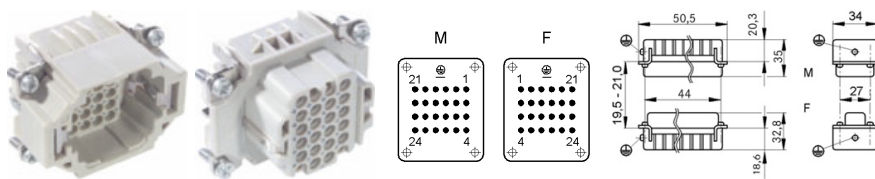
Article number	Article	Version	Article designation	Contacts	Pieces / PU
H-D 64 crimp termination					
11272000	H-D 64 SCM	male	machined	1 - 64	10
11273000	H-D 64 BCM	female	machined	1 - 64	10
11270000	H-D 64 SCG	male	stamped	1 - 64	5
11271000	H-D 64 BCG	female	stamped	1 - 64	5

Photographs are not to scale and do not represent detailed images of the respective products.

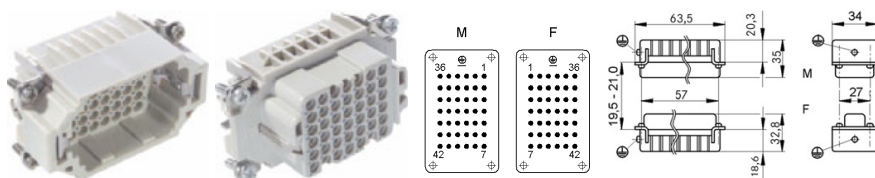
Rectangular connectors

EPIC® H-DD Inserts

EPIC® H-DD 24



EPIC® H-DD 42



Suitable housing:

EPIC® H-DD 24

- EPIC® H-B 6 Housings Page 526
- EPIC® ULTRA H-B 6 TG LB Page 521
- EPIC® ULTRA H-B 6 TS LB Page 521
- EPIC® ULTRA H-B 6 AG LB Page 522
- EPIC® ULTRA H-B 6 SGR LB Page 522
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-DD 42

- EPIC® H-B 10 Housings Page 532
- EPIC® ULTRA H-B 10 TS QB Page 523
- EPIC® ULTRA H-B 10 AG QB Page 523
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

- EPIC® H-D 1.6 machined contacts Page 487

Benefits

- The H-DD series with machined contacts is designed for a high number of pins in very tight spaces. This allows for smaller housing types to be chosen.

Application range

- Mechanical engineering
- Light & sound technology
- Plastics industry

Technical data

Rated voltage (V)

IEC: 250 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

2.5 kV

Rated current (A)

IEC: 10 A
UL: 8.5 A
CSA: 10 A

Degree of soiling

2

Contact resistance

< 3 mOhm

Contacts

Copper alloy, hard silver/gold-plated

Number of contacts

EPIC® H-DD 24

24 + PE

EPIC® H-DD 42

42 + PE

Termination methods

Crimp termination: 0.14 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



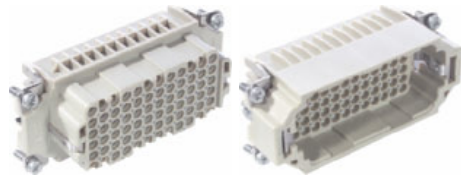
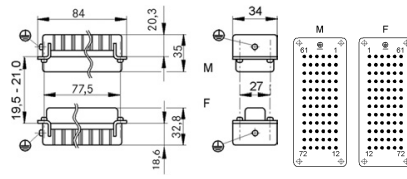
VDE-tested

Certified production control: VDE-REG. no. 437

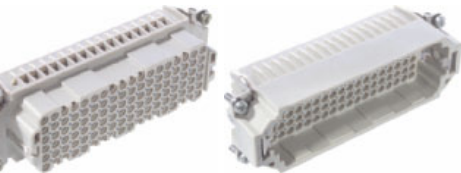
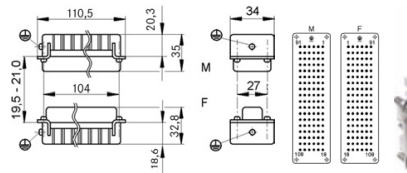
Article number	Article	Version	Article designation	Contacts	Pieces / PU
H-DD 24 crimp termination					
11285000	H-DD 24 SCM	male	machined	1 - 24	5
11286000	H-DD 24 BCM	female	machined	1 - 24	5
H-DD 42 crimp termination					
11285100	H-DD 42 SCM	male	machined	1 - 42	5
11286100	H-DD 42 BCM	female	machined	1 - 42	5

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



EPIC® H-DD 72



EPIC® H-DD 108

Suitable housing:

EPIC® H-DD 72

- EPIC® H-B 16 Housings Page 545
- EPIC® ULTRA H-B 16 TS QB Page 524
- EPIC® ULTRA H-B 16 AG QB Page 524
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-DD 108

- EPIC® H-B 24 Housings Page 559
- EPIC® ULTRA H-B 24 TS QB Page 525
- EPIC® ULTRA H-B 24 AG QB Page 525
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

- EPIC® H-D 1.6 machined contacts Page 487

Benefits

- The H-DD series with machined contacts is designed for a high number of pins in very tight spaces. This allows for smaller housing types to be chosen.

Application range

- Mechanical engineering
- Light & sound technology
- Plastics industry

Technical data

Rated voltage (V)

IEC: 250 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

2.5 kV

Rated current (A)

IEC: 10 A
UL: 8.5 A
CSA: 10 A

Degree of soiling

2

Contact resistance

< 3 mOhm

Contacts

Copper alloy, hard silver/gold-plated

Number of contacts

EPIC® H-DD 72

72 + PE

EPIC® H-DD 108

108 + PE

Termination methods

Crimp termination: 0.14 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



VDE-tested

Certified production control: VDE-REG. no. 437

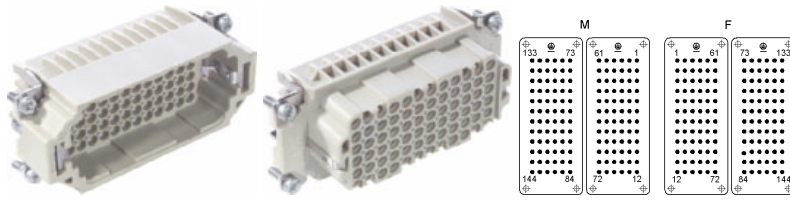
Article number	Article	Version	Article designation	Contacts	Pieces / PU
H-DD 72 crimp termination					
11285200	H-DD 72 SCM	male	machined	1 - 72	5
11286200	H-DD 72 BCM	female	machined	1 - 72	5
H-DD 108 crimp termination					
11285300	H-DD 108 SCM	male	machined	1 - 108	5
11286300	H-DD 108 BCM	female	machined	1 - 108	5

Photographs are not to scale and do not represent detailed images of the respective products.

Rectangular connectors

EPIC® H-DD Inserts

EPIC® H-DD 144



EPIC® H-DD 216



Suitable housing:

EPIC® H-DD 144

- EPIC® H-B 32 Housings Page 573
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-DD 216

- EPIC® H-B 48 Housings Page 576
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

- EPIC® H-D 1.6 machined contacts Page 487

Benefits

- The H-DD series with machined contacts is designed for a high number of pins in very tight spaces. This allows for smaller housing types to be chosen.

Application range

- Mechanical engineering
- Light & sound technology
- Plastics industry

Technical data

Rated voltage (V)

IEC: 250 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

2.5 kV

Rated current (A)

IEC: 10 A
UL: 8.5 A
CSA: 10 A

Degree of soiling

2

Contact resistance

< 3 mOhm

Contacts

Copper alloy, hard silver/gold-plated

Number of contacts

72 + PE

Termination methods

Crimp termination: 0.14 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



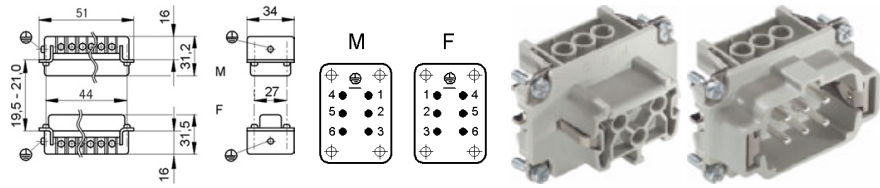
VDE-tested

Certified production control: VDE-REG. no. 437

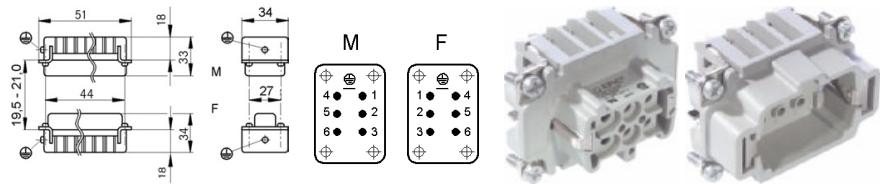
Article number	Article	Version	Article designation	Contacts	Pieces / PU
H-DD 144 crimp termination					
11285400	H-DD 72 SCM	male	machined	73 - 144	5
11285200	H-DD 72 SCM	male	machined	1 - 72	5
11286400	H-DD 72 BCM	female	machined	73 - 144	5
11286200	H-DD 72 BCM	female	machined	1 - 72	5
H-DD 216 crimp termination					
11285500	H-DD 108 SCM	male	machined	109 - 216	5
11285300	H-DD 108 SCM	male	machined	1 - 108	5
11286500	H-DD 108 BCM	female	machined	109 - 216	5
11286300	H-DD 108 BCM	female	machined	1 - 108	5

Photographs are not to scale and do not represent detailed images of the respective products.

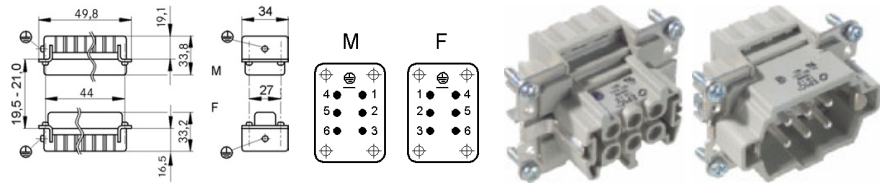
EPIC® H-BE 6 Screw termination



EPIC® H-BE 6 Crimp termination



EPIC® H-BE 6 Cage clamp



Suitable housing:

- EPIC® H-B 6 Housings Page 526
- EPIC® QUICK & EASY Mounting system Page 579
- EPIC® ULTRA H-B 6 TG LB Page 521
- EPIC® ULTRA H-B 6 TS LB Page 521
- EPIC® ULTRA H-B 6 AG LB Page 522
- EPIC® ULTRA H-B 6 SGR LB Page 522
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

- EPIC® H-BE 6 Crimp termination**
- EPIC® H-BE 2.5 machined contacts Page 490

Suitable tools

- EPIC® H-BE 6 Screw termination**
- MULTICRIMP 6 crimping pliers refer to page 915
 - Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 976
 - Recommended crimping tool when conductor end-sleeves are used

Benefits

- Standard inserts with screw, crimp and cage clamp termination
- The EPIC® H-BE series is suitable for applications that require a reliable connection when working with high voltages and currents

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

6 kV

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Degree of soiling

3

Contact resistance

EPIC® H-BE 6 Screw termination

< 2 mOhm

EPIC® H-BE 6 Crimp termination

< 2 mOhm

EPIC® H-BE 6 Cage clamp

1.5 - 4 mohm

Contacts

EPIC® H-BE 6 Screw termination

Copper alloy, hard silver-plated

EPIC® H-BE 6 Crimp termination

Copper alloy, hard silver/gold-plated

EPIC® H-BE 6 Cage clamp

Copper alloy, hard silver-plated

Number of contacts

6 + PE

Termination methods

EPIC® H-BE 6 Screw termination

Screw termination: 0.5 - 2.5 mm²

EPIC® H-BE 6 Crimp termination

Crimp termination: 0.5 - 4.0 mm²

EPIC® H-BE 6 Cage clamp

Cage clamp termination: 0.5 - 2.5 mm²

Cycle of mechanical operation

100

Temperature range

-40 °C to +100 °C, short-term up to +125 °C



VDE-tested

EPIC® H-BE 6 Screw termination

Certified production control: VDE-REG. no. 437

EPIC® H-BE 6 Crimp termination

Certified production control: VDE-REG. no. 437

Application range

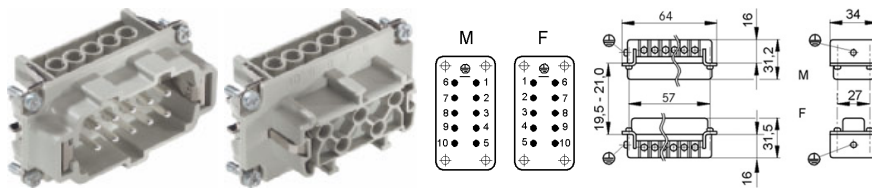
- Mechanical engineering
- Light & sound technology
- Plastics industry

Article number	Article	Version	Wire protection	Article designation	Contacts	Pieces / PU
H-BE 6 screw termination						
10190000	H-BE 6 SS	male	yes		1 - 6	10
10191000	H-BE 6 BS	female	yes		1 - 6	10
10190100	H-BE 6 SS	male			1 - 6	10
10191100	H-BE 6 BS	female			1 - 6	10
H-BE 6 crimp termination						
10180000	H-BE 6 SCM	male		machined	1 - 6	10
10181000	H-BE 6 BCM	female		machined	1 - 6	10
H-BE 6 cage clamp termination						
10400000	H-BE 6 SF	male			1 - 6	10
10401000	H-BE 6 BF	female			1 - 6	10

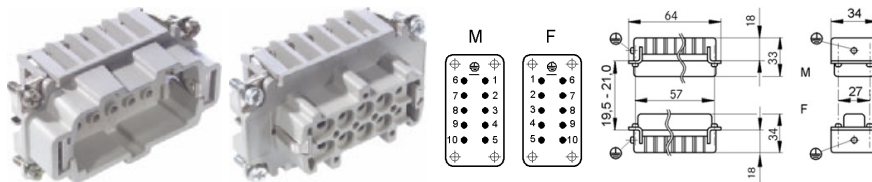
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

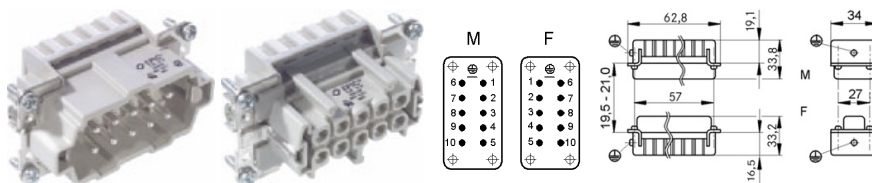
EPIC® H-BE 10 Screw termination



EPIC® H-BE 10 Crimp termination



EPIC® H-BE 10 Cage clamp



Suitable housing:

- EPIC® H-B 10 Housings Page 532
- EPIC® QUICK & EASY Mounting system Page 579
- EPIC® ULTRA H-B 10 TS QB Page 523
- EPIC® ULTRA H-B 10 AG QB Page 523
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

- EPIC® H-BE 10 Crimp termination
- EPIC® H-BE 2.5 machined contacts Page 490

Suitable tools

- EPIC® H-BE 10 Screw termination
- MULTICRIMP 6 crimping pliers refer to page 915
- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 976
- Recommended crimping tool when conductor end-sleeves are used

Benefits

- Standard inserts with screw, crimp and cage clamp termination
- The EPIC® H-BE series is suitable for applications that require a reliable connection when working with high voltages and currents

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

6 kV

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Degree of soiling

3

Contact resistance

EPIC® H-BE 10 Screw termination
< 2 mOhm
EPIC® H-BE 10 Crimp termination
< 2 mOhm
EPIC® H-BE 10 Cage clamp
1.5 - 4 mohm

Contacts

EPIC® H-BE 10 Screw termination
Copper alloy, hard silver-plated
EPIC® H-BE 10 Crimp termination
Copper alloy, hard silver/gold-plated
EPIC® H-BE 10 Cage clamp
Copper alloy, hard silver-plated

Number of contacts

10 + PE

Termination methods

EPIC® H-BE 10 Screw termination
Screw termination: 0.5 - 2.5 mm²
EPIC® H-BE 10 Crimp termination
Crimp termination: 0.5 - 4.0 mm²
EPIC® H-BE 10 Cage clamp
Cage clamp termination: 0.5 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



VDE-tested

EPIC® H-BE 10 Screw termination
Certified production control: VDE-REG. no. 437
EPIC® H-BE 10 Crimp termination
Certified production control: VDE-REG. no. 437

Application range

- Mechanical engineering
- Light & sound technology
- Plastics industry

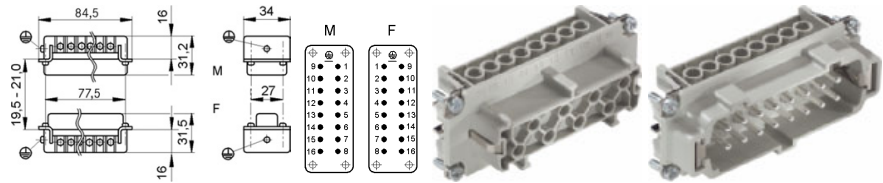
Article number	Article	Version	Wire protection	Article designation	Contacts	Pieces / PU
H-BE 10 screw termination						
10192000	H-BE 10 SS	male	yes		1 - 10	10
10193000	H-BE 10 BS	female	yes		1 - 10	10
10192100	H-BE 10 SS	male			1 - 10	10
10193100	H-BE 10 BS	female			1 - 10	10
H-BE 10 crimp termination						
10182000	H-BE 10 SCM	male		machined	1 - 10	10
10183000	H-BE 10 BCM	female		machined	1 - 10	10
H-BE 10 cage clamp termination						
10400100	H-BE 10 SF	male			1 - 10	10
10401100	H-BE 10 BF	female			1 - 10	10

Photographs are not to scale and do not represent detailed images of the respective products.

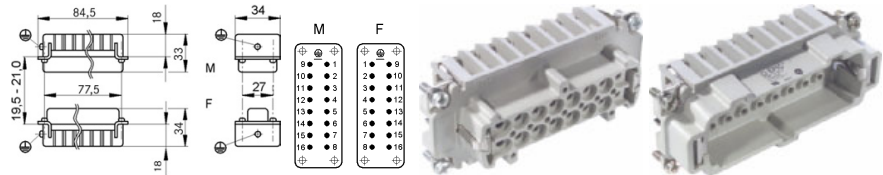
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



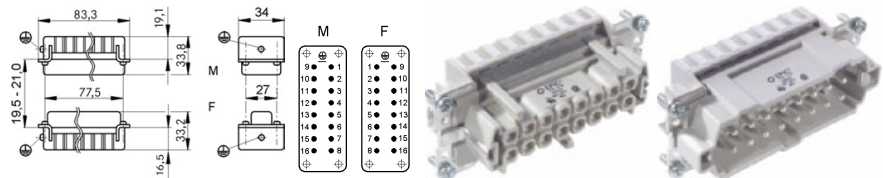
EPIC® H-BE 16 Screw termination



EPIC® H-BE 16 Crimp termination



EPIC® H-BE 16 Cage clamp



Suitable housing:

- EPIC® H-B 16 Housings Page 545
- EPIC® QUICK & EASY Mounting system Page 579
- EPIC® ULTRA H-B 16 TS QB Page 524
- EPIC® ULTRA H-B 16 AG QB Page 524
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

- EPIC® H-BE 16 Crimp termination
- EPIC® H-BE 2.5 machined contacts Page 490

Suitable tools

EPIC® H-BE 16 Screw termination

- MULTICRIMP 6 crimping pliers refer to page 915
- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 976
- Recommended crimping tool when conductor end-sleeves are used

Benefits

- Standard inserts with screw, crimp and cage clamp termination
- The EPIC® H-BE series is suitable for applications that require a reliable connection when working with high voltages and currents

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

6 kV

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Degree of soiling

3

Contact resistance

EPIC® H-BE 16 Screw termination

< 2 mOhm

EPIC® H-BE 16 Crimp termination

< 2 mOhm

EPIC® H-BE 16 Cage clamp

1.5 - 4 mohm

Contacts

EPIC® H-BE 16 Screw termination

Copper alloy, hard silver-plated

EPIC® H-BE 16 Crimp termination

Copper alloy, hard silver/gold-plated

EPIC® H-BE 16 Cage clamp

Copper alloy, hard silver-plated

Number of contacts

16 + PE

Termination methods

EPIC® H-BE 16 Screw termination

Screw termination: 0.5 - 2.5 mm²

EPIC® H-BE 16 Crimp termination

Crimp termination: 0.5 - 4.0 mm²

EPIC® H-BE 16 Cage clamp

Cage clamp termination: 0.5 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



VDE-tested

EPIC® H-BE 16 Screw termination

Certified production control: VDE-REG. no. 437

EPIC® H-BE 16 Crimp termination

Certified production control: VDE-REG. no. 437

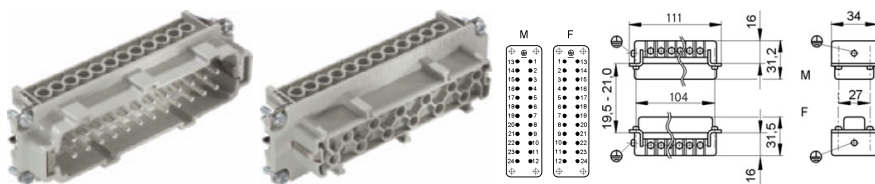
Application range

- Mechanical engineering
- Light & sound technology
- Plastics industry

Article number	Article	Version	Wire protection	Article designation	Contacts	Pieces / PU
H-BE 16 screw termination						
10194000	H-BE 16 SS	male	yes		1-16	5
10195000	H-BE 16 BS	female	yes		1-16	5
10194100	H-BE 16 SS	male			1-16	5
10195100	H-BE 16 BS	female			1-16	5
H-BE 16 crimp termination						
10184000	H-BE 16 SCM	male		machined	1-16	5
10185000	H-BE 16 BCM	female		machined	1-16	5
H-BE 16 cage clamp termination						
10400200	H-BE 16 SF	male			1-16	5
10401200	H-BE 16 BF	female			1-16	5

Photographs are not to scale and do not represent detailed images of the respective products.

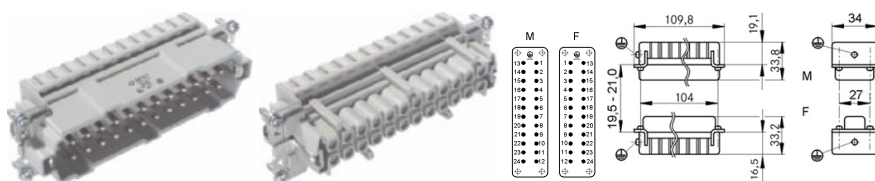
EPIC® H-BE 24 Screw termination



EPIC® H-BE 24 Crimp termination



EPIC® H-BE 24 Cage clamp



Suitable housing:

- EPIC® H-B 24 Housings Page 559
- EPIC® QUICK & EASY Mounting system Page 579
- EPIC® ULTRA H-B 24 TS QB Page 525
- EPIC® ULTRA H-B 24 AG QB Page 525
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

- EPIC® H-BE 24 Crimp termination
- EPIC® H-BE 2.5 machined contacts Page 490

Suitable tools

- EPIC® H-BE 24 Screw termination
- MULTICRIMP 6 crimping pliers refer to page 915
- Kraftform® adjustable torque screwdriver / Kraftform Kompakt® Set refer to page 976
- Recommended crimping tool when conductor end-sleeves are used

Benefits

- Standard inserts with screw, crimp and cage clamp termination
- The EPIC® H-BE series is suitable for applications that require a reliable connection when working with high voltages and currents

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

6 kV

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Degree of soiling

3

Contact resistance

EPIC® H-BE 24 Screw termination
< 2 mOhm
EPIC® H-BE 24 Crimp termination
< 2 mOhm
EPIC® H-BE 24 Cage clamp
1.5 - 4 mohm

Contacts

EPIC® H-BE 24 Screw termination
Copper alloy, hard silver-plated
EPIC® H-BE 24 Crimp termination
Copper alloy, hard silver / gold-plated
EPIC® H-BE 24 Cage clamp
Copper alloy, hard silver-plated

Number of contacts

24 + PE

Termination methods

EPIC® H-BE 24 Screw termination
Screw termination: 0.5 - 2.5 mm²
EPIC® H-BE 24 Crimp termination
Crimp termination: 0.5 - 4.0 mm²
EPIC® H-BE 24 Cage clamp
Cage clamp termination: 0.5 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



VDE-tested

EPIC® H-BE 24 Screw termination
Certified production control: VDE-REG. no. 437
EPIC® H-BE 24 Crimp termination
Certified production control: VDE-REG. no. 437

Application range

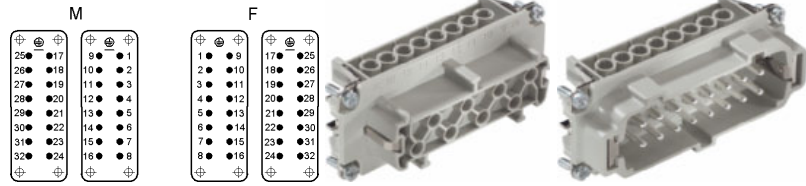
- Mechanical engineering
- Light & sound technology
- Plastics industry

Article number	Article	Version	Wire protection	Article designation	Contacts	Pieces / PU
H-BE 24 screw termination						
10196000	H-BE 24 SS	male	yes		1 - 24	5
10197000	H-BE 24 BS	female	yes		1 - 24	5
10196100	H-BE 24 SS	male			1 - 24	5
10197100	H-BE 24 BS	female			1 - 24	5
H-BE 24 crimp termination						
10186000	H-BE 24 SCM	male		machined	1 - 24	5
10187000	H-BE 24 BCM	female		machined	1 - 24	5
H-BE 24 cage clamp termination						
10400300	H-BE 24 SF	male			1 - 24	5
10401300	H-BE 24 BF	female			1 - 24	5

Photographs are not to scale and do not represent detailed images of the respective products.



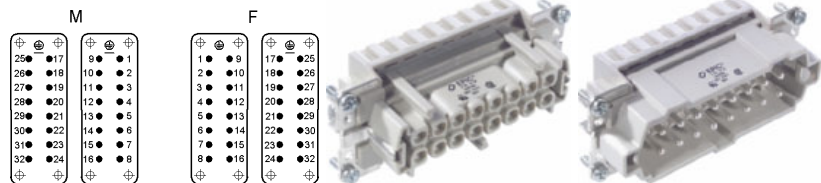
EPIC® H-BE 32 Screw termination



EPIC® H-BE 32 Crimp termination



EPIC® H-BE 32 Cage clamp



Suitable housing:

- EPIC® H-B 32 Housings Page 573
- EPIC® QUICK & EASY Mounting system Page 579
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

- EPIC® H-BE 32 Crimp termination
- EPIC® H-BE 2.5 machined contacts Page 490

Benefits

- Standard inserts with screw, crimp and cage clamp termination
- The EPIC® H-BE series is suitable for applications that require a reliable connection when working with high voltages and currents

Application range

- Mechanical engineering
- Light & sound technology
- Plastics industry

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

6 kV

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Degree of soiling

3

Contact resistance

EPIC® H-BE 32 Screw termination
< 2 mOhm
EPIC® H-BE 32 Crimp termination
< 2 mOhm
EPIC® H-BE 32 Cage clamp
1.5 - 4 mohm

Contacts

EPIC® H-BE 32 Screw termination
Copper alloy, hard silver-plated
EPIC® H-BE 32 Crimp termination
Copper alloy, hard silver/gold-plated
EPIC® H-BE 32 Cage clamp
Copper alloy, hard silver-plated

Number of contacts

16 + PE

Termination methods

EPIC® H-BE 32 Screw termination
Screw termination: 0.5 - 2.5 mm²
EPIC® H-BE 32 Crimp termination
Crimp termination: 0.5 - 4.0 mm²
EPIC® H-BE 32 Cage clamp
Cage clamp termination: 0.5 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



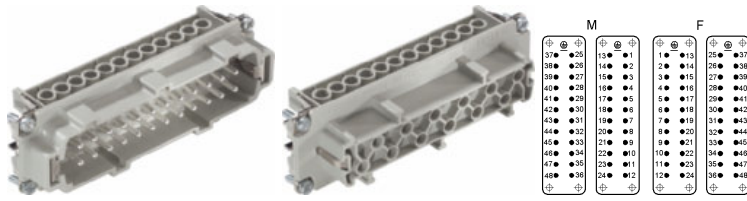
VDE-tested

EPIC® H-BE 32 Screw termination
Certified production control: VDE-REG. no. 437
EPIC® H-BE 32 Crimp termination
Certified production control: VDE-REG. no. 437

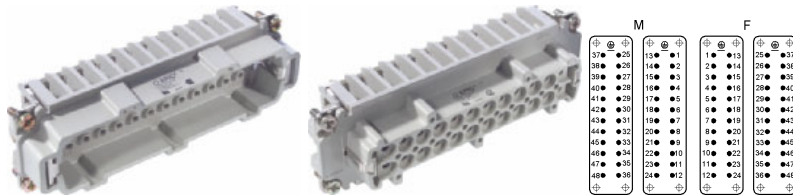
Article number	Article	Version	Wire protection	Article designation	Contacts	Pieces / PU
H-BE 32 screw termination						
10202000	H-BE 16 SS	male	yes		17 - 32	5
10194000	H-BE 16 SS	male	yes		1 - 16	5
10203000	H-BE 16 BS	female	yes		17 - 32	5
10195000	H-BE 16 BS	female	yes		1 - 16	5
10202100	H-BE 16 SS	male			17 - 32	5
10194100	H-BE 16 SS	male			1 - 16	5
10203100	H-BE 16 BS	female			17 - 32	5
10195100	H-BE 16 BS	female			1 - 16	5
H-BE 32 crimp termination						
10184200	H-BE 16 SCM	male		machined	17 - 32	5
10184000	H-BE 16 SCM	male		machined	1 - 16	5
10185200	H-BE 16 BCM	female		machined	17 - 32	5
10185000	H-BE 16 BCM	female		machined	1 - 16	5
H-BE 32 cage clamp termination						
10400400	H-BE 16 SF	male			17 - 32	5
10400200	H-BE 16 SF	male			1 - 16	5
10401400	H-BE 16 BF	female			17 - 32	5
10401200	H-BE 16 BF	female			1 - 16	5

Photographs are not to scale and do not represent detailed images of the respective products.

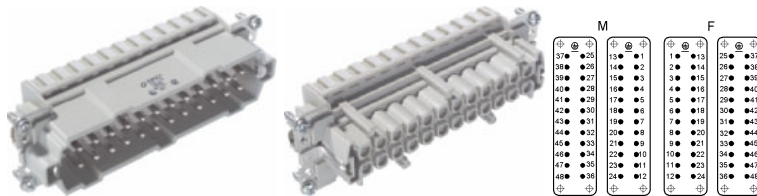
EPIC® H-BE 48 Screw termination



EPIC® H-BE 48 Crimp termination



EPIC® H-BE 48 Cage clamp



Suitable housing:

- EPIC® H-B 48 Housings Page 576
- EPIC® QUICK & EASY Mounting system Page 579
- Refer to Selection Table A 10 to select the required inserts and housings

Suitable contacts:

- EPIC® H-BE 48 Crimp termination**
- EPIC® H-BE 2.5 machined contacts Page 490

Benefits

- Standard inserts with screw, crimp and cage clamp termination
- The EPIC® H-BE series is suitable for applications that require a reliable connection when working with high voltages and currents

Application range

- Mechanical engineering
- Light & sound technology
- Plastics industry

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated impulse voltage
6 kV

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Degree of soiling
3

Contact resistance

EPIC® H-BE 48 Screw termination
< 2 mOhm
EPIC® H-BE 48 Crimp termination
< 2 mOhm
EPIC® H-BE 48 Cage clamp
1.5 - 4 mohm

Contacts

EPIC® H-BE 48 Screw termination
Copper alloy, hard silver-plated
EPIC® H-BE 48 Crimp termination
Copper alloy, hard silver /gold-plated
EPIC® H-BE 48 Cage clamp
Copper alloy, hard silver-plated

Number of contacts
24 + PE

Termination methods

EPIC® H-BE 48 Screw termination
Screw termination: 0.5 - 2.5 mm²
EPIC® H-BE 48 Crimp termination
Crimp termination: 0.5 - 4.0 mm²
EPIC® H-BE 48 Cage clamp
Cage clamp termination: 0.5 - 2.5 mm²

Cycle of mechanical operation
100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



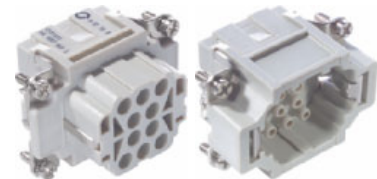
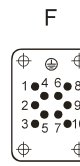
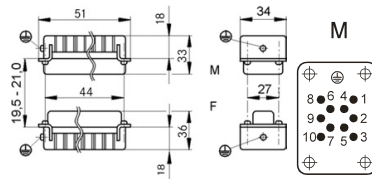
VDE-tested

EPIC® H-BE 48 Screw termination
Certified production control: VDE-REG. no. 437
EPIC® H-BE 48 Crimp termination
Certified production control: VDE-REG. no. 437

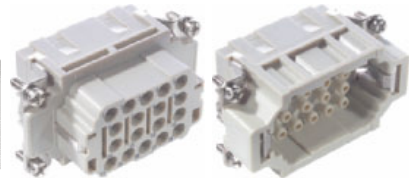
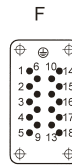
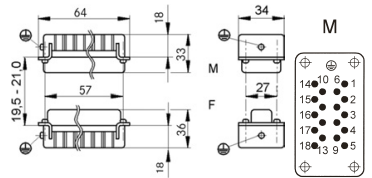
Article number	Article	Version	Wire protection	Article designation	Contacts	Pieces / PU
H-BE 48 screw termination						
10204000	H-BE 24 SS	male	yes		25 - 48	5
10196000	H-BE 24 SS	male	yes		1 - 24	5
10205000	H-BE 24 BS	female	yes		25 - 48	5
10197000	H-BE 24 BS	female	yes		1 - 24	5
10204100	H-BE 24 SS	male			25 - 48	5
10196100	H-BE 24 SS	male			1 - 24	5
10205100	H-BE 24 BS	female			25 - 48	5
10197100	H-BE 24 BS	female			1 - 24	5
H-BE 48 crimp termination						
10186200	H-BE 24 SCM	male		machined	25 - 48	5
10186000	H-BE 24 SCM	male		machined	1 - 24	5
10187200	H-BE 24 BCM	female		machined	25 - 48	5
10187000	H-BE 24 BCM	female		machined	1 - 24	5
H-BE 48 cage clamp termination						
10400500	H-BE 24 SF	male			25 - 48	5
10400300	H-BE 24 SF	male			1 - 24	5
10401500	H-BE 24 BF	female			25 - 48	5
10401300	H-BE 24 BF	female			1 - 24	5

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX



EPIC® H-EE 10



EPIC® H-EE 18

Suitable housing:

EPIC® H-EE 10

- EPIC® H-B 6 Housings Page 526
- EPIC® ULTRA H-B 6 TG LB Page 521
- EPIC® ULTRA H-B 6 TS LB Page 521
- EPIC® ULTRA H-B 6 AG LB Page 522
- EPIC® ULTRA H-B 6 SGR LB Page 522
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-EE 18

- EPIC® H-B 10 Housings Page 532
- EPIC® ULTRA H-B 10 TS QB Page 523
- EPIC® ULTRA H-B 10 AG QB Page 523
- Refer to Selection Table A10 to select the required inserts and housings

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

6 kV

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Degree of soiling

3

Contact resistance

< 2 mOhm

Contacts

Copper alloy, hard silver /gold-plated

Number of contacts

EPIC® H-EE 10

10 + PE

EPIC® H-EE 18

18 + PE

Termination methods

Crimp termination: 0.5 - 4.0 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

Suitable contacts:

- EPIC® H-BE 2.5 machined contacts Page 490

Benefits

- The H-EE inserts with machined contacts for a high number of pins in very tight spaces. For assembly in H-B housing.

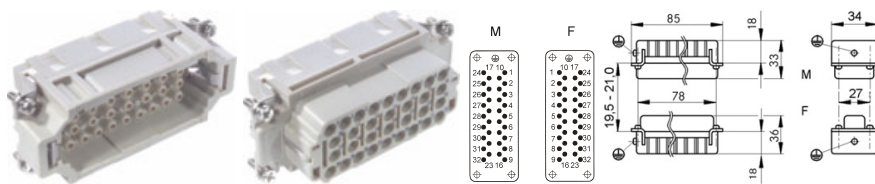
Application range

- Mechanical engineering

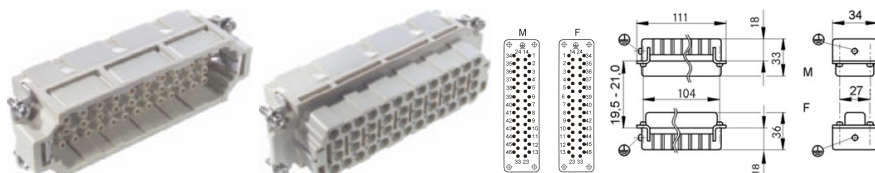
Article number	Article	Version	Article designation	Contacts	Pieces / PU
H-EE 10 crimp termination					
10180400	H-EE 10 SC	male	machined	1 - 10	10
10181400	H-EE 10 BC	female	machined	1 - 10	10
H-EE 18 crimp termination					
10182400	H-EE 18 SC	male	machined	1 - 18	10
10183400	H-EE 18 BC	female	machined	1 - 18	10

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-EE 32



EPIC® H-EE 46



Suitable housing:

EPIC® H-EE 16

- EPIC® H-B 16 Housings Page 545
- EPIC® ULTRA H-B 16 TS QB Page 524
- EPIC® ULTRA H-B 16 AG QB Page 524
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-EE 46

- EPIC® H-B 24 Housings Page 559
- EPIC® ULTRA H-B 24 TS QB Page 525
- EPIC® ULTRA H-B 24 AG QB Page 525
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

- EPIC® H-BE 2.5 machined contacts Page 490

Benefits

- The H-EE inserts with machined contacts for a high number of pins in very tight spaces. For assembly in H-B housing.

Application range

- Mechanical engineering

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

6 kV

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Degree of soiling

3

Contact resistance

< 2 mOhm

Contacts

Copper alloy, hard silver/gold-plated

Number of contacts

EPIC® H-EE 32

32 + PE

EPIC® H-EE 46

46 + PE

Termination methods

Crimp termination: 0.5 - 4.0 mm²

Cycle of mechanical operation

100



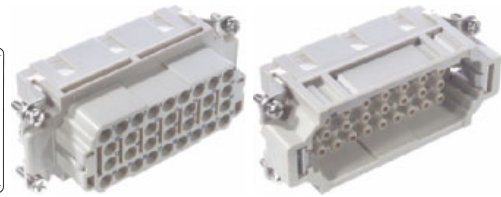
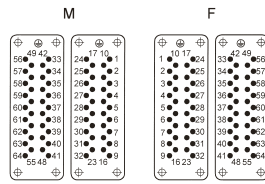
Temperature range

-40 °C to +100 °C, short-term up to +125 °C

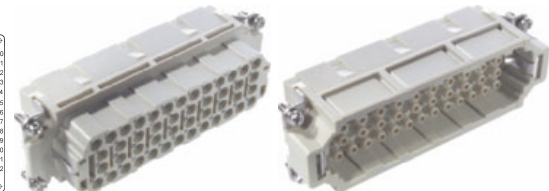
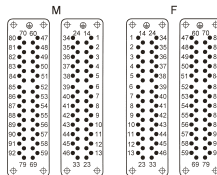
Article number	Article	Version	Article designation	Contacts	Pieces / PU
H-EE 32 crimp termination					
10184400	H-EE 32 SC	male	machined	1 - 32	5
10185400	H-EE 32 BC	female	machined	1 - 32	5
H-EE 46 crimp termination					
10186400	H-EE 46 SC	male	machined	1 - 46	5
10187400	H-EE 46 BC	female	machined	1 - 46	5

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-EE 64



EPIC® H-EE 92



Suitable housing:

EPIC® H-EE 64

- EPIC® H-B 32 Housings Page 573
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-EE 92

- EPIC® H-B 48 Housings Page 576
- Refer to Selection Table A10 to select the required inserts and housings

Suitable contacts:

- EPIC® H-BE 2.5 machined contacts Page 490

Benefits

- The H-EE inserts with machined contacts for a high number of pins in very tight spaces. For assembly in H-B housing.

Application range

- Mechanical engineering

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

6 kV

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Degree of soiling

3

Contact resistance

< 2 mOhm

Contacts

Copper alloy, hard silver/gold-plated

Number of contacts

EPIC® H-EE 64

32 + PE

EPIC® H-EE 92

46 + PE

Termination methods

Crimp termination: 0.5 - 4.0 mm²

Cycle of mechanical operation

100



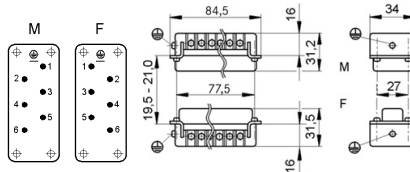
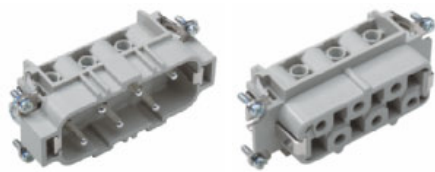
Temperature range

-40 °C to +100 °C, short-term up to +125 °C

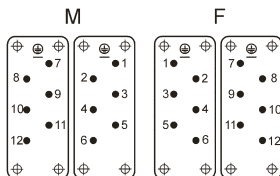
Article number	Article	Version	Article designation	Contacts	Pieces / PU
H-EE 64 crimp termination					
10184500	H-EE 32 SC	male	machined	33 - 64	5
10184400	H-EE 32 SC	male	machined	1 - 32	5
10185500	H-EE 32 BC	female	machined	33 - 64	5
10185400	H-EE 32 BC	female	machined	1 - 32	5
H-EE 92 crimp termination					
10186500	H-EE 46 SC	male	machined	47 - 92	5
10186400	H-EE 46 SC	male	machined	1 - 46	5
10187500	H-EE 46 BC	female	machined	47 - 92	5
10187400	H-EE 46 BC	female	machined	1 - 46	5

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-BS 6



EPIC® H-BS 12



Suitable housing:

EPIC® H-BS 6

- EPIC® H-B 16 Housings Page 545
- EPIC® ULTRA H-B 16 TS QB Page 524
- EPIC® ULTRA H-B 16 AG QB Page 524
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-BS 12

- EPIC® H-B 32 Housings Page 573
- Refer to Selection Table A10 to select the required inserts and housings

Benefits

EPIC® H-BS 6

- For currents up to 35 A
- With screw termination up to a conductor cross section of 6 mm²

EPIC® H-BS 12

- For currents up to 35 A
- With screw termination up to a conductor cross section of 6 mm²
- Two H-BS 6 inserts with different contact-numbering for one housing.

Application range

- Plant engineering

Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 976

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V
Conductor - conductor: 690 V

Rated impulse voltage

6 kV

Rated current (A)

IEC: 35 A
UL: 35 A
CSA: 35 A

Degree of soiling

3

Contact resistance

< 2 mOhm

Contacts

Copper alloy, hard silver-plated

Number of contacts

EPIC® H-BS 6

6 + PE

EPIC® H-BS 12

12 + PE

Termination methods

Screw termination: 0.5 - 6 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



VDE-tested

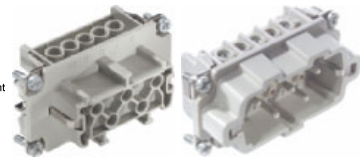
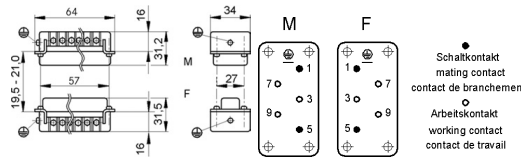
Certified production control: VDE-REG. no. 437

Article number	Article	Version	Wire protection	Contacts	Pieces / PU
H-BS 6 screw termination					
10170000	H-BS 6 SS	male	yes	1 - 6	5
10171000	H-BS 6 BS	female	yes	1 - 6	5
H-BS 12 screw termination					
10170600	H-BS 6 SS	male	yes	7 - 12	5
10170000	H-BS 6 SS	male	yes	1 - 6	5
10171600	H-BS 6 BS	female	yes	7 - 12	5
10171000	H-BS 6 BS	female	yes	1 - 6	5

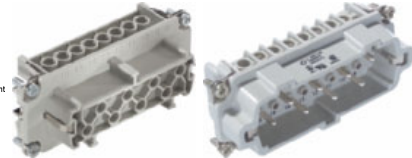
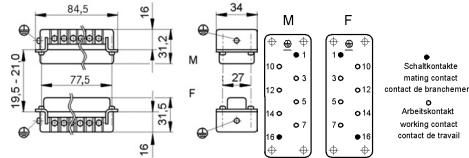
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

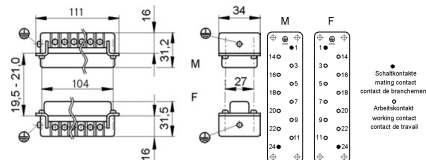
EPIC® H-BVE 3



EPIC® H-BVE 6



EPIC® H-BVE 10



Suitable housing:

EPIC® H-BVE 3

- EPIC® H-B 10 Housings Page 532
- EPIC® ULTRA H-B 10 TS QB Page 523
- EPIC® ULTRA H-B 10 AG QB Page 523
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® H-BVE 6

- EPIC® H-B 16 Housings Page 545
- EPIC® ULTRA H-B 16 TS QB Page 524
- EPIC® ULTRA H-B 16 AG QB Page 524

EPIC® H-BVE 10

- EPIC® H-B 24 Housings Page 559
- EPIC® ULTRA H-B 24 TS QB Page 525
- EPIC® ULTRA H-B 24 AG QB Page 525
- Refer to Selection Table A10 to select the required inserts and housings

Technical data

Rated voltage (V)

IEC: 630 V
UL: 600 V
CSA: 600V

Rated impulse voltage

6 kV

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Degree of soiling

3

Contact resistance

< 2 mOhm

Contacts

Copper alloy, hard silver-plated

Number of contacts

EPIC® H-BVE 3

3 + 2 + PE

EPIC® H-BVE 6

6 + 2 + PE

EPIC® H-BVE 10

10 + 2 + PE

Termination methods

Screw termination: 0.5 - 2.5 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



VDE-tested

Certified production control: VDE-REG. no. 437

Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 976

Benefits

- These high-voltage inserts are additionally equipped with 2 switching contacts
- With the relevant wiring, the lagging switch contacts interrupt the power supply before the working contacts are separated

Application range

- Plant engineering

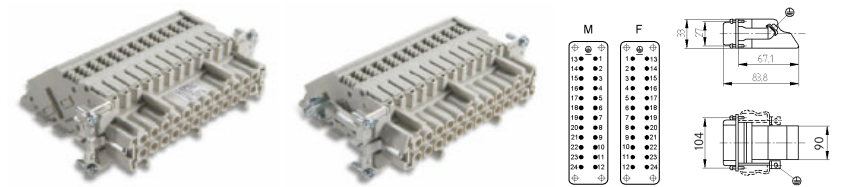
Article number	Article	Version	Wire protection	Contacts	Pieces / PU
H-BVE 3 screw termination					
10210010	H-BVE 3 SS	male	yes	3 + 2	10
10211010	H-BVE 3 BS	female	yes	3 + 2	10
10210110	H-BVE 3 SS	male		3 + 2	10
10211110	H-BVE 3 BS	female		3 + 2	10
H-BVE 6 screw termination					
10239010	H-BVE 6 SS	male	yes	6 + 2	5
10240010	H-BVE 6 BS	female	yes	6 + 2	5
10239110	H-BVE 6 SS	male		6 + 2	5
10240110	H-BVE 6 BS	female		6 + 2	5
H-BVE 10 screw termination					
10270010	H-BVE 10 SS	male	yes	10 + 2	5
10271010	H-BVE 10 BS	female	yes	10 + 2	5
10270110	H-BVE 10 SS	male		10 + 2	5
10271110	H-BVE 10 BS	female		10 + 2	5

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® TB-H-BE 16



EPIC® TB-H-BE 24



Suitable housing:

EPIC® TB-H-BE 16

- EPIC® ULTRA H-B 16 TS QB Page 524
- EPIC® ULTRA H-B 16 AG QB Page 524
- EPIC® H-B 16 AG-LB Page 550
- EPIC® H-B 16 AD-LB Page 550
- EPIC® H-B 16 AG Page 550
- EPIC® H-B 16 AD-BO Page 551
- EPIC® H-B 16 AG-ZR Page [P447]

EPIC® TB-H-BE 24

- EPIC® ULTRA H-B 24 AG QB Page 525
- EPIC® H-B 24 AG-LB Page 564
- EPIC® H-B 24 AD-LB Page 564
- EPIC® H-B 24 AG Page 564
- EPIC® H-B 24 AD-BO Page 564
- EPIC® H-B 24 AG-ZR Page [P953]

Benefits

- Standard H-BE inserts for use with switch cabinets
- Pluggable with H-BE male inserts in hoods
- Fastening on side = "left" means that when mounting the terminal adapter on the left wall of a control cabinet, the PE connection and pin "1" are on the "top" side

Application range

- Plant engineering

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

6 kV

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Degree of soiling

3

Contacts

Copper alloy, hard silver-plated

Number of contacts

EPIC® TB-H-BE 16
16 + PE
EPIC® TB-H-BE 24
24 + PE

Termination methods

Screw termination: 0.5 - 4 mm²

Cycle of mechanical operation

200



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	Version	Fastening on side	Contacts	Pieces / PU
16-pin terminal adapter					
70315100	TB-H-BE 16 BRE	female	right	1 - 16	10
70314100	TB-H-BE 16 BLI	female	left	1 - 16	10
24-pin terminal adapter					
70317100	TB-H-BE 24 BRE	female	right	1 - 24	10
70316100	TB-H-BE 24 BLI	female	left	1 - 24	10

Photographs are not to scale and do not represent detailed images of the respective products.



Info

- Power and signal modules can be used together in one housing

EPIC® MC Module: High Current 1+PE



Info

- Power and signal modules can be used together in one housing

EPIC® MC Module: High Current 2pole



Info

- Power and signal modules can be used together in one housing

EPIC® MC Module: High Voltage 3pole



■ Suitable housing:

EPIC® MC Module: High Current 1+PE

- EPIC® MCR Frames Page 485
- Higher housing
- The suitable connector housings depend on the modular frame used

EPIC® MC Module: High Current 2pole

- Higher housing
- The suitable connector housings depend on the modular frame used

EPIC® MC Module: High Voltage 3pole

- EPIC® MC 3.6 machined contacts Page 494
- The suitable connector housings depend on the modular frame used

■ Suitable contacts:

EPIC® MC Module: High Voltage 3pole

- EPIC® MC 3.6 machined contacts Page 494

■ Suitable tools

EPIC® MC Module: High Current 1+PE

- PEW 12 universal tool refer to page 932
- When connecting 25 mm² cables, please use the special crimping die (11147500) for the cable-end sleeves

EPIC® MC Module: High Current 2pole

- PEW 12 universal tool refer to page 932
- When connecting 25 mm² cables, please use the special crimping die (11147500) for the cable-end sleeves

■ Technical data

Rated voltage (V)

EPIC® MC Module: High Current 1+PE

IEC: 1000 V
UL: 600 V
CSA: 600 V

EPIC® MC Module: High Current 2pole

IEC: 1000 V
UL: 600 V
CSA: 600 V

EPIC® MC Module: High Voltage 3pole

1000 V

Rated current (A)

EPIC® MC Module: High Current 1+PE

82 A

EPIC® MC Module: High Current 2pole

82 A

EPIC® MC Module: High Voltage 3pole

50 A

Degree of soiling

3

Contact resistance

< 2 mOhm

Contacts

Copper alloy, hard silver-plated

Number of contacts

EPIC® MC Module: High Current 1+PE

1 + PE

EPIC® MC Module: High Current 2pole

2

EPIC® MC Module: High Voltage 3pole

3

Termination methods

EPIC® MC Module: High Current 1+PE

Screw termination: 10.0 - 25.0 mm²

EPIC® MC Module: High Current 2pole

Screw termination: 10.0 - 25.0 mm²

EPIC® MC Module: High Voltage 3pole

Crimp termination: 1.5 - 10.0 mm²

Cycle of mechanical operation

100



Temperature range

-40 °C to +100 °C, short-term up to +125 °C



VDE-tested

EPIC® MC Module: High Current 1+PE
Certified production control: VDE-REG. no. 870

EPIC® MC Module: High Current 2pole
Certified production control: VDE-REG. no. 870

■ Benefits

- The mixed assembly guarantees high flexibility
- Assemble special connectors that match your specific applications

■ Application range

- Plant engineering
- Printing machines
- Control engineering

Article number	Article	Version	Contacts	Pieces / PU
Module: high current 1-pin + PE (occupies 2 slots in the MCR frame)				
10344600	MCS-HC 1+PE	male	1 + PE	5
10345600	MCB-HC 1+PE	female	1 + PE	5
Module: high current 2-pin (occupies 2 slots in the MCR frame)				
10344100	MCS-HC 2	male	2	5
10345100	MCB-HC 2	female	2	5
Module: high voltage 3-pin				
10399800	MCS 3 CM-HV	male	3	10
10399900	MCB 3 CM-HV	female	3	10

Photographs are not to scale and do not represent detailed images of the respective products.

■ Accessories

- EPIC® MC Module removal tool refer to page 484
- EPIC® MCR Frames refer to page 485

EPIC® MC Module: High Voltage 4+PE



Info

- Power and signal modules can be used together in one housing

EPIC® MC Module: 3pole



Info

- Power and signal modules can be used together in one housing

EPIC® MC Module: HE 4pole



Info

- Power and signal modules can be used together in one housing

Suitable housing:

- EPIC® MCR Frames Page 485
- The suitable connector housings depend on the modular frame used

Suitable contacts:

- EPIC® MC Module: High Voltage 4+PE**
- EPIC® MC 2.5 stamped contacts Page 492
 - EPIC® MC 2.5 stamped contacts-on-reel Page 493
- EPIC® MC Module: 3pole**
- EPIC® MC 3.6 machined contacts Page 494
- EPIC® MC Module: HE 4pole**
- EPIC® H-BE 2.5 machined contacts Page 490

Benefits

- The mixed assembly guarantees high flexibility
- Assemble special connectors that match your specific applications

Technical data

Rated voltage (V)
 EPIC® MC Module: High Voltage 4+PE
 1000 V
 EPIC® MC Module: 3pole
 630 V
 EPIC® MC Module: HE 4pole
 630 V

Rated current (A)
 EPIC® MC Module: High Voltage 4+PE
 16 A
 EPIC® MC Module: 3pole
 40 A
 EPIC® MC Module: HE 4pole
 25 A

Degree of soiling
 3

Contact resistance
 < 2 mOhm

Contacts
 Copper alloy, hard silver-plated

Number of contacts
 EPIC® MC Module: High Voltage 4+PE
 4 + PE
 EPIC® MC Module: 3pole
 3
 EPIC® MC Module: HE 4pole
 4

Termination methods
 EPIC® MC Module: High Voltage 4+PE
 Crimp termination: 0.5 - 2.5 mm²
 EPIC® MC Module: 3pole
 Crimp termination: 1.5 - 10.0 mm²
 EPIC® MC Module: HE 4pole
 Crimp termination: 0.5 - 4.0 mm²

Cycle of mechanical operation
 100



Temperature range
 -40 °C to +100 °C, short-term up to +125 °C

Application range

- Plant engineering
- Printing machines
- Control engineering

Article number	Article	Version	Contacts	Pieces / PU
Module: high voltage 4-pin + PE				
10383200	MCS 5 CG	male	4 + PE	10
10383300	MCB 5 CG	female	4 + PE	10
Module: 3-pin				
10382000	MCS 3 CM	male	3	10
10382100	MCB 3 CM	female	3	10
Module: 4-pin HE				
10399000	MCS 4 CM	male	4	10
10399100	MCB 4 CM	female	4	10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

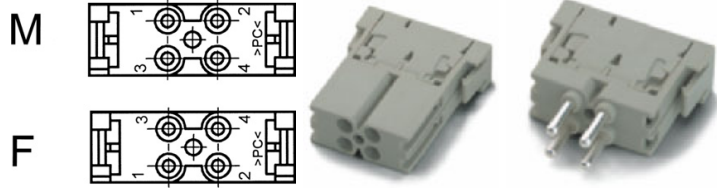
- EPIC® MC Module removal tool refer to page 484
- EPIC® MCR Frames refer to page 485



Info

- Power and signal modules can be used together in one housing

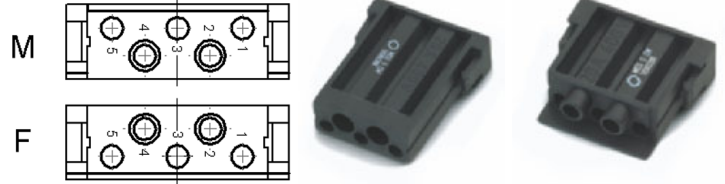
EPIC® MC Module: Cage clamp 4pole



Info

- Power and signal modules can be used together in one housing

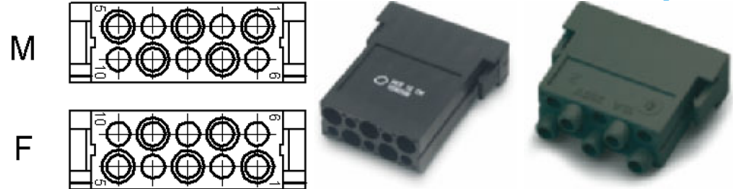
EPIC® MC Module: 5pole



Info

- Power and signal modules can be used together in one housing

EPIC® MC Module: 10pole



■ Suitable housing:

- EPIC® MCR Frames Page 485
- The suitable connector housings depend on the modular frame used

■ Suitable contacts:

- EPIC® MC Module: 5pole**
- EPIC® MC 2.5 machined contacts Page 491
- EPIC® MC Module: 10pole**
- EPIC® H-D 1.6 machined contacts Page 487

■ Benefits

- The mixed assembly guarantees high flexibility
- Assemble special connectors that match your specific applications

■ Application range

- Plant engineering
- Printing machines
- Control engineering

■ Technical data

Rated voltage (V)
400 V

Rated current (A)
EPIC® MC Module: Cage clamp 4pole
14 A

EPIC® MC Module: 5pole
20 A

EPIC® MC Module: 10pole
max. 10 A

Degree of soiling
3

Contact resistance
EPIC® MC Module: Cage clamp 4pole
1.5 - 4 mohm

EPIC® MC Module: 5pole
< 2 mOhm

EPIC® MC Module: 10pole
< 2 mOhm

Contacts
EPIC® MC Module: Cage clamp 4pole
Copper alloy, hard silver-plated
EPIC® MC Module: 5pole
Copper alloy, hard silver-plated
EPIC® MC Module: 10pole
Copper alloy, hard silver/gold-plated

Number of contacts
EPIC® MC Module: Cage clamp 4pole
4

EPIC® MC Module: 5pole
5

EPIC® MC Module: 10pole
10

Termination methods
EPIC® MC Module: Cage clamp 4pole
Cage clamp termination: 0.5 - 2.5 mm²

EPIC® MC Module: 5pole
Crimp termination: 0.5 - 4.0 mm²

EPIC® MC Module: 10pole
Crimp termination: 0.14 - 2.5 mm²

Cycle of mechanical operation
100



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	Version	Contacts	Pieces / PU
Module: 4-pin cage clamp				
10399600	MCS 4 F	male	4	10
10399700	MCB 4 F	female	4	10
Module: 5-pin				
10382200	MCS 5 CM	male	5	10
10382300	MCB 5 CM	female	5	10
Module: 10-pin				
10382400	MCS 10 CM	male	10	10
10382500	MCB 10 CM	female	10	10

Photographs are not to scale and do not represent detailed images of the respective products.

■ Accessories

- EPIC® MC Module removal tool refer to page 484
- EPIC® MCR Frames refer to page 485

Rectangular connectors

EPIC® MC Modules

EPIC® MC Module: 10pole stamped



Info

- Power and signal modules can be used together in one housing

EPIC® MC Module: 20pole



Info

- Power and signal modules can be used together in one housing

EPIC® MC Dummy Module



Suitable housing:

- EPIC® MCR Frames Page 485
- The suitable connector housings depend on the modular frame used

Suitable contacts:

EPIC® MC Module: 10pole stamped

- EPIC® H-D 1.6 stamped contacts Page 488
- EPIC® H-D 1.6 stamped contacts-on-reel Page 489

EPIC® MC Module: 20pole

- EPIC® M-D 1.0 D-Sub stamped contacts-on-reel Page 486

Benefits

EPIC® MC Module: 10pole stamped

- The mixed assembly guarantees high flexibility
- Assemble special connectors that match your specific applications

EPIC® MC Module: 20pole

- The mixed assembly guarantees high flexibility
- Assemble special connectors that match your specific applications

EPIC® MC Dummy Module

- The mixed assembly guarantees high flexibility
- Assemble special connectors that match your specific applications
- Dummy module as a placeholder for future expansion

Technical data

Rated voltage (V)
 EPIC® MC Module: 10pole stamped
 250 V
 EPIC® MC Module: 20pole
 100 V

Rated current (A)
 EPIC® MC Module: 10pole stamped
 max. 10 A
 EPIC® MC Module: 20pole
 4 A

Degree of soiling
 EPIC® MC Module: 10pole stamped
 3
 EPIC® MC Module: 20pole
 3

Contact resistance
 EPIC® MC Module: 10pole stamped
 < 2 mOhm

Contacts
 EPIC® MC Module: 10pole stamped
 Copper alloy, hard silver/gold-plated
 EPIC® MC Module: 20pole
 Copper alloy, gold-plated

Number of contacts
 EPIC® MC Module: 10pole stamped
 10
 EPIC® MC Module: 20pole
 20

Termination methods
 EPIC® MC Module: 10pole stamped
 Crimp termination: 0.14 - 2.5 mm²
 EPIC® MC Module: 20pole
 Crimp termination: 0.08 - 0.56 mm²

Cycle of mechanical operation
 EPIC® MC Module: 10pole stamped
 100
 EPIC® MC Module: 20pole
 50

Temperature range
 -40 °C to +100 °C, short-term up to +125 °C

Application range

- Plant engineering
- Printing machines
- Control engineering

Article number	Article	Version	Contacts	Pieces / PU
Module: 10-pin				
10383400	MCS 10 CG	male	10	10
10383500	MCB 10 CG	female	10	10
Module: 20-pin				
10383600	MCS 20 CG	male	20	10
10383700	MCB 20 CG	female	20	10
Dummy module				
10399400	MCS 0 Blind	male	0	10
10399500	MCB 0 Blind	female	0	10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® MC Module removal tool refer to page 484
- EPIC® MCR Frames refer to page 485

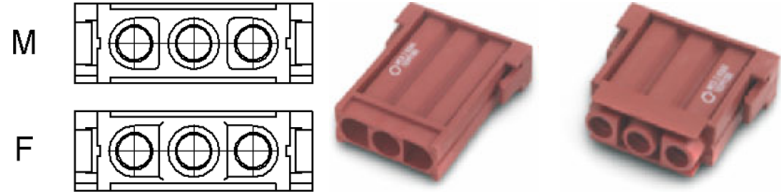
ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

EPIC® MC Module: Koax 3pole



Info

- New: 75 ohm contacts



EPIC® MC Module: PROFIBUS DP



Info

- Power and signal modules can be used together in one housing

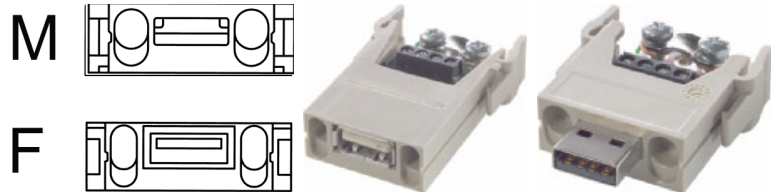


EPIC® MC Module: Universal Bus



Info

- Power and signal modules can be used together in one housing



Suitable housing:

- EPIC® MCR Frames Page 485
- Higher housing
- The suitable connector housings depend on the modular frame used

Suitable contacts:

- EPIC® MC Module: Koax 3pole
- EPIC® MC Coax-Contacts Page 495

Application range

EPIC® MC Module: Koax 3pole

- Plant engineering
- Light & sound technology
- Control engineering

EPIC® MC Module: PROFIBUS DP

- Plant engineering
- Control engineering

EPIC® MC Module: Universal Bus

- Plant engineering
- Control engineering

Benefits

- The mixed assembly guarantees high flexibility
- Assemble special connectors that match your specific applications

Technical data

Rated voltage (V)

EPIC® MC Module: Koax 3pole

250 V

EPIC® MC Module: PROFIBUS DP

30 V

EPIC® MC Module: Universal Bus

30 V

Rated current (A)

EPIC® MC Module: PROFIBUS DP

1 A

EPIC® MC Module: Universal Bus

1 A

Degree of soiling

3

Contact resistance

EPIC® MC Module: Koax 3pole

< 2,7 mOhm

Contacts

Copper alloy, gold-plated

Number of contacts

EPIC® MC Module: Koax 3pole

3

EPIC® MC Module: PROFIBUS DP

2 / 4 + shield

EPIC® MC Module: Universal Bus

4 + shield

Termination methods

EPIC® MC Module: Koax 3pole

Solder termination: var. coax cables

EPIC® MC Module: PROFIBUS DP

Screw termination: for Profibus cable

EPIC® MC Module: Universal Bus

Screw termination: 0.08 - 1.5 mm²

Cycle of mechanical operation

100



Temperature range

EPIC® MC Module: Koax 3pole

-40 °C to +100 °C, short-term up to +125 °C

EPIC® MC Module: PROFIBUS DP

-20 °C - +85 °C

EPIC® MC Module: Universal Bus

-20 °C - +85 °C

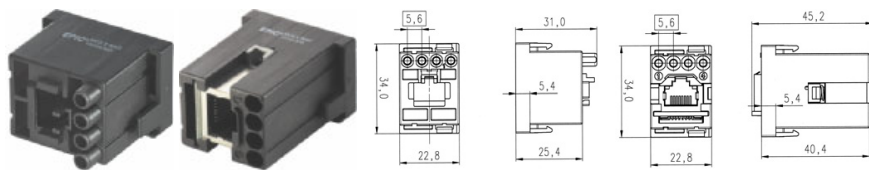
Article number	Article	Version	Contacts	Pieces / PU
Module: 3-pin coax				
10399200	MCS 3 coax	male	3	10
10399300	MCB 3 coax	female	3	10
Module: Profibus DP				
10390400	MCS 2 SS	male	2 + shield	5
10390500	MCS 2 BS	female	2 + shield	5
Module: Universal Bus				
10390600	MCS 4 SS	male	4 + shield	5
10390700	MCS 4 BS	female	4 + shield	5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® MC Module removal tool refer to page 484
- EPIC® MCR Frames refer to page 485

EPIC® MC Module: RJ45



Info

- Power and signal modules can be used together in one housing

Suitable housing:

- EPIC® MCR Frames Page 485
- Higher housing
- The suitable connector housings depend on the modular frame used

Suitable contacts:

- EPIC® H-D 1.6 machined contacts Page 487

Benefits

- The mixed assembly guarantees high flexibility
- Assemble special connectors that match your specific applications

Application range

- Plant engineering
- Control engineering

Technical data

Rated voltage (V)
max. 600 V / max. 125 V

Rated current (A)
max. 10 A / max. 1.5 A

Degree of soiling
3

Contacts
Copper alloy, gold-plated

Number of contacts
4 Power + 8 Data

Termination methods
Power: crimp termination: 0.14 - 2.5 mm²,
Data: IDC/piercing termination: Cat5, AWG 24-26

Cycle of mechanical operation
100



Temperature range
-20°C - +85°C

Article number	Article	Version	Contacts	Pieces / PU
Module: RJ 45 (occupies 2 slots in the frame)				
10344300	MCS 8 RJ45	male	4 + 8	5
10345300	MCB 8 RJ45	female	4 + 8	5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® MC Module removal tool refer to page 484
- EPIC® MCR Frames refer to page 485

EPIC® CE6326 Connector RJ45



Suitable housing:

- EPIC® MCR Frames Page 485

Benefits

- RJ45 connector for use in the module MCS 8 RJ45

Application range

- Plant engineering
- Control engineering

Suitable tools

- Crimping tool RJ45 Stewart refer to page 420
- Use crimping tool type CE5092

Technical data

Rated voltage (V)
max. 125 V

Rated current (A)
max. 1.5 A

Degree of soiling
3

Contacts
Copper alloy, gold-plated

Number of contacts
8

Termination methods
IDC/piercing termination:
Cat 5, AWG 24-26

Cycle of mechanical operation
100



Temperature range
-20°C - +85°C

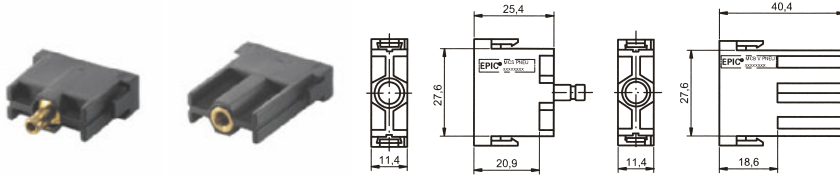
Article number	Article	Version	Contacts	Pieces / PU
RJ45 connector for MCS 8 RJ45				
CE6326	CE6326	male	8	10

Photographs are not to scale and do not represent detailed images of the respective products.

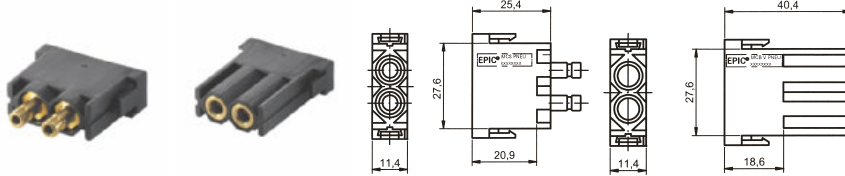
Accessories

- EPIC® MCR Frames refer to page 485

EPIC® MC Module Pneumatic 1 pole



EPIC® MC Module Pneumatic 2 pole



Suitable housing:

EPIC® MC Module Pneumatic 1 pole

- EPIC® MCR Frames Page 485
- Higher housing
- The suitable connector housings depend on the modular frame used

Benefits

- The mixed assembly guarantees high flexibility
- Assemble special connectors that match your specific applications

Application range

- Plant engineering
- Printing machines
- Control engineering

Technical data

Contacts
Brass

Number of contacts
EPIC® MC Module Pneumatic 1 pole
1
EPIC® MC Module Pneumatic 2 pole
2

Termination methods

Plug-in connection: for hose with inner diameter 2.5 mm/4.0 mm

Cycle of mechanical operation
100



Temperature range
-20°C to +100°C

Article number	Article	Version	Contacts	Maximum pressure (bar)	Pieces / PU
Module: pneumatic 1-pin					
44424004	MCS 1x2,5 PNEU (10)	male	1	10	10
44424005	MCB 1x2,5 PNEU (10)	female with valve	1	10	10
44424006	MCS 1x4,0 PNEU (10)	male	1	10	10
44424007	MCB 1x4,0 PNEU (10)	female with valve	1	10	10
Module: pneumatic 2-pin					
44424008	MCS 2x2,5 PNEU (10)	male	2	10	10
44424009	MCB 2x2,5 PNEU (10)	female with valve	2	10	10
44424010	MCS 2x4,0 PNEU (10)	male	2	10	10
44424011	MCB 2x4,0 PNEU (10)	female with valve	2	10	10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® MC Module removal tool refer to page 484
- EPIC® MCR Frames refer to page 485

EPIC® MC Module removal tool



Suitable housing:

- EPIC® MCR Frames Page 485

Benefits

- This tool is used to lift built-in modules out of the module frames

Article number	Article	Pieces / PU
MC module removal tool		
11171200	MC module removal tool	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

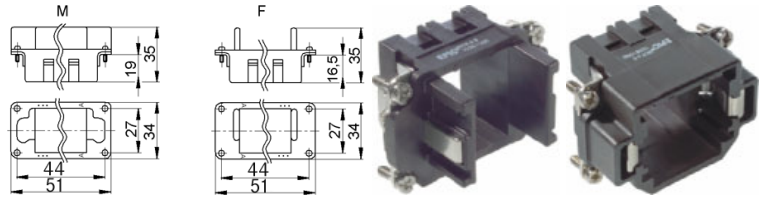
- EPIC® MCR Frames refer to page 485

EPIC® MCR 6



Info

- Various modules can be used together in one housing

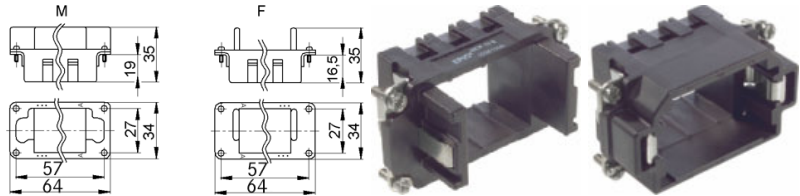


EPIC® MCR 10



Info

- Various modules can be used together in one housing

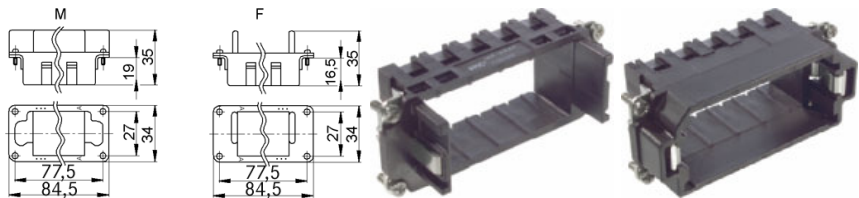


EPIC® MCR 16



Info

- Various modules can be used together in one housing

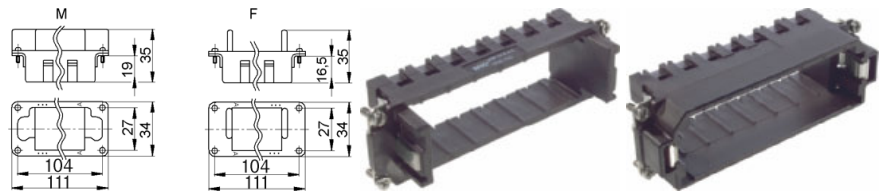


EPIC® MCR 24



Info

- Various modules can be used together in one housing



Suitable housing:

EPIC® MCR 6

- EPIC® H-B 6 Housings Page 526
- EPIC® ULTRA H-B 6 TG LB Page 521
- EPIC® ULTRA H-B 6 TS LB Page 521
- EPIC® ULTRA H-B 6 AG LB Page 522
- EPIC® ULTRA H-B 6 SGR LB Page 522
- EPIC® QUICK & EASY Mounting system Page 579

EPIC® MCR 10

- EPIC® H-B 10 Housings Page 532

- EPIC® ULTRA H-B 10 TS QB Page 523
- EPIC® ULTRA H-B 10 AG QB Page 523

EPIC® MCR 16

- EPIC® H-B 16 Housings Page 545
- EPIC® ULTRA H-B 16 TS QB Page 524
- EPIC® ULTRA H-B 16 AG QB Page 524

EPIC® MCR 24

- EPIC® H-B 24 Housings Page 559
- EPIC® ULTRA H-B 24 TS QB Page 525
- EPIC® ULTRA H-B 24 AG QB Page 525

Benefits

- The mixed assembly guarantees high flexibility
- Assemble special connectors that match your specific applications

Product features

- The MCR “male” frame version is designed for use with modules with male contacts; the “female” version is designed for use with modules with female contacts

Article number	Article	Number of modules	Version	Pieces / PU
MCR 6 frame				
10381000	MCR 6 S	2	male	5
10381100	MCR 6 B	2	female	5
MCR 10 frame				
10381200	MCR 10 S	3	male	5
10381300	MCR 10 B	3	female	5
MCR 16 frame				
10381400	MCR 16 S	5	male	5
10381500	MCR 16 B	5	female	5
MCR 24 frame				
10381600	MCR 24 S	7	male	5
10381700	MCR 24 B	7	female	5

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® M-D 1.0 D-Sub stamped contacts-on-reel



Suitable tools

- Crimping tool for contacts-on-reel D-Sub
- Removal tool

Article number	Article	Version	Conductor cross-section (mm ²)	Surface	Stripping length (mm)	Note	Pieces / PU
Contacts							
44429011	EPIC® D-SUB SCBG AU G2 0,08-0,22 (500)	male	0.08 - 0.22	Au (0.8 µm)	2.5 + 0.5	1 reel (PU) = 500 contacts	1
44429007	EPIC® D-SUB BCBG AU G2 0,08-0,22 (500)	female	0.08 - 0.22	Au (0.8 µm)	2.5 + 0.5	1 reel (PU) = 500 contacts	1
44429013	EPIC® D-SUB SCBG AU G3 0,08-0,22 (500)	male	0.08 - 0.22	Au (0.1 µm)	2.5 + 0.5	1 reel (PU) = 500 contacts	1
44429009	EPIC® D-SUB BCBG AU G3 0,08-0,22 (500)	female	0.08 - 0.22	Au (0.1 µm)	2.5 + 0.5	1 reel (PU) = 500 contacts	1
44429012	EPIC® D-SUB SCBG AU G2 0,22-0,56 (500)	male	0.22 - 0.56	Au (0.8 µm)	2.5 + 0.5	1 reel (PU) = 500 contacts	1
44429008	EPIC® D-SUB BCBG AU G2 0,22-0,56 (500)	female	0.22 - 0.56	Au (0.8 µm)	2.5 + 0.5	1 reel (PU) = 500 contacts	1
44429014	EPIC® D-SUB SCBG AU G3 0,22-0,56 (500)	male	0.22 - 0.56	Au (0.1 µm)	2.5 + 0.5	1 reel (PU) = 500 contacts	1
44429010	EPIC® D-SUB BCBG AU G3 0,22-0,56 (500)	female	0.22 - 0.56	Au (0.1 µm)	2.5 + 0.5	1 reel (PU) = 500 contacts	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Tools for M-D 1,0 D-Sub contacts-on-reel stamped



Suitable contacts:

- EPIC® M-D 1.0 D-Sub stamped contacts-on-reel Page 486

Article number	Article	Version	Note	Pieces / PU
11158400	Crimping tool	In tool case	Crimping dies included,for contacts H-D 1.0 D-Sub (0.08 - 0.56 mm ²)	1
11132500	Removal tool		For ribbon contacts: D-Sub 1.0 stamped	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-D 1.6 machined contacts



Suitable tools

- EPIC® Tools for contacts H-D 1.6 machined
- Pneumatic crimping machine for single contacts
- Crimping tool for single contacts
- Crimping dies for single contacts
- Locator
- Removal tool

Article number	Article	Version	Conductor cross-section (mm²)	Cross-section ratio	Surface	Stripping length (mm)	Pieces / PU
Contacts							
13162000	H-D 1.6 machined	male	0.14 - 0.37	1.0	Ag	8.0	100
13163000	H-D 1.6 machined	female	0.14 - 0.37	1.0	Ag	8.0	100
13162100	H-D 1.6 machined	male	0.50	2.0	Ag	8.0	100
13163100	H-D 1.6 machined	female	0.50	2.0	Ag	8.0	100
13162200	H-D 1.6 machined	male	0.75 - 1.00	3.0	Ag	8.0	100
13163200	H-D 1.6 machined	female	0.75 - 1.00	3.0	Ag	8.0	100
13162300	H-D 1.6 machined	male	1.50	4.0	Ag	8.0	100
13163300	H-D 1.6 machined	female	1.50	4.0	Ag	8.0	100
13162400	H-D 1.6 machined	male	2.50	5.0	Ag	5.8	100
13163400	H-D 1.6 machined	female	2.50	5.0	Ag	5.8	100
13162500	H-D 1.6 machined	male	0.14 - 0.37	1.0	Au	8.0	100
13163500	H-D 1.6 machined	female	0.14 - 0.37	1.0	Au	8.0	100
13162600	H-D 1.6 machined	male	0.50	2.0	Au	8.0	100
13163600	H-D 1.6 machined	female	0.50	2.0	Au	8.0	100
13162700	H-D 1.6 machined	male	0.75 - 1.00	3.0	Au	8.0	100
13163700	H-D 1.6 machined	female	0.75 - 1.00	3.0	Au	8.0	100
13162800	H-D 1.6 machined	male	1.50	4.0	Au	8.0	100
13163800	H-D 1.6 machined	female	1.50	4.0	Au	8.0	100
13162900	H-D 1.6 machined	male	2.50	5.0	Au	5.8	100
13163900	H-D 1.6 machined	female	2.50	5.0	Au	5.8	100

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Tools for contacts H-D 1.6 machined



Product features

- Locator and crimping dies fit together with the crimping tool 11147000 and the crimping machine 11147001

Article number	Article	Version	Note	Pieces / PU
11147000	Crimping tool	In tool case	without crimping dies, without locator	1
11147001	Crimping machine	Pneumatic, 5 - 10 bar	without crimping dies, without locator	1
11147100	Crimping dies	For crimping tools 11147000, 11147001	For contacts: H-D 1.6 machined, H-BE 2.5 machined, MC 2.5 machined	1
11147200	Locator	For crimping tools 11147000, 11147001	For contacts: H-D 1.6 machined, H-BE machined, MC 2.5 machined, MC 2.5 stamped	1
11161000	Removal tool		For contacts: H-D 1.6 machined, H-D 1.6 stamped	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-D 1.6 stamped contacts



Suitable tools

- Pneumatic crimping machine for single contacts
- Crimping tool for single contacts
- Crimping dies for single contacts
- Locator
- Removal tool

Article number	Article	Version	Conductor cross-section (mm ²)	Surface	Stripping length (mm)	Pieces / PU
Contacts						
11241100	H-D 1.6 stamped	male	0.14 - 0.50	Ag	2.5 + 0.5	100
11231100	H-D 1.6 stamped	female	0.14 - 0.50	Ag	2.5 + 0.5	100
11221000	H-D 1.6 stamped	male	0.50 - 1.50	Ag	3.5 + 0.5	100
11236100	H-D 1.6 stamped	female	0.50 - 1.50	Ag	3.5 + 0.5	100
11223500	H-D 1.6 stamped	male	1.50 - 2.50	Ag	3.5 + 0.5	100
11228500	H-D 1.6 stamped	female	1.50 - 2.50	Ag	3.5 + 0.5	100
11243100	H-D 1.6 stamped	male	0.14 - 0.50	Au	2.5 + 0.5	100
11233100	H-D 1.6 stamped	female	0.14 - 0.50	Au	2.5 + 0.5	100
11221300	H-D 1.6 stamped	male	0.50 - 1.50	Au	3.5 + 0.5	100
11238100	H-D 1.6 stamped	female	0.50 - 1.50	Au	3.5 + 0.5	100

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Tools for contacts H-D 1.6 stamped



Product features

- Locator and crimping dies fit together with the crimping tool 11147000 and the crimping machine 11147001

Article number	Article	Version	Note	Pieces / PU
11147000	Crimping tool	In tool case	without crimping dies, without locator	1
11147001	Crimping machine	Pneumatic, 5 - 10 bar	without crimping dies, without locator	1
11147170	Crimping dies	For crimping tools 11147000, 11147001	For contacts: H-D 1.6 stamped (0.14 - 0.5 mm ²)	1
11147180	Crimping dies	For crimping tools 11147000, 11147001	For contacts: H-D 1.6 stamped (0.5 - 1.5 mm ²), MC 2.5 stamped (0.5 - 1.5 mm ²)	1
11147190	Crimping dies	For crimping tools 11147000, 11147001	For contacts: H-D 1.6 stamped (1.5 - 2.5 mm ²), MC 2.5 stamped (1.5 - 2.5 mm ²)	1
11147300	Locator		For contacts: H-D 1.6 machined, H-D 1.6 stamped	1
11161000	Removal tool		For contacts: H-D 1.6 machined, H-D 1.6 stamped	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-D 1.6 stamped contacts-on-reel



■ Suitable tools

- Crimping tool for contacts-on-reel
- Crimping dies for contacts-on-reel
- Locator
- Removal tool

Article number	Article	Version	Conductor cross-section (mm²)	Surface	Stripping length (mm)	Note	Pieces / PU
Contacts							
11240700	H-D SCBG AG 0.14-0.5 200 LI	male	0.14 - 0.50	Ag	2.5 + 0.5	1 reel (PU) = 200 contacts	1
11230700	H-D BCBG AG 0.14-0.5 200 LI	female	0.14 - 0.50	Ag	2.5 + 0.5	1 reel (PU) = 200 contacts	1
11240400	H-D SCBG AG 0.14-0.5 2000 LI	male	0.14 - 0.50	Ag	2.5 + 0.5	1 reel (PU) = 2000 contacts	1
11230400	H-D BCBG AG 0.14-0.5 2000 LI	female	0.14 - 0.50	Ag	2.5 + 0.5	1 reel (PU) = 2000 contacts	1
11240000	H-D SCBG AG 0.14-0.5 2000 RE	male	0.14 - 0.50	Ag	2.5 + 0.5	1 reel (PU) = 2000 contacts	1
11230000	H-D BCBG AG 0.14-0.5 2000 RE	female	0.14 - 0.50	Ag	2.5 + 0.5	1 reel (PU) = 2000 contacts	1
11240500	H-D SCBG AU 0.14-0.5 2000 LI	male	0.14 - 0.50	Au	2.5 + 0.5	1 reel (PU) = 2000 contacts	1
11230500	H-D BCBG AU 0.14-0.5 2000 LI	female	0.14 - 0.50	Au	2.5 + 0.5	1 reel (PU) = 2000 contacts	1
11220700	H-D SCBG AG 0.5-1.5 200 LI	male	0.50 - 1.50	Ag	3.5 + 0.5	1 reel (PU) = 200 contacts	1
11235700	H-D BCBG AG 0.5-1.5 200 LI	female	0.50 - 1.50	Ag	3.5 + 0.5	1 reel (PU) = 200 contacts	1
11226000	H-D SCBG AG 0.5-1.5 2000 LI	male	0.50 - 1.50	Ag	3.5 + 0.5	1 reel (PU) = 2000 contacts	1
11226500	H-D BCBG AG 0.5-1.5 2000 LI	female	0.50 - 1.50	Ag	3.5 + 0.5	1 reel (PU) = 2000 contacts	1
11220000	H-D SCBG AG 0.5-1.5 2000 RE	male	0.50 - 1.50	Ag	2.5 + 0.5	1 reel (PU) = 2000 contacts	1
11235000	H-D BCBG AG 0.5-1.5 2000 RE	female	0.50 - 1.50	Ag	2.5 + 0.5	1 reel (PU) = 2000 contacts	1
11220100	H-D SCBG AU 0.5-1.5 2000 RE	male	0.50 - 1.50	Au	2.5 + 0.5	1 reel (PU) = 2000 contacts	1
11235200	H-D BCBG AU 0.5-1.5 2000 RE	female	0.50 - 1.50	Au	2.5 + 0.5	1 reel (PU) = 2000 contacts	1
11223000	H-D SCBG AG 1.5-2.5 100 LI	male	1.50 - 2.50	Ag	3.5 + 0.5	1 reel (PU) = 100 contacts	1
11228000	H-D BCBG AG 1.5-2.5 100 LI	female	1.50 - 2.50	Ag	3.5 + 0.5	1 reel (PU) = 100 contacts	1
11222700	H-D SCBG AG 1.5-2.5 2000 LI	male	1.50 - 2.50	Ag	3.5 + 0.5	1 reel (PU) = 2000 contacts	1
11227700	H-D BCBG AG 1.5-2.5 2000 LI	female	1.50 - 2.50	Ag	3.5 + 0.5	1 reel (PU) = 2000 contacts	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Tools for contacts-on-reel H-D 1.6 stamped



Article number	Article	Version	Note	Pieces / PU
11153600	Crimping dies	For crimping tool 11153500	For ribbon contacts: H-D 1.6 stamped (0.14 - 0.5 mm²)	1
11161000	Removal tool		For contacts: H-D 1.6 machined, H-D 1.6 stamped	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-BE 2.5 machined contacts



Suitable tools

- Pneumatic crimping machine for single contacts
- Crimping dies for single contacts
- Crimping tool for single contacts
- Locator
- Removal tool

Article number	Article	Version	Conductor cross-section (mm²)	Cross-section ratio	Surface	Stripping length (mm)	Pieces / PU
Contacts							
11190000	H-BE 2.5 machined	male	0.50		Ag	7.4	100
11195000	H-BE 2.5 machined	female	0.50		Ag	7.3	100
11190100	H-BE 2.5 machined	male	0.75 - 1.00	1.0	Ag	7.4	100
11195100	H-BE 2.5 machined	female	0.75 - 1.00	1.0	Ag	7.3	100
11190200	H-BE 2.5 machined	male	1.50	2.0	Ag	7.4	100
11195200	H-BE 2.5 machined	female	1.50	2.0	Ag	7.3	100
11190300	H-BE 2.5 machined	male	2.50	3.0	Ag	7.4	100
11195300	H-BE 2.5 machined	female	2.50	3.0	Ag	7.3	100
11190400	H-BE 2.5 machined	male	4.00		Ag	7.4	100
11195400	H-BE 2.5 machined	female	4.00		Ag	7.3	100
11192000	H-BE 2.5 machined	male	0.50		Au	7.4	100
11197000	H-BE 2.5 machined	female	0.50		Au	7.3	100
11192100	H-BE 2.5 machined	male	0.75 - 1.00	1.0	Au	7.4	100
11197100	H-BE 2.5 machined	female	0.75 - 1.00	1.0	Au	7.3	100
11192200	H-BE 2.5 machined	male	1.50	2.0	Au	7.4	100
11197200	H-BE 2.5 machined	female	1.50	2.0	Au	7.3	100

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Tools for contacts H-BE 2.5 machined



Product features

- Locator and crimping dies fit together with the crimping tool 11147000 and the crimping machine 11147001

Article number	Article	Version	Note	Pieces / PU
11147000	Crimping tool	In tool case	without crimping dies, without locator	1
11147001	Crimping machine	Pneumatic, 5 - 10 bar	without crimping dies, without locator	1
11147100	Crimping dies	For crimping tools 11147000, 11147001	For contacts: H-D 1.6 machined, H-BE 2.5 machined, MC 2.5 machined	1
11147200	Locator	For crimping tools 11147000, 11147001	For contacts: H-D 1.6 machined, H-BE machined, MC 2.5 machined, MC 2.5 stamped	1
11182500	Removal tool		For contacts: H-BE 2.5 machined	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® MC 2.5 machined contacts



Suitable tools

- Pneumatic crimping machine for single contacts
- Crimping tool for single contacts
- Crimping dies for single contacts
- Locator
- Removal tool

Article number	Article	Version	Version	Conductor cross-section (mm ²)	Cross-section ratio	Surface	Stripping length (mm)	Pieces / PU
Contacts								
1121300C	MC 2.5 machined	male		0.50		Ag	7.8	100
1121800C	MC 2.5 machined		female	0.50		Ag	7.8	100
1121310C	MC 2.5 machined	male		1.00	1.0	Ag	7.8	100
1121810C	MC 2.5 machined		female	1.00	1.0	Ag	7.8	100
1121320C	MC 2.5 machined	male		1.50	2.0	Ag	7.8	100
1121820C	MC 2.5 machined		female	1.50	2.0	Ag	7.8	100
1121330C	MC 2.5 machined	male		2.50	3.0	Ag	7.8	100
1121830C	MC 2.5 machined		female	2.50	3.0	Ag	7.8	100
1121340C	MC 2.5 machined	male		4.00		Ag	7.8	100
1121840C	MC 2.5 machined		female	4.00		Ag	7.8	100

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Tools for contacts MC 2.5 machined



Product features

- Locator and crimping dies fit together with the crimping tool 11147000 and the crimping machine 11147001

Article number	Article	Version	Note	Pieces / PU
11147000	Crimping tool	In tool case	without crimping dies, without locator	1
11147001	Crimping machine	Pneumatic, 5 - 10 bar	without crimping dies, without locator	1
11147100	Crimping dies	For crimping tools 11147000, 11147001	For contacts: H-D 1.6 machined, H-BE 2.5 machined, MC 2.5 machined	1
11147200	Locator	For crimping tools 11147000, 11147001	For contacts: H-D 1.6 machined, H-BE machined, MC 2.5 machined, MC 2.5 stamped	1
11171000	Removal tool		For contacts: MC 2.5 machined	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® MC 2.5 stamped contacts



Suitable tools

- Pneumatic crimping machine for single contacts
- Crimping tool for single contacts
- Crimping dies for single contacts
- Locator
- Removal tool

Article number	Article	Version	Conductor cross-section (mm²)	Surface	Stripping length (mm)	Pieces / PU
Contacts						
11201000	MC 2.5 stamped	male	0.50 - 1.50	Ag	3.5 + 0.5	100
11205000	MC 2.5 stamped	female	0.50 - 1.50	Ag	3.5 + 0.5	100
11202000	MC 2.5 stamped	male	1.50 - 2.50	Ag	3.5 + 0.5	100
11206000	MC 2.5 stamped	female	1.50 - 2.50	Ag	3.5 + 0.5	100

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Tools for contacts MC 2.5 stamped



Product features

- Locator and crimping dies fit together with the crimping tool 11147000 and the crimping machine 11147001

Article number	Article	Version	Note	Pieces / PU
11147000	Crimping tool	In tool case	without crimping dies, without locator	1
11147001	Crimping machine	Pneumatic, 5 - 10 bar	without crimping dies, without locator	1
11147180	Crimping dies	For crimping tools 11147000, 11147001	For contacts: H-D 1.6 stamped (0.5 - 1.5 mm²), MC 2.5 stamped (0.5 - 1.5 mm²)	1
11147190	Crimping dies	For crimping tools 11147000, 11147001	For contacts: H-D 1.6 stamped (1.5 - 2.5 mm²), MC 2.5 stamped (1.5 - 2.5 mm²)	1
11147300	Locator		For contacts: H-D 1.6 machined, H-D 1.6 stamped	1
11160000	Removal tool		For contacts: MC 2.5 stamped	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® MC 2.5 stamped contacts-on-reel



■ Suitable tools

- Crimping tool for contacts-on-reel
- Crimping dies for contacts-on-reel
- Locator
- Removal tool

Article number	Article	Version	Conductor cross-section (mm²)	Surface	Stripping length (mm)	Note	Pieces / PU
Contacts							
11208000	MC SCBG AG 0.5-1.5 200 LI	male	0.50 - 1.50	Ag	3.5 + 0.5	1 reel (PU) = 200 contacts	1
11209000	MC BCBG AG 0.5-1.5 200 LI	female	0.50 - 1.50	Ag	3.5 + 0.5	1 reel (PU) = 200 contacts	1
11208500	MC SCBG AG 1.5-2.5 100 LI	male	1.50 - 2.50	Ag	3.5 + 0.5	1 reel (PU) = 100 contacts	1
11209500	MC BCBG AG 1.5-2.5 100 LI	female	1.50 - 2.50	Ag	3.5 + 0.5	1 reel (PU) = 100 contacts	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Tools for contacts-on-reel MC 2.5 stamped



Article number	Article	Note	Pieces / PU
11160000	Removal tool	For contacts: MC 2.5 stamped	1
11153800	Crimping dies	For contacts: H-D 1.6 stamped (1.5 - 2.5 mm²), MC 2.5 stamped (1.5 - 2.5 mm²)	1
11153700	Crimping dies	For contacts: H-D 1.6 stamped (0.5 - 1.5 mm²), MC 2.5 stamped (0.5 - 1.5 mm²)	1
11153500	Crimping tool	without crimping dies	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® MC 3.6 machined contacts



Suitable tools

- Pneumatic crimping machine for single contacts
- Crimping dies for single contacts
- Crimping tool for single contacts
- Locator
- Removal tool

Article number	Article	Version	Conductor cross-section (mm ²)	Surface	Stripping length (mm)	Pieces / PU
Contacts						
1121070C	MC 3.6 machined	male	1.50	Ag	10.0	100
1121570C	MC 3.6 machined	female	1.50	Ag	10.0	100
1121060C	MC 3.6 machined	male	2.50	Ag	10.0	100
1121560C	MC 3.6 machined	female	2.50	Ag	10.0	100
1121000C	MC 3.6 machined	male	4.00	Ag	10.0	100
1121500C	MC 3.6 machined	female	4.00	Ag	10.0	100
1121010C	MC 3.6 machined	male	6.00	Ag	10.0	100
1121510C	MC 3.6 machined	female	6.00	Ag	10.0	100
1121020C	MC 3.6 machined	male	10.00	Ag	10.0	100
1121520C	MC 3.6 machined	female	10.00	Ag	10.0	100

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Tools for contacts MC 3.6 machined



Product features

- Locator and crimping dies fit together with the crimping tool 11147000 and the crimping machine 11147001

Article number	Article	Version	Note	Pieces / PU
11147000	Crimping tool	In tool case	without crimping dies, without locator	1
11147001	Crimping machine	Pneumatic, 5 - 10 bar	without crimping dies, without locator	1
11147110	Crimping dies	For crimping tools 11147000, 11147001	For contacts: MC 3.6 machined (1.5 - 2.5 mm ²)	1
11147120	Crimping dies	For crimping tools 11147000, 11147001	For contacts: MC 3.6 machined (4.0 - 10 mm ²)	1
11147210	Locator	For crimping tools 11147000, 11147001	For contacts: MC 3.6 machined	1
11171100	Removal tool		For contacts: MC 3.6 machined	1

Photographs are not to scale and do not represent detailed images of the respective products.



Info

- New: 75 ohm contacts

Product features

- Solder termination: the inner conductor and the outer sleeve of the COAX cable are terminated by soldering

Suitable tools

- Pneumatic crimping machine for single contacts
- Crimping tool for single contacts

- Crimping dies for single contacts
- Locator
- Removal tool

Article number	Article	Version	Surface	For cable type	Pieces / PU
Solder termination					
44429018	EPIC® MC SLEM 500hm RG58CU	male	Au	RG 58 CU	10
44429017	EPIC® MC BLEM 500hm RG58CU	female	Au	RG 58 CU	10
44429020	EPIC® MC SLEM 750hm RG180BU	male	Au	RG 180 BU	10
44429019	EPIC® MC BLEM 750hm RG180BU	female	Au	RG 180 BU	10
44429022	EPIC® MC SLEM 750hm RG187AU	male	Au	RG 187 AU	10
44429021	EPIC® MC BLEM 750hm RG187AU	female	Au	RG 187 AU	10
Solder/crimp termination					
11214200	MC SLEM COAX MALE	male	Au	RG 58	1
11219200	MC BLEM COAX FEMALE	female	Au	RG 58	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Tools for contacts MC Coax



Product features

- Locator and crimping dies fit together with the crimping tool 11147000 and the crimping machine 11147001

Article number	Article	Version	Note	Pieces / PU
11147000	Crimping tool	In tool case	without crimping dies, without locator	1
11147001	Crimping machine	Pneumatic, 5 - 10 bar	without crimping dies, without locator	1
11147130	Crimping dies	For crimping tools 11147000, 11147001	For coax-contacts 11214200, 11219200	1
11171100	Removal tool		For contacts: MC 3.6 machined	1

Photographs are not to scale and do not represent detailed images of the respective products.

Rectangular connectors

EPIC® H-Q contacts, tools, accessories

New

EPIC® H-Q Contacts



New

EPIC® H-Q Cable Glands



New

EPIC® H-Q Accessories



Article number	Article	Version	Version	Cross-section (mm²)	Surface	Stripping length (mm)	Pieces / PU
Contacts							
44420512	EPIC H-Q 4.0 machined		male	1.5	Ag	8.0	25
44420513	EPIC H-Q 4.0 machined		male	2.5	Ag	8.0	25
44420514	EPIC H-Q 4.0 machined		male	4.0	Ag	8.0	25
44420515	EPIC H-Q 4.0 machined		male	6.0	Ag	8.0	25
44420516	EPIC H-Q 4.0 machined		female	1.5	Ag	8.0	25
44420517	EPIC H-Q 4.0 machined		female	2.5	Ag	8.0	25
44420518	EPIC H-Q 4.0 machined		female	4.0	Ag	8.0	25
44420519	EPIC H-Q 4.0 machined		female	6.0	Ag	8.0	25
H-Q cable glands for V16P housings (plastic housings)							
44420537	EPIC H-Q Cable gland	9-13mm					1
44420536	EPIC H-Q Cable gland	11.5 - 15.5mm					1
H-Q cable glands for V21M housings (metal housings)							
44420541	EPIC H-Q Cable gland	9-13mm					1
44420542	EPIC H-Q Cable gland	11.5 - 15.5mm					1
44420543	EPIC H-Q Cable gland	14 - 18mm					1
H-Q EMC cable gland for V21M housings (metal housings)							
44420544	EPIC H-Q cable gland EMC	11.5 - 15.5mm					1
44420545	EPIC H-Q cable gland EMC	14 - 18mm					1
44420534	EPIC H-Q dust cap	for housing H-Q with female insert					1
44420535	EPIC H-Q dust cap	for housing H-Q with male insert					1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

EPIC® H-A 3 Hood Metal straight entry



EPIC® H-A 3 Hood Thermoplastic straight entry



Benefits

- Housing in plastic or metal version. For power supply in the smallest possible space

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

- Hood
- Bolts for single lever
- Straight cable entry
- Versions with / without cable gland

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
EPIC® H-A 3 Hood Metal straight entry
 Housing: powder-coated zinc die-casting, grey
 Lever: zinc-plated steel
EPIC® H-A 3 Hood Thermoplastic straight entry
 Housing: grey thermoplastic, black
 Lever: zinc-plated steel



Protection rating
 IP 65 (latched)



Temperature range
 -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Material	Colour	Cable gland	Cable clamping range	Dimensions incl. cable gland	Pieces / PU
H-A housing: hood (straight cable entry)									
10512100	H-A 3 MTgv		11	Zinc die-casting	grey				10
10426500	H-A 3 MTgv		11	Zinc die-casting	grey	yes	6.5 - 12.0	57.0	10
19512100	H-A 3 MTgv M20	20		Zinc die-casting	grey				10
19426500	H-A 3 MTgv M20	20		Zinc die-casting	grey	yes	3.0 - 13.5	57.0	10
10425500	H-A 3 Tgv		11	Thermoplastic	black				10
10426000	H-A 3 Tgv		11	Thermoplastic	grey				10
10426700	H-A 3 Tgv		11	Thermoplastic	black	yes	6.5 - 12.0	62.0	10
10426400	H-A 3 Tgv		11	Thermoplastic	grey	yes	6.5 - 12.0	62.0	10
19425500	H-A 3 Tgv M20	20		Thermoplastic	black				10
19426000	H-A 3 Tgv M20	20		Thermoplastic	grey				10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

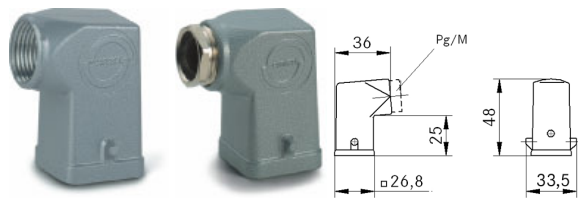
EPIC® H-A 3 Hood Metal straight entry

- SKINTOP® MS-M refer to page 662
- SKINTOP® MS refer to page 717

EPIC® H-A 3 Hood Thermoplastic straight entry

- SKINTOP® ST-M refer to page 652
- SKINTOP® ST refer to page 715

EPIC® H-A 3 Hood Metal side entry



EPIC® H-A 3 Hood Thermoplastic side entry



Benefits

- Housing in plastic or metal version. For power supply in the smallest possible space

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

- Hood
- Bolts for single lever
- Side cable entry
- Versions with / without cable gland

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data



Material

EPIC® H-A 3 Hood Metal side entry
Housing: powder-coated zinc die-casting, grey
Lever: zinc-plated steel
EPIC® H-A 3 Hood Thermoplastic side entry
Housing: grey thermoplastic, black
Lever: zinc-plated steel



Protection rating

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Material	Colour	Cable gland	Cable clamping range	Dimensions incl. cable gland	Pieces / PU
H-A housing: hood (side cable entry)									
10512300	H-A 3 MTs		11	Zinc die-casting	grey				10
10427500	H-A 3 MTs		11	Zinc die-casting	grey	yes	6.5 - 12.0	43.0	10
19512300	H-A 3 Ts M20	20		Zinc die-casting	grey				10
19427500	H-A 3 Ts M20	20		Zinc die-casting	grey	yes	3.0 - 13.5	43.0	10
10427300	H-A 3 Ts		11	Thermoplastic	black				10
10427000	H-A 3 Ts		11	Thermoplastic	grey				10
10620600	H-A 3 Ts		11	Thermoplastic	black	yes	6.5 - 12.0	48.0	10
10427100	H-A 3 Ts		11	Thermoplastic	grey	yes	6.5 - 12.0	48.0	10
19427300	H-A 3 Ts M20	20		Thermoplastic	black				10
19427000	H-A 3 Ts M20	20		Thermoplastic	grey				10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

EPIC® H-A 3 Hood Metal side entry

- SKINTOP® MS-M refer to page 662
- SKINTOP® MS refer to page 717

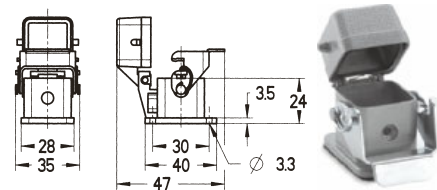
EPIC® H-A 3 Hood Thermoplastic side entry

- SKINTOP® ST-M refer to page 652
- SKINTOP® ST refer to page 715

EPIC® H-A 3 Panel Mount Base (straight)



EPIC® H-A 3 Panel Mount Base with cover



EPIC® H-A 3 Panel Mount Base (angled)



Benefits

- Housing in plastic or metal version. For power supply in the smallest possible space

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 3 Panel Mount Base (straight)

- Panel-mount base
- 1 lever
- Included: flat gasket

EPIC® H-A 3 Panel Mount Base with cover

- Panel-mount base
- 1 lever
- Metal cover
- Included: flat gasket

EPIC® H-A 3 Panel Mount Base (angled)

- Panel-mount base
- 1 lever
- Angled version
- Included: flat gasket

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material

EPIC® H-A 3 Panel Mount Base (straight)

Housing: powder-coated zinc die-casting, grey
Lever: zinc-plated steel
Sealing: NBR

Housing: grey thermoplastic, black

Lever: zinc-plated steel
Sealing: NBR

EPIC® H-A 3 Panel Mount Base with cover

Housing: powder-coated aluminium alloy, grey

Lever: zinc-plated steel
Sealing: NBR

EPIC® H-A 3 Panel Mount Base (angled)

Housing: powder-coated zinc die-casting, grey

Lever: zinc-plated steel
Sealing: NBR

Housing: grey thermoplastic, black

Lever: zinc-plated steel
Sealing: NBR



Protection rating

EPIC® H-A 3 Panel Mount Base (straight)

IP 65 (latched)

EPIC® H-A 3 Panel Mount Base with cover

IP 44 (latched)

EPIC® H-A 3 Panel Mount Base (angled)

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	Colour	Material	Pieces / PU
H-A housing: panel-mount base (straight)				
10422500	H-A 3 Mag	grey	Zinc die-casting	10
10422200	H-A 3 Ag	black	Thermoplastic	10
10422000	H-A 3 Ag	grey	Thermoplastic	10
H-A housing: panel-mount base with cover (with sealing, for female inserts)				
44429015	H-A 3 MAGD	grey	Aluminium die-casting	10
H-A housing: panel-mount base (angled)				
10423500	H-A 3 Mags	grey	Zinc die-casting	10
10423100	H-A 3 Ags	black	Thermoplastic	10
10423000	H-A 3 Ags	grey	Thermoplastic	10

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-A 3 Surface Mount Base



EPIC® H-A 3 Surface Mount Base (open bottom)



Benefits

- Housing in plastic or metal version. For power supply in the smallest possible space

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 3 Surface Mount Base

- Surface-mount base
- 1 lever
- 1 cable entry
- Versions with / without cable gland
- Included: flat gasket

EPIC® H-A 3 Surface Mount Base (open bottom)

- Surface-mount base
- 1 lever
- 2 cable entries
- Housing type: with open base
- Included: flat gasket

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated zinc die-casting, grey
 Lever: zinc-plated steel
 Sealing: NBR
 Housing: grey thermoplastic, black
 Lever: zinc-plated steel
 Sealing: NBR



Protection rating

IP 65 (latched)



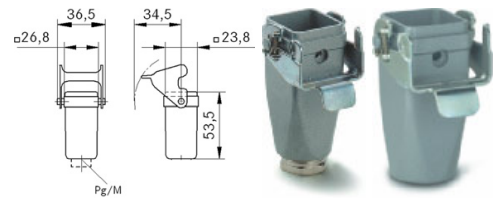
Temperature range

-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Material	Colour	Cable gland	Cable clamping range	Dimensions incl. cable gland	Pieces / PU
H-A housing: surface-mount base									
10512700	H-A 3 MAgsv		11	Zinc die-casting	grey			51.5	10
10424000	H-A 3 Agsv		11	Thermoplastic	grey			56.0	10
10424500	H-A 3 MAgsv		11	Zinc die-casting	grey	yes	6.5 - 12.0	57.5	10
10424200	H-A 3 Agsv		11	Thermoplastic	grey	yes	6.5 - 12.0	65.0	10
19512700	H-A 3 MAgsv M20	20		Zinc die-casting	grey			54.5	10
19421900	H-A 3 Agsv M20	20		Thermoplastic	grey	yes	3.0 - 13.5	56.0	10
19424500	H-A 3 MAgsv M20	20		Zinc die-casting	grey	yes	3.0 - 13.5	60.5	10
H-A housing: surface-mount base (with open base)									
19517200	H-A 3 MAgsv M20	20		Zinc die-casting	grey				10
19515200	H-A 3 Agsv M20	20		Thermoplastic	grey				10

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-A 3 Cable Coupler Hood metal (straight entry)



EPIC® H-A 3 Cable Coupler Hood Thermoplastic (straight entry)



Benefits

- Housing in plastic or metal version. For power supply in the smallest possible space

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

- Cable coupler hood
- 1 lever
- Straight cable entry
- Versions with / without cable gland

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
EPIC® H-A 3 Cable Coupler Hood metal (straight entry)

Housing: powder-coated zinc die-casting, grey
 Lever: zinc-plated steel

EPIC® H-A 3 Cable Coupler Hood Thermoplastic (straight entry)

Housing: grey thermoplastic, black
 Lever: zinc-plated steel



Protection rating
 IP 65 (latched)



Temperature range
 -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Material	Colour	Cable gland	Cable clamping range	Dimensions incl. cable gland	Pieces / PU
H-A housing: cable coupler hood (straight cable entry)									
10512900	H-A 3 MTgvb		11	Zinc die-casting	grey				10
10429500	H-A 3 MTgvb		11	Zinc die-casting	grey	yes	6.5 - 12.0	60.0	10
19512900	H-A 3 MTgvb M20	20		Zinc die-casting	grey				10
10429200	H-A 3 Tgvb		11	Thermoplastic	black				10
10429000	H-A 3 Tgvb		11	Thermoplastic	grey				10
10620300	H-A 3 Tgvb		11	Thermoplastic	black	yes	6.5 - 12.0	65.0	10
10429100	H-A 3 Tgvb		11	Thermoplastic	grey	yes	6.5 - 12.0	65.0	10
19429200	H-A 3 Tgvb M20	20		Thermoplastic	black				10
19429000	H-A 3 Tgvb M20	20		Thermoplastic	grey				10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

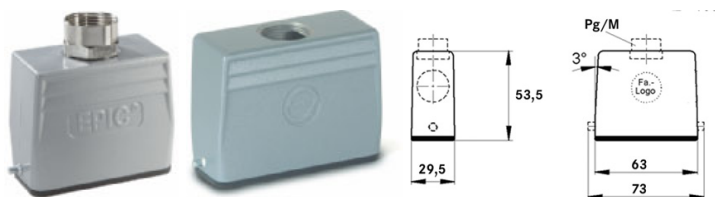
EPIC® H-A 3 Cable Coupler Hood metal (straight entry)

- SKINTOP® MS-M refer to page 662
- SKINTOP® MS refer to page 717

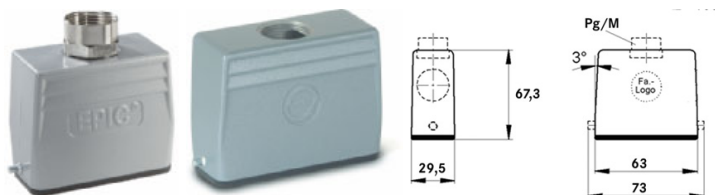
EPIC® H-A 3 Cable Coupler Hood Thermoplastic (straight entry)

- SKINTOP® ST-M refer to page 652
- SKINTOP® ST refer to page 715

EPIC® H-A 10 TG



EPIC® H-A 10 TGH



Benefits

- Small and space-saving for narrow available space

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 10 TG

- Hood, low version
- Bolts for single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-A 10 TGH

- Hood, high version
- Bolts for single lever
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

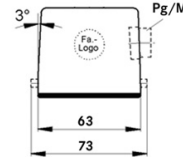
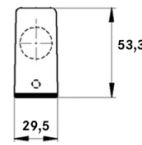
Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: hood (straight cable entry, bolts for single lever)					
10446000	H-A 10 TG 13,5		13.5	yes	5
10446100	H-A 10 TG 16		16	yes	5
19446000	H-A 10 TG M20	20			5
19446100	H-A 10 TG M25	25			5
H-A housing: hood (straight cable entry, bolts for single lever, high version)					
70460200	H-A 10 TGH 16		16	yes	5
70460400	H-A 10 TGH 21		21	yes	5
79460200	H-A 10 TGH M20	20			5
79460400	H-A 10 TGH M25	25			5

Photographs are not to scale and do not represent detailed images of the respective products.

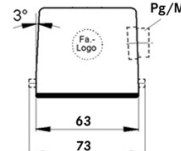
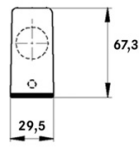
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



EPIC® H-A 10 TS



EPIC® H-A 10 TSH

Benefits

- Small and space-saving for narrow available space

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 10 TS

- Hood, low version
- Bolts for single lever
- Side cable entry
- Versions with neck

EPIC® H-A 10 TSH

- Hood, high version
- Bolts for single lever
- Side cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

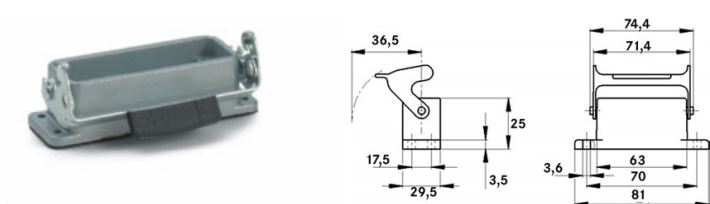
Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: hood (side cable entry, bolts for single lever)					
10445000	H-A 10 TS 16		16	yes	5
10445500	H-A 10 TS 21		21	yes	5
19445000	H-A 10 TS M20	20		yes	5
19445500	H-A 10 TS M25	25		yes	5
H-A housing: hood (side cable entry, bolts for single lever, high version)					
70462200	H-A 10 TSH 16		16	yes	5
70462400	H-A 10 TSH 21		21	yes	5
79462200	H-A 10 TSH M20	20			5
79462400	H-A 10 TSH M25	25			5

Photographs are not to scale and do not represent detailed images of the respective products.

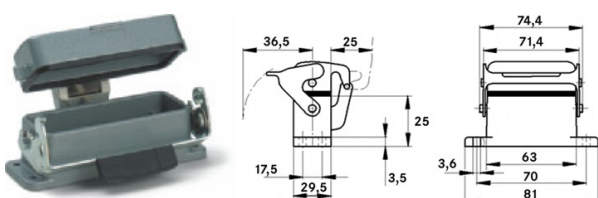
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-A 10 AG-LB



EPIC® H-A 10 AD-LB



Benefits

- Small and space-saving for narrow available space

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 10 AG-LB

- Panel-mount base
- Single lever
- Included: flat gasket

EPIC® H-A 10 AD-LB

- Panel-mount base
- Single lever
- Metal cover
- Included: flat gasket

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

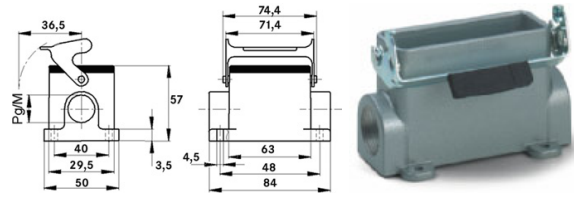
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	Pieces / PU
H-A housing: panel-mount base (single lever)		
10442000	H-A 10 AG-LB	5
H-A housing: panel-mount base (cover, single lever)		
70444000	H-A 10 AD-LB	5

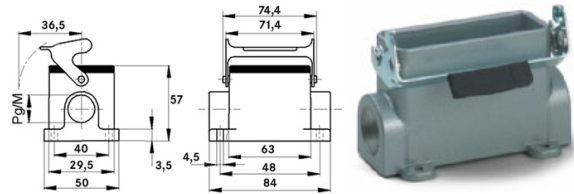
Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® H-A 10 SGR-LB



EPIC® H-A 10 SGRL-LB



Benefits

- Small and space-saving for narrow available space

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 10 SGR-LB

- Surface-mount base
- Single lever
- 1 cable entry

EPIC® H-A 10 SGRL-LB

- Surface-mount base
- Single lever
- 2 cable entries

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

Material
 Housing: powder-coated aluminium alloy, grey
 Lever: zinc-plated steel
 Sealing: NBR

IP **Protection rating**
 IP 65 (latched)

Temperature range
 -40 °C to +100 °C, short-term up to +125 °C

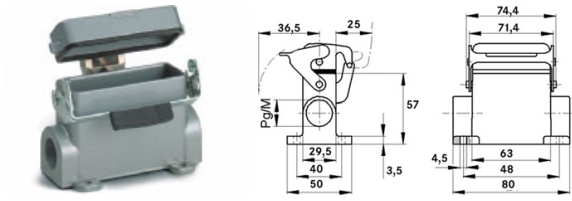
Article number	Article	M	PG	Pieces / PU
H-A housing: surface-mount base (1 cable entry, single lever)				
10448100	H-A 10 SGR-LB 16		16	5
10448000	H-A 10 SGR-LB 21		21	5
19448100	H-A 10 SGR-LB M20	20		5
19448000	H-A 10 SGR-LB M25	25		5
H-A housing: surface-mount base (2 cable entries, single lever)				
10450100	H-A 10 SGRL-LB 16		16	5
19450100	H-A 10 SGRL-LB M20	20		5

Photographs are not to scale and do not represent detailed images of the respective products.

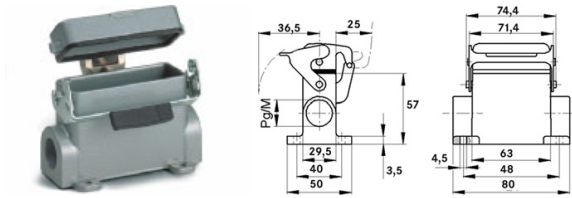
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-A 10 SDR-LB



EPIC® H-A 10 SDRL-LB



Benefits

- Small and space-saving for narrow available space

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 10 SDR-LB

- Surface-mount base
- Single lever
- 1 cable entry
- Metal cover

EPIC® H-A 10 SDRL-LB

- Surface-mount base
- Single lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings



Technical data



Material

Housing: aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

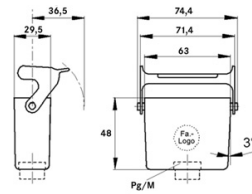
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-A housing: surface-mount base (cover, 1 cable entry, single lever)				
70455200	H-A 10 SDR-LB 16		16	5
70455400	H-A 10 SDR-LB 21		21	5
79455200	H-A 10 SDR-LB M20	20		5
79455400	H-A 10 SDR-LB M25	25		5
H-A housing: surface-mount base (cover, 2 cable entries, single lever)				
70456200	H-A 10 SDRL-LB 16		16	5
70456400	H-A 10 SDRL-LB 21		21	5
79456200	H-A 10 SDRL-LB M20	20		5
79456400	H-A 10 SDRL-LB M25	25		5

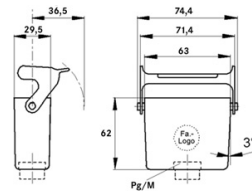
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



EPIC® H-A 10 TBF-LB



EPIC® H-A 10 TBFH-LB

Benefits

- Small and space-saving for narrow available space

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 10 TBF-LB

- Cable coupler hood, low version
- Single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-A 10 TBFH-LB

- Cable coupler hood, high version
- Single lever
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

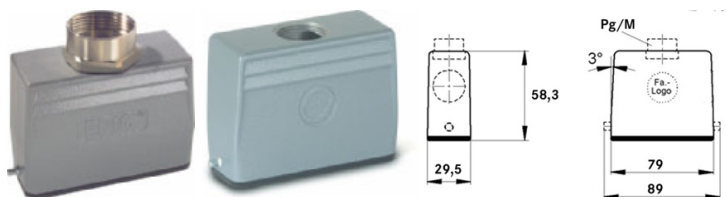
Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: cable coupler hood (straight cable entry, single lever)					
10439000	H-A 10 TBF-LB 13,5		13.5	yes	5
70450000	H-A 10 TBF-LB 16		16	yes	5
19439000	H-A 10 TBF-LB M20	20			5
79450000	H-A 10 TBF-LB M25	25			5
H-A housing: cable coupler hood (straight cable entry, single lever, high version)					
70450400	H-A 10 TBFH-LB 21		21	yes	5
79450400	H-A 10 TBFH-LB M25	25			5

Photographs are not to scale and do not represent detailed images of the respective products.

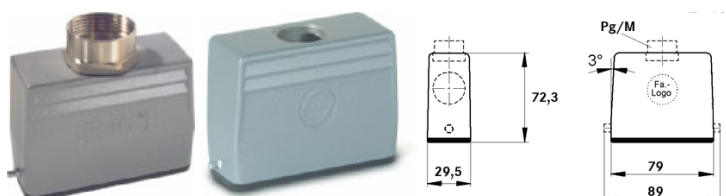
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-A 16 TG



EPIC® H-A 16 TGH



Benefits

- Small and compact, for applications with high number of contacts

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 16 TG

- Hood, low version
- Bolts for single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-A 16 TGH

- Hood, high version
- Bolts for single lever
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

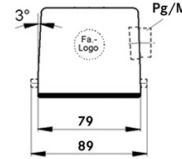
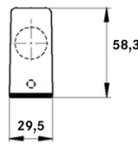
Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: hood (straight cable entry, bolts for single lever)					
10565000	H-A 16 TG 16		16	yes	5
10565300	H-A 16 TG 21		21	yes	5
19565000	H-A 16 TG M20	20			5
19565300	H-A 16 TG M25	25			5
H-A housing: hood (straight cable entry, bolts for single lever, high version)					
70490200	H-A 16 TGH 16		16	yes	5
70490400	H-A 16 TGH 21		21	yes	5
79490200	H-A 16 TGH M20	20			5
79490400	H-A 16 TGH M25	25			5

Photographs are not to scale and do not represent detailed images of the respective products.

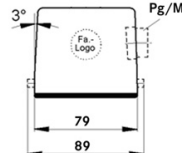
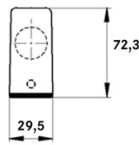
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX



EPIC® H-A 16 TS



EPIC® H-A 16 TSH

Benefits

- Small and compact, for applications with high number of contacts

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 16 TS

- Hood, low version
- Bolts for single lever
- Side cable entry
- Versions with neck

EPIC® H-A 16 TSH

- Hood, high version
- Bolts for single lever
- Side cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

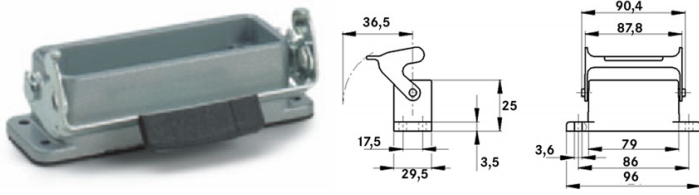
Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: hood (side cable entry, bolts for single lever)					
10564000	H-A 16 TS 16		16	yes	5
10564500	H-A 16 TS 21		21	yes	5
19564000	H-A 16 TS M20	20		yes	5
19564500	H-A 16 TS M25	25		yes	5
H-A housing: hood (side cable entry, bolts for single lever, high version)					
70492200	H-A 16 TSH 16		16	yes	5
70492400	H-A 16 TSH 21		21	yes	5
79492200	H-A 16 TSH M20	20			5
79492400	H-A 16 TSH M25	25			5

Photographs are not to scale and do not represent detailed images of the respective products.

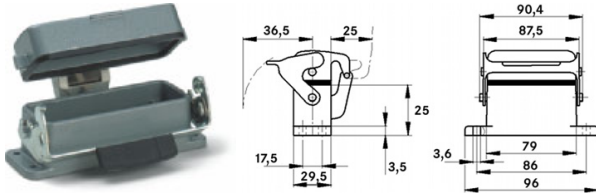
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-A 16 AG-LB



EPIC® H-A 16 AD-LB



Benefits

- Small and compact, for applications with high number of contacts

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 16 AG-LB

- Panel-mount base
- Single lever
- Included: flat gasket

EPIC® H-A 16 AD-LB

- Panel-mount base
- Single lever
- Metal cover
- Included: flat gasket

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

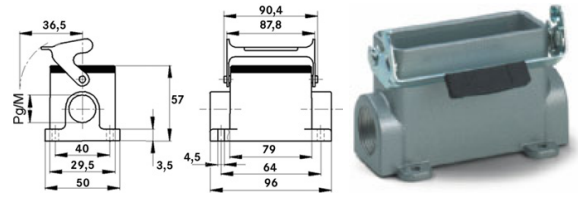
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	Pieces / PU
H-A housing: panel-mount base (single lever)		
10462000	H-A 16 AG-LB	5
H-A housing: panel-mount base (cover, single lever)		
70474000	H-A 16 AD-LB	5

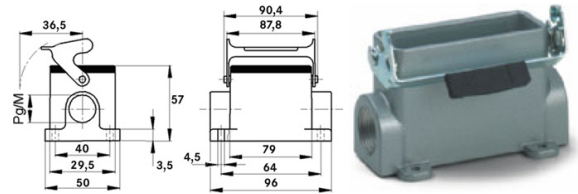
Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® H-A 16 SGR-LB



EPIC® H-A 16 SGRL-LB



Benefits

- Small and compact, for applications with high number of contacts

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 16 SGR-LB

- Surface-mount base
- Single lever
- 1 cable entry

EPIC® H-A 16 SGRL-LB

- Surface-mount base
- Single lever
- 2 cable entries

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

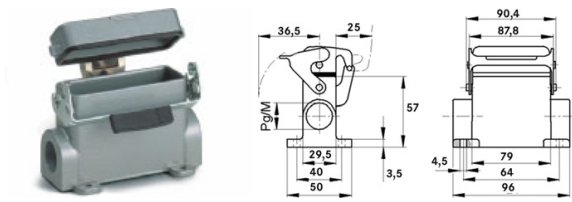
Article number	Article	M	PG	Pieces / PU
H-A housing: surface-mount base (1 cable entry, single lever)				
10567100	H-A 16 SGR-LB 16		16	5
10567000	H-A 16 SGR-LB 21		21	5
19567100	H-A 16 SGR-LB M20	20		5
19567000	H-A 16 SGR-LB M25	25		5
H-A housing: surface-mount base (2 cable entries, single lever)				
10568100	H-A 16 SGRL-LB 16		16	5
10568000	H-A 16 SGRL-LB 21		21	5
19568100	H-A 16 SGRL-LB M20	20		5
19568000	H-A 16 SGRL-LB M25	25		5

Photographs are not to scale and do not represent detailed images of the respective products.

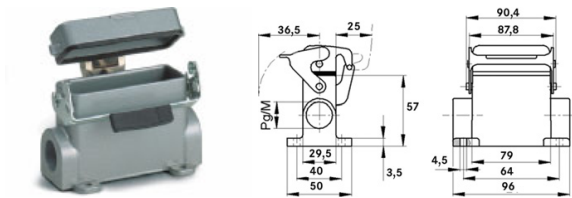
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-A 16 SDR-LB



EPIC® H-A 16 SDRL-LB



Benefits

- Small and compact, for applications with high number of contacts

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 16 SDR-LB

- Surface-mount base
- Single lever
- 1 cable entry
- Metal cover

EPIC® H-A 16 SDRL-LB

- Surface-mount base
- Single lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

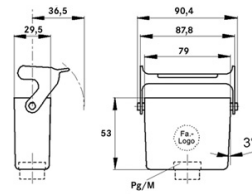
Article number	Article	M	PG	Pieces / PU
H-A housing: surface-mount base (cover, 1 cable entry, single lever)				
70485200	H-A 16 SDR-LB 16		16	5
70485400	H-A 16 SDR-LB 21		21	5
79485200	H-A 16 SDR-LB M20	20		5
79485400	H-A 16 SDR-LB M25	25		5
H-A housing: surface-mount base (cover, 2 cable entries, single lever)				
70486200	H-A 16 SDRL-LB 16		16	5
70486400	H-A 16 SDRL-LB 21		21	5
79486400	H-A 16 SDRL-LB M25	25		5

Photographs are not to scale and do not represent detailed images of the respective products.

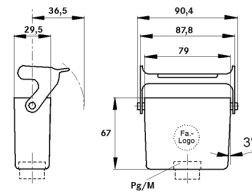
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX



EPIC® H-A 16 TBF-LB



EPIC® H-A 16 TBFH-LB

Benefits

- Small and compact, for applications with high number of contacts

Application range

- Machine and equipment manufacturing
- Control engineering
- Electronic laboratory

Product features

EPIC® H-A 16 TBF-LB

- Cable coupler hood, low version
- Single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-A 16 TBFH-LB

- Cable coupler hood, high version
- Single lever
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: cable coupler hood (straight cable entry, single lever)					
10563000	H-A 16 TBF-LB 16		16	yes	5
19563000	H-A 16 TBF-LB M20	20			5
19563200	H-A 16 TBF-LB M25	25			5
H-A housing: cable coupler hood (straight cable entry, single lever, high version)					
70480200	H-A 16 TBFH-LB 16		16	yes	5
70480400	H-A 16 TBFH-LB 21		21	yes	5
79480200	H-A 16 TBFH-LB M20	20			5
79480400	H-A 16 TBFH-LB M25	25			5

Photographs are not to scale and do not represent detailed images of the respective products.

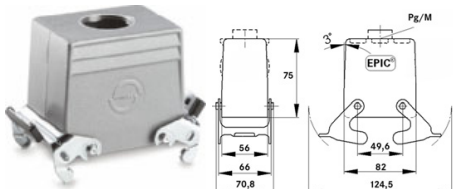
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-A 32 TG



EPIC® H-A 32 TGB



Benefits

- For two inserts of the small H-A, H-D and STA series. Space-saving

Application range

- Machine and equipment manufacturing
- Control engineering

Product features

EPIC® H-A 32 TG

- Hood
- Bolts for double lever
- Straight cable entry
- Versions with / without neck

EPIC® H-A 32 TGB

- Hood
- Dual levers
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

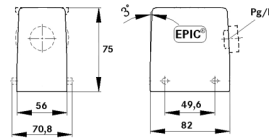
Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: hood (straight cable entry, bolts for double lever)					
10582000	H-A 32 TG 21		21	yes	5
10582001	H-A 32 TG 21		21		5
10583000	H-A 32 TG 29		29	yes	5
19582000	H-A 32 TG M25	25			5
19583000	H-A 32 TG M32	32			5
79520600	H-A 32 TG M40	40			5
H-A housing: hood (straight cable entry, double lever)					
10585000	H-A 32 TGB 29		29	yes	5
19585000	H-A 32 TGB M32	32			5
79525800	H-A 32 TGB M40	40			5

Photographs are not to scale and do not represent detailed images of the respective products.

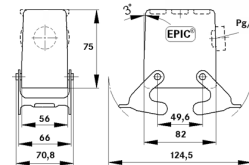
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-A 32 TS



EPIC® H-A 32 TSB



Benefits

- For two inserts of the small H-A, H-D and STA series. Space-saving

Application range

- Machine and equipment manufacturing
- Control engineering

Product features

EPIC® H-A 32 TS

- Hood
- Bolts for double lever
- Side cable entry
- Versions with / without neck

EPIC® H-A 32 TSB

- Hood
- Dual levers
- Side cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

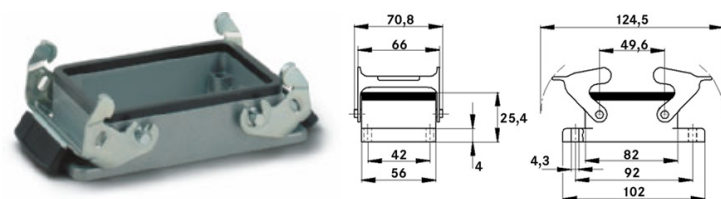
Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: hood (side cable entry, bolts for double lever)					
10576000	H-A 32 TS 29		21	yes	5
10576200	H-A 32 TS 29		21		5
10577000	H-A 32 TS 29		29	yes	5
19576000	H-A 32 TS M25	25			5
19577000	H-A 32 TS M32	32			5
19577500	H-A 32 TS M40	40			5
H-A housing: hood (side cable entry, double lever)					
10578000	H-A 32 TSB 21		21	yes	5
10579000	H-A 32 TSB 29		29	yes	5
19578000	H-A 32 TSB M25	25			5
19579000	H-A 32 TSB M32	32			5

Photographs are not to scale and do not represent detailed images of the respective products.

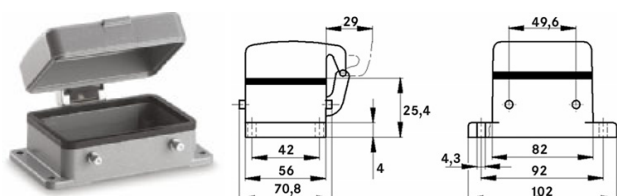
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-A 32 AG



EPIC® H-A 32 AD-BO



Benefits

- For two inserts of the small H-A, H-D and STA series. Space-saving

Application range

- Machine and equipment manufacturing
- Control engineering

Product features

EPIC® H-A 32 AG

- Panel-mount base
- Dual levers
- Included: flat gasket

EPIC® H-A 32 AD-BO

- Panel-mount base
- Bolts for double lever
- Metal cover
- Included: flat gasket

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

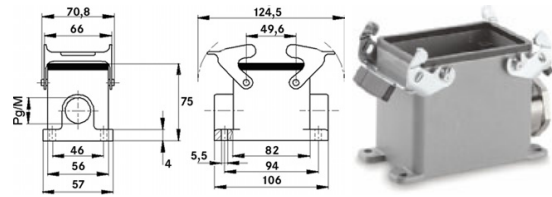
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	Pieces / PU
H-A housing: panel-mount base (double lever)		
10472000	H-A 32 AG	5
H-A housing: panel-mount base (cover, bolts for double lever)		
70503000	H-A 32 AD-BO	5

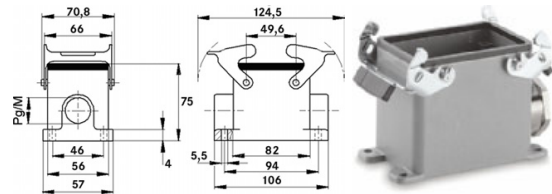
Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® H-A 32 SGR



EPIC® H-A 32 SGRL



Benefits

EPIC® H-A 32 SGR

- For two inserts of the small H-A, H-D and STA series. Space-saving

Application range

EPIC® H-A 32 SGR

- Machine and equipment manufacturing
- Control engineering

Product features

EPIC® H-A 32 SGR

- Surface-mount base
- Dual levers
- 1 cable entry

EPIC® H-A 32 SGRL

- Surface-mount base
- Dual levers
- 2 cable entries

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

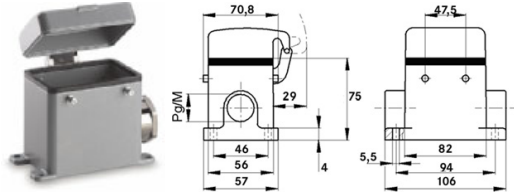
Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: surface-mount base (1 cable entry, double lever)					
10474000	H-A 32 SGR 21		21	yes	5
10474100	H-A 32 SGR 29		29	yes	5
19474000	H-A 32 SGR M25	25		yes	5
19474100	H-A 32 SGR M32	32		yes	5
H-A housing: surface-mount base (2 cable entries, double lever)					
10482000	H-A 32 SGRL 21		21	yes	5
19482000	H-A 32 SGRL M25	25		yes	5
79506800	H-A 32 SGRL M40	40			5

Photographs are not to scale and do not represent detailed images of the respective products.

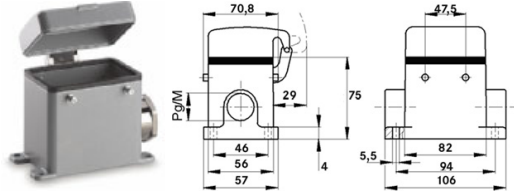
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-A 32 SDR-BO



EPIC® H-A 32 SDRL-BO



Benefits

- For two inserts of the small H-A, H-D and STA series. Space-saving

Application range

- Machine and equipment manufacturing
- Control engineering

Product features

EPIC® H-A 32 SDR-BO

- Surface-mount base

- Bolts for double lever
- 1 cable entry
- Metal cover

EPIC® H-A 32 SDRL-BO

- Surface-mount base
- Bolts for double lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

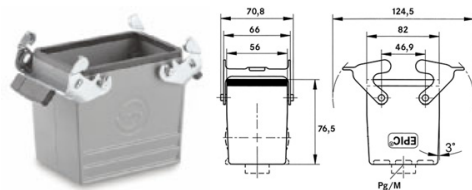
Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: surface-mount base (cover, 1 cable entry, bolts for double lever)					
70515200	H-A 32 SDR-BO 21		21	yes	5
70515400	H-A 32 SDR-BO 29		29	yes	5
79515200	H-A 32 SDR-BO M25			yes	5
79515400	H-A 32 SDR-BO M32			yes	5
H-A housing: surface-mount base (cover, 2 cable entries, bolts for double lever)					
70516200	H-A 32 SDRL-BO 21		21	yes	5
70516400	H-A 32 SDRL-BO 29		29	yes	5
79516200	H-A 32 SDRL-BO M25	25		yes	5
79516400	H-A 32 SDRL-BO M32	32		yes	5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-A 32 TBF



Benefits

- For two inserts of the small H-A, H-D and STA series. Space-saving

Application range

- Machine and equipment manufacturing
- Control engineering

Product features

- Cable coupler hood
- Dual levers
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: cable coupler hood (straight cable entry, double lever)					
10588000	H-A 32 TBF 21		21	yes	5
10588500	H-A 32 TBF 29		29	yes	5
19588000	H-A 32 TBF M25	25			5
19588500	H-A 32 TBF M32	32			5

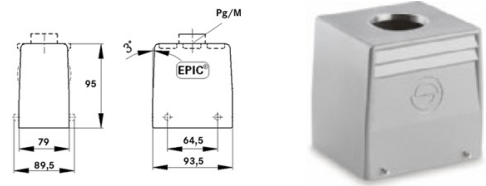
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

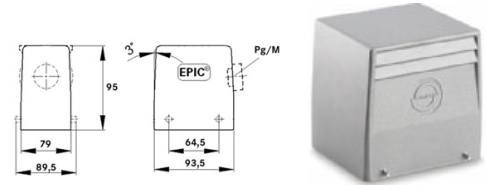
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



EPIC® H-A 48 TG



EPIC® H-A 48 TS



Benefits

- Three different inserts, each suitable for housing type H-A 16, can be integrated in this housing. High flexibility

Application range

- Machine and equipment manufacturing
- Control engineering

Product features

EPIC® H-A 48 TG

- Hood
- Bolts for double lever
- Straight cable entry
- Versions with / without neck

EPIC® H-A 48 TS

- Hood
- Bolts for double lever
- Side cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

Material
 Housing: powder-coated aluminium alloy, grey
 Lever: zinc-plated steel
 Sealing: NBR

IP
Protection rating
 IP 65 (latched)

Temperature range
 -40 °C to +100 °C, short-term up to +125 °C

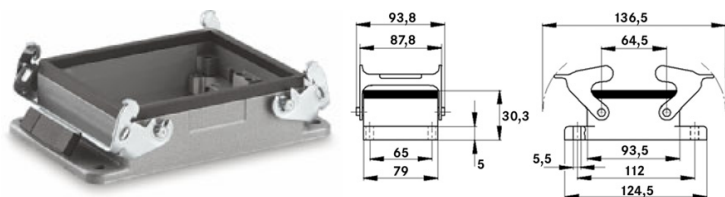
Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: hood (straight cable entry, bolts for double lever)					
10631800	H-A 48 TG 29		29	yes	1
10631900	H-A 48 TG 29		29		1
19631800	H-A 48 TG M32	32			1
19636600	H-A 48 TG M40	40			1
H-A housing: hood (side cable entry, bolts for double lever)					
10630800	H-A 48 TS 29		29	yes	1
10630900	H-A 48 TS 29		29		1
19630800	H-A 48 TS M32	32			1
19635600	H-A 48 TS M40	40			1

Photographs are not to scale and do not represent detailed images of the respective products.

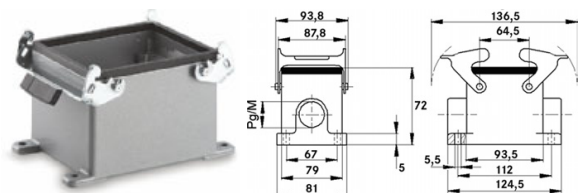
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

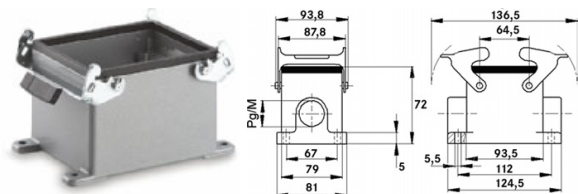
EPIC® H-A 48 AG



EPIC® H-A 48 SGR



EPIC® H-A 48 SGRL



Benefits

- Three different inserts, each suitable for housing type H-A 16, can be integrated in this housing. High flexibility

Application range

- Machine and equipment manufacturing
- Control engineering

Product features

EPIC® H-A 48 AG

- Panel-mount base
- Dual levers
- Included: flat gasket

EPIC® H-A 48 SGR

- Surface-mount base
- Dual levers
- 1 cable entry

EPIC® H-A 48 SGRL

- Surface-mount base
- Dual levers
- 2 cable entries

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-A housing: panel-mount base (double lever)					
10625500	H-A 48 AG				1
H-A housing: surface-mount base (1 cable entry, double lever)					
10633800	H-A 48 SGR 29		29	yes	1
19633800	H-A 48 SGR M32	32		yes	1
19638600	H-A 48 SGR M40	40			1
H-A housing: surface-mount base (2 cable entries, double lever)					
19639600	H-A 48 SGRL M40	40			1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

EPIC® H-A 48 SGR

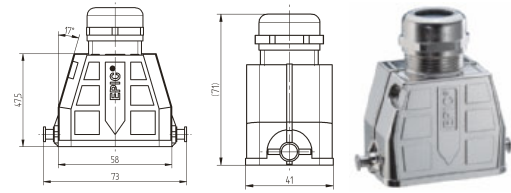
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-A 48 SGRL

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

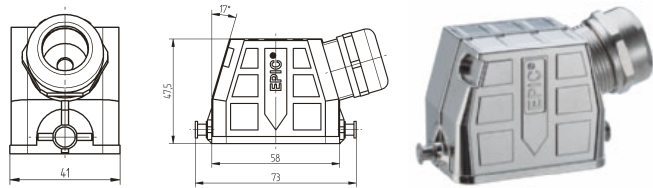
New

EPIC® ULTRA H-B 6 TG LB



New

EPIC® ULTRA H-B 6 TS LB



Info

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland



Info

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland

Benefits

- Optimum, low-resistance 360° screening
- All-purpose due to high corrosion resistance and high environmental protection.
- Space-saving due to compact dimensions
- Faster than any other comparable system
- High mechanical resistance

Application range

- In EMC-sensitive environments
- For fixed and flexible applications (e.g. machinery building, wind turbines)
- Construction machinery
- Electric motor manufacturing

Product features

- The hoods and surface-mount base are supplied with integrated SKINTOP® cable gland
- Housings with the BRUSH addition come with BRUSH cable screen contacting
- Pluggable with standard housings
- Corrosion-resistant according to DIN EN 6988
- Resistance to cyclic salt spray is tested according to IEC 68-2-52, severity level 2

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

Material
 Housing: nickel-plated zinc die-casting
 Lever and bolts: stainless steel
 Sealing: NBR
 Cable gland
 Body: nickel-plated brass
 Insert: PA
 Seal: special elastomer

IP Protection rating
 IP 65

Temperature range
 -40°C to +100°C

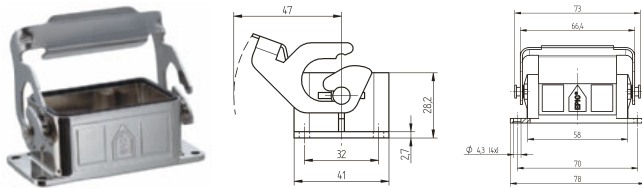
Article number	Article	Cable clamping range (mm)	Minimum Ø above braiding (mm)	Pieces / PU
H-B housing: hood (straight cable entry, bolts for single lever)				
70250200	ULTRA H-B 6 TG LB 6-13	6 - 13		1
70250201	ULTRA H-B 6 TG LB 9-17	9 - 17		1
70250202	ULTRA H-B 6 TG LB 9-17 BRUSH	9 - 17	6	1
H-B housing: hood (side cable entry, bolts for single lever)				
70250203	ULTRA H-B 6 TS LB 6-13	6 - 13		1
70250204	ULTRA H-B 6 TS LB 9-17	9 - 17		1
70250205	ULTRA H-B 6 TS LB 9-17 BRUSH	9 - 17	6	1

Accessories

- FLEXIMARK® ULTRA L 12X8,5 refer to page 878

New

EPIC® ULTRA H-B 6 AG LB

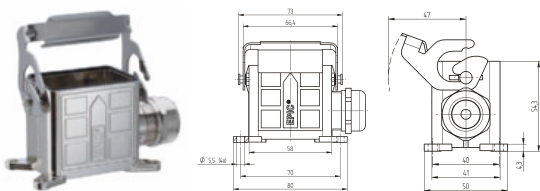


Info

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland

New

EPIC® ULTRA H-B 6 SGR LB



Info

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland

Benefits

- Optimum, low-resistance 360° screening
- All-purpose due to high corrosion resistance and high environmental protection.
- Space-saving due to compact dimensions
- Faster than any other comparable system
- High mechanical resistance

Application range

- In EMC-sensitive environments
- For fixed and flexible applications (e.g. machinery building, wind turbines)
- Construction machinery
- Electric motor manufacturing

Product features

- The hoods and surface-mount base are supplied with integrated SKINTOP® cable gland
- Housings with the BRUSH addition come with BRUSH cable screen contacting
- Pluggable with standard housings
- Corrosion-resistant according to DIN EN 6988
- Resistance to cyclic salt spray is tested according to IEC 68-2-52, severity level 2

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

Material
 Housing: nickel-plated zinc die-casting
 Lever and bolts: stainless steel
 Sealing: NBR
 Cable gland
 Body: nickel-plated brass
 Insert: PA
 Seal: special elastomer

IP Protection rating
 IP 65

Temperature range
 -40°C to +100°C

Article number	Article	Cable clamping range (mm)	Minimum Ø above braiding (mm)	Pieces / PU
H-B housing: panel-mount base (single lever)				
70250206	ULTRA H-B 6 AG LB			1
H-B housing: surface-mount base (1 cable entry, single lever)				
70250207	ULTRA H-B 6 SGR LB 6-13	6 - 13		1
70250208	ULTRA H-B 6 SGR LB 9-17	9 - 17		1
70250209	ULTRA H-B 6 SGR LB 9-17 BRUSH	9 - 17	6	1

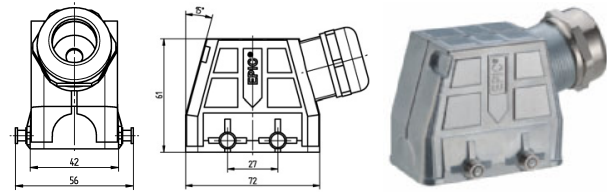
Accessories

- FLEXIMARK® ULTRA L 12X8,5 refer to page 878

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

EPIC® ULTRA H-B 10 TS QB



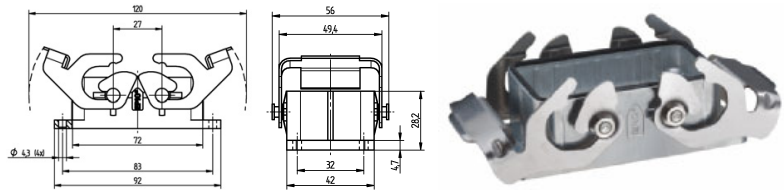
RoHS ✓

Info

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland

New

EPIC® ULTRA H-B 10 AG QB



RoHS ✓

Info

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland

Benefits

- Optimum, low-resistance 360° screening
- All-purpose due to high corrosion resistance and high environmental protection.
- Space-saving due to compact dimensions
- Faster than any other comparable system
- High mechanical resistance

Application range

- In EMC-sensitive environments
- For fixed and flexible applications (e.g. machinery building, wind turbines)
- Construction machinery
- Electric motor manufacturing

Product features

- The hoods and surface-mount base are supplied with integrated SKINTOP® cable gland
- Housings with the BRUSH addition come with BRUSH cable screen contacting
- Pluggable with standard housings
- Corrosion-resistant according to DIN EN 6988
- Resistance to cyclic salt spray is tested according to IEC 68-2-52, severity level 2

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

Material
 Housing: nickel-plated zinc die-casting
 Lever and bolts: stainless steel
 Sealing: NBR
 Cable gland
 Body: nickel-plated brass
 Insert: PA
 Seal: special elastomer

IP
 Protection rating
 IP 65

Temperature range
 -40°C to +100°C

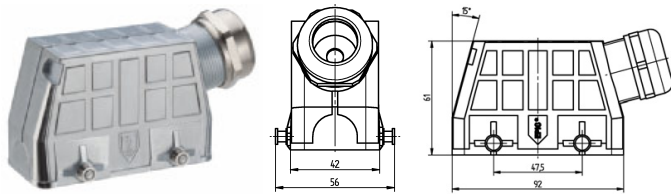
Article number	Article	Cable clamping range (mm)	Minimum Ø above braiding (mm)	Pieces / PU
H-B housing: hood (side cable entry, bolts for double lever)				
70250210	ULTRA H-B 10 TS QB 7-15	7 - 15		1
70250211	ULTRA H-B 10 TS QB 11-21	11 - 21		1
70250212	ULTRA H-B 10 TS QB 11-21 BRUSH	11 - 21	8	1
H-B housing: panel-mount base (double lever)				
70250213	ULTRA H-B 10 AG QB			1

Accessories

- FLEXIMARK® ULTRA L 12X8,5 refer to page 878

New

EPIC® ULTRA H-B 16 TS QB

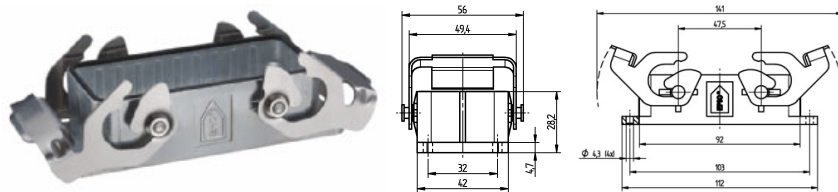


Info

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland

New

EPIC® ULTRA H-B 16 AG QB



Info

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland

Benefits

- Optimum, low-resistance 360° screening
- All-purpose due to high corrosion resistance and high environmental protection.
- Space-saving due to compact dimensions
- Faster than any other comparable system
- High mechanical resistance

Application range

- Construction machinery
- In EMC-sensitive environments
- For fixed and flexible applications (e.g. machinery building, wind turbines)
- Electric motor manufacturing

Product features

- The hoods and surface-mount base are supplied with integrated SKINTOP® cable gland
- Housings with the BRUSH addition come with BRUSH cable screen contacting
- Pluggable with standard housings
- Corrosion-resistant according to DIN EN 6988
- Resistance to cyclic salt spray is tested according to IEC 68-2-52, severity level 2

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

Material
 Housing: nickel-plated zinc die-casting
 Lever and bolts: stainless steel
 Sealing: NBR
 Cable gland
 Body: nickel-plated brass
 Insert: PA
 Seal: special elastomer

IP Protection rating
 IP 65

Temperature range
 -40°C to +100°C

Article number	Article	Cable clamping range (mm)	Minimum Ø above braiding (mm)	Pieces / PU
H-B housing: hood (side cable entry, bolts for double lever)				
70250214	ULTRA H-B 16 TS QB 7-15	7 - 15		1
70250215	ULTRA H-B 16 TS QB 11-21	11 - 21		1
70250216	ULTRA H-B 16 TS QB 11-21 BRUSH	11 - 21	8	1
H-B housing: panel-mount base (double lever)				
70250217	ULTRA H-B 16 AG QB			1

Accessories

- EPIC® ULTRA H-B 16 AG QB
- FLEXIMARK® ULTRA L 12X8,5 refer to page 878

New

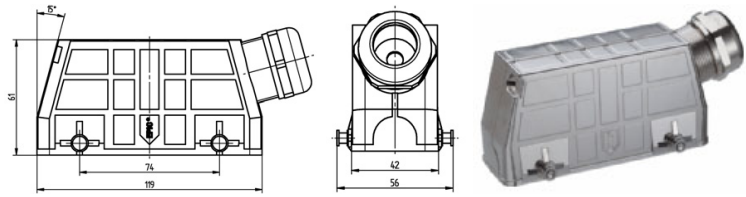
EPIC® ULTRA H-B 24 TS QB

RoHS



Info

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland



New

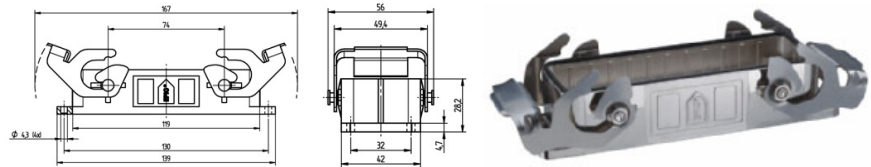
EPIC® ULTRA H-B 24 AG QB

RoHS



Info

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland



Benefits

- Optimum, low-resistance 360° screening
- All-purpose due to high corrosion resistance and high environmental protection.
- Space-saving due to compact dimensions
- Faster than any other comparable system
- High mechanical resistance

Application range

- In EMC-sensitive environments
- For fixed and flexible applications (e.g. machinery building, wind turbines)
- Construction machinery
- Electric motor manufacturing

Product features

- The hoods and surface-mount base are supplied with integrated SKINTOP® cable gland
- Housings with the BRUSH addition come with BRUSH cable screen contacting
- Pluggable with standard housings
- Corrosion-resistant according to DIN EN 6988
- Resistance to cyclic salt spray is tested according to IEC 68-2-52, severity level 2

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

Material
 Housing: nickel-plated zinc die-casting
 Lever and bolts: stainless steel
 Sealing: NBR
 Cable gland
 Body: nickel-plated brass
 Insert: PA
 Seal: special elastomer

IP Protection rating
 IP 65

Temperature range
 -40 °C to +100 °C

Article number	Article	Cable clamping range (mm)	Minimum Ø above braiding (mm)	Pieces / PU
H-B housing: hood (side cable entry, bolts for double lever)				
70250219	ULTRA H-B 24 TS QB 7-15	7 - 15		1
70250220	ULTRA H-B 24 TS QB 11-21	11 - 21		1
70250221	ULTRA H-B 24 TS QB 11-21 BRUSH	11 - 21	8	1
H-B housing: panel-mount base (double lever)				
70250222	ULTRA H-B 24 AG QB			1

Accessories

- FLEXIMARK® ULTRA L 12X8,5 refer to page 878

ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

SILVYN®

FLEXIMARK®

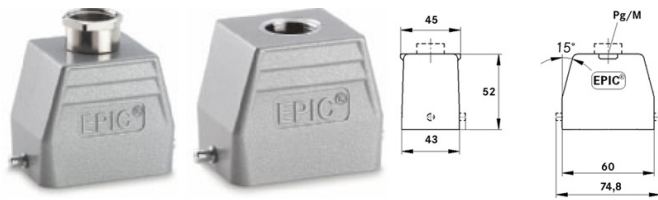
ACCESSORIES

APPENDIX

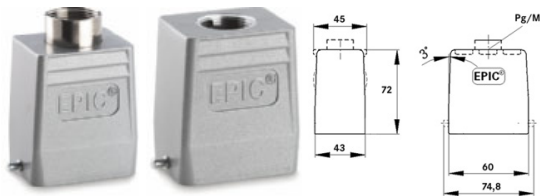
Rectangular connectors

EPIC® H-B 6 Housings

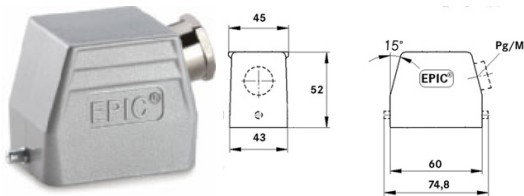
EPIC® H-B 6 TG



EPIC® H-B 6 TGH



EPIC® H-B 6 TS



Benefits

- The smallest housing out of the H-B series. For inserts with high electrical properties

Application range

- Plant engineering
- Control engineering
- Plastics industry

Product features

- EPIC® H-B 6 TG**
- Hood, low version
 - Bolts for single lever
 - Straight cable entry
 - Versions with / without neck

EPIC® H-B 6 TGH

- Hood, high version
- Bolts for single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 6 TS

- Hood, low version
- Bolts for single lever
- Side cable entry
- Versions with neck

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

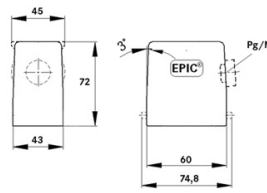
Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (straight cable entry, bolts for single lever)					
10011000	H-B 6 TG 13,5		13.5	yes	10
10021000	H-B 6 TG 16		16	yes	10
19011000	H-B 6 TG M20	20			10
19021000	H-B 6 TG M25	25			10
H-B housing: hood (straight cable entry, bolts for single lever, high version)					
70020200	H-B 6 TGH 21		21	yes	10
70020400	H-B 6 TGH 29		29	yes	10
79020200	H-B 6 TGH M25	25			10
79020400	H-B 6 TGH M32	32			10
H-B housing: hood (side cable entry, bolts for single lever)					
10012000	H-B 6 TS 13,5		13.5	yes	10
10022000	H-B 6 TS 16		16	yes	10
19012000	H-B 6 TS M20	20		yes	10
19022000	H-B 6 TS M25	25		yes	10

Photographs are not to scale and do not represent detailed images of the respective products.

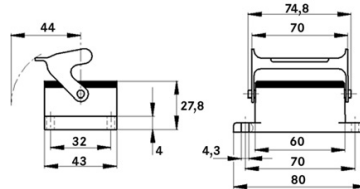
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

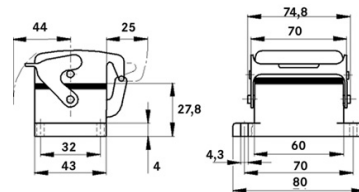
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



EPIC® H-B 6 TSH



EPIC® H-B 6 AG-LB



EPIC® H-B 6 AD-LB



Benefits

- The smallest housing out of the H-B series. For inserts with high electrical properties

Application range

- Plant engineering
- Control engineering
- Plastics industry

Product features

EPIC® H-B 6 TSH

- Hood, high version
- Bolts for single lever
- Side cable entry
- Versions with / without neck

EPIC® H-B 6 AG-LB

- Panel-mount base
- Single lever
- Included: flat gasket

EPIC® H-B 6 AD-LB

- Panel-mount base
- Single lever
- Metal cover
- Included: flat gasket

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (side cable entry, bolts for single lever, high version)					
70022200	H-B 6 TSH 21		21	yes	10
70022400	H-B 6 TSH 29		29	yes	10
79022200	H-B 6 TSH M25	25			10
79022400	H-B 6 TSH M32	32			10
H-B housing: panel-mount base (single lever)					
10003000	H-B 6 AG-LB				10
H-B housing: panel-mount base (cover, single lever)					
10004000	H-B 6 AD-LB				10

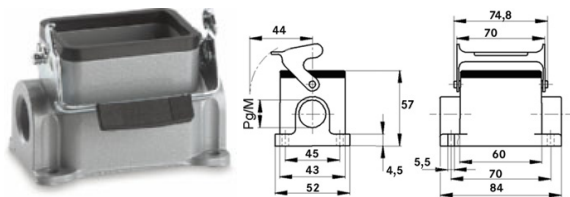
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

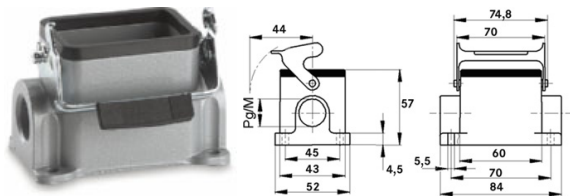
EPIC® H-B 6 TSH

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

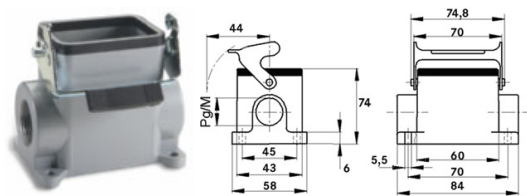
EPIC® H-B 6 SGR-LB



EPIC® H-B 6 SGRL-LB



EPIC® H-B 6 SGRH-LB



Benefits

- The smallest housing out of the H-B series. For inserts with high electrical properties

Application range

- Plant engineering
- Control engineering
- Plastics industry

Product features

EPIC® H-B 6 SGR-LB

- Surface-mount base, low version
- Single lever
- 1 cable entry

EPIC® H-B 6 SGRL-LB

- Surface-mount base, low version
- Single lever
- 2 cable entries

EPIC® H-B 6 SGRH-LB

- Surface-mount base, high version
- Single lever
- 1 cable entry

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (1 cable entry, single lever)				
10005000	H-B 6 SGR 16		16	10
19005000	H-B 6 SGR M20	20		10
79005600	H-B 6 SGR M25	25		10
H-B housing: surface-mount base (2 cable entries, single lever)				
10006000	H-B 6 SGRL 16		16	10
19006000	H-B 6 SGRL M20	20		10
79006600	H-B 6 SGRL M25	25		10
H-B housing: surface-mount base (1 cable entry, single lever, high version)				
70005200	H-B 6 SGRH-LB 21		21	10
70005400	H-B 6 SGRH-LB 29		29	10
79005200	H-B 6 SGRH-LB M25	25		10
79005400	H-B 6 SGRH-LB M32	32		10

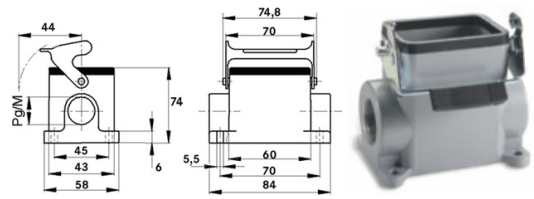
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

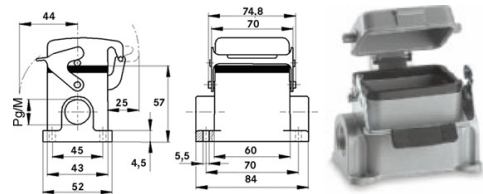
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



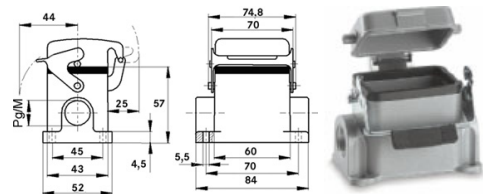
EPIC® H-B 6 SGRLH-LB



EPIC® H-B 6 SDR-LB



EPIC® H-B 6 SDRL-LB



Benefits

- The smallest housing out of the H-B series. For inserts with high electrical properties

Application range

- Plant engineering
- Control engineering
- Plastics industry

Product features

EPIC® H-B 6 SGRLH-LB

- Surface-mount base, high version
- Single lever
- 2 cable entries

EPIC® H-B 6 SDR-LB

- Surface-mount base, low version
- Single lever
- 1 cable entry
- Metal cover

EPIC® H-B 6 SDRL-LB

- Surface-mount base, low version
- Single lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

- Material**
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR
- Protection rating**
IP 65 (latched)
- Temperature range**
-40 °C to +100 °C, short-term up to +125 °C

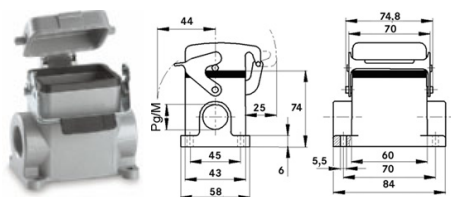
Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (2 cable entries, single lever, high version)				
70006200	H-B 6 SGRLH 21		21	10
79006200	H-B 6 SGRLH M25	25		10
79006400	H-B 6 SGRLH M32	32		10
H-B housing: surface-mount base (cover, 1 cable entry, single lever)				
10007000	H-B 6 SDR 16		16	10
19007000	H-B 6 SDR M20	20		10
79015600	H-B 6 SDR M25	25		10
H-B housing: surface-mount base (cover, 2 cable entries, single lever)				
10009000	H-B 6 SDRL-LB 16		16	10
19009000	H-B 6 SDRL-LB M20	20		10
79016600	H-B 6 SDRL-LB M25	25		10

Photographs are not to scale and do not represent detailed images of the respective products.

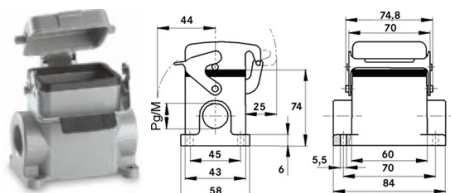
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-B 6 SDRH-LB



EPIC® H-B 6 SDRLH-LB



Benefits

- The smallest housing out of the H-B series. For inserts with high electrical properties

Application range

- Plant engineering
- Control engineering
- Plastics industry

Product features

EPIC® H-B 6 SDRH-LB

- Surface-mount base, high version
- Single lever
- 1 cable entry
- Metal cover

EPIC® H-B 6 SDRLH-LB

- Surface-mount base, high version
- Single lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

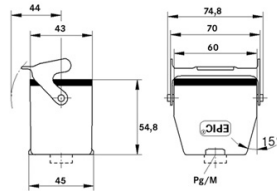
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (cover, 1 cable entry, single lever, high version)				
70015200	H-B 10 SDRH-LB 21		21	10
79015200	H-B 10 SDRH-LB M25	25		10
79015400	H-B 10 SDRH-LB M32	32		10
H-B housing: surface-mount base (cover, 2 cable entries, single lever, high version)				
70016200	H-B 6 SDRLH-LB 21		21	10
79016200	H-B 6 SDRLH-LB M25	25		10
79016400	H-B 6 SDRLH-LB M32	32		10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

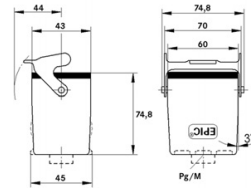
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



EPIC® H-B 6 TBF-LB



EPIC® H-B 6 TBFH-LB



Benefits

- The smallest housing out of the H-B series. For inserts with high electrical properties

Application range

- Plant engineering
- Control engineering
- Plastics industry

Product features

EPIC® H-B 6 TBF-LB

- Cable coupler hood, low version
- Single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 6 TBFH-LB

- Cable coupler hood, high version
- Single lever
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: cable coupler hood (1 straight cable entry, single lever)					
10014000	H-B 6 TBF 13,5		13.5	yes	10
10024000	H-B 6 TBF 16		16	yes	10
19014000	H-B 6 TBF M20	20			10
19024000	H-B 6 TBF M25	25			10
H-B housing: cable coupler hood (1 straight cable entry, single lever, high version)					
70010200	H-B 6 TBFH 21		21	yes	10
70010400	H-B 6 TBFH 29		29	yes	10
79010200	H-B 6 TBFH M25	25			10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

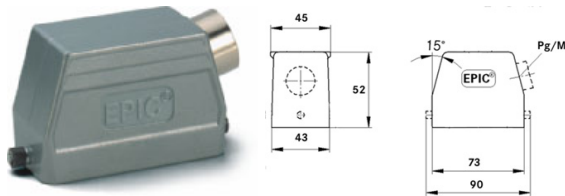
EPIC® H-B 10 TG-RO



EPIC® H-B 10 TGH-RO



EPIC® H-B 10 TS-RO



Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 10 TG-RO

- Hood, low version
- Reels for single lever
- Versions with / without neck

EPIC® H-B 10 TGH-RO

- Hood, high version
- Reels for single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 10 TS-RO

- Hood, low version
- Reels for single lever
- Side cable entry
- Versions with neck

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

Material
EPIC® H-B 10 TG-RO
 Housing: powder-coated aluminium alloy, grey
 Lever: zinc-plated steel
 Sealing: NBR

EPIC® H-B 10 TGH-RO
 Housing: powder-coated aluminium alloy, grey
 Lever: zinc-plated steel
 Sealing: NBR

IP Protection rating
EPIC® H-B 10 TG-RO
 IP 65 (latched)
EPIC® H-B 10 TGH-RO
 IP 65 (latched)

Temperature range
 -40 °C to +100 °C, short-term up to +125 °C

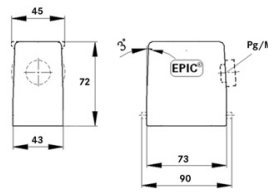
Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (straight cable entry, bolts for single lever)					
10040900	H-B 10 TG-RO 16		16	yes	10
10040700	H-B 10 TG-RO 21		21	yes	10
19040900	H-B 10 TG-RO M20	20			10
19040700	H-B 10 TG-RO M25	25			10
H-B housing: hood (straight cable entry, bolts for single lever, high version)					
7004200	H-B 10 TGH-RO 21		21	yes	10
7004400	H-B 10 TGH-RO 29		29	yes	10
7904200	H-B 10 TGH-RO M25	25			10
7904400	H-B 10 TGH-RO M32	32			10
H-B housing: hood (side cable entry, bolts for single lever)					
10042900	H-B 10 TS-RO 16		16	yes	10
10042800	H-B 10 TS-RO 21		21	yes	10
19042900	H-B 10 TS-RO M20	20		yes	10
19042800	H-B 10 TS-RO M25	25		yes	10

Photographs are not to scale and do not represent detailed images of the respective products.

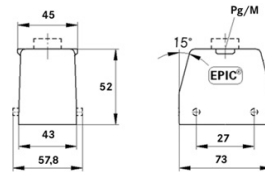
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

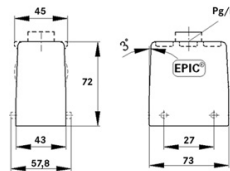
ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX



EPIC® H-B 10 TSH-RO



EPIC® H-B 10 TG



EPIC® H-B 10 TGH

Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 10 TSH-RO

- Hood, high version
- Reels for single lever
- Side cable entry
- Versions with / without neck

EPIC® H-B 10 TG

- Hood, low version
- Bolts for double lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 10 TGH

- Hood, high version
- Bolts for double lever
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

- Material**
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR
- Protection rating**
IP 65 (latched)
- Temperature range**
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (side cable entry, bolts for single lever, high version)					
70054200	H-B 10 TSH-RO 21		21	yes	10
70054400	H-B 10 TSH-RO 29		29	yes	10
79054200	H-B 10 TSH-RO M25	25			10
79054400	H-B 10 TSH-RO M32	32			10
H-B housing: hood (straight cable entry, bolts for double lever)					
10040000	H-B 10 TG 16		16	yes	10
10040100	H-B 10 TG 21		21	yes	10
19040000	H-B 10 TG M20	20			10
19040100	H-B 10 TG M25	25			10
H-B housing: hood (straight cable entry, bolts for double lever, high version)					
70050400	H-B 10 TGH 21		21	yes	10
70050600	H-B 10 TGH 29		29	yes	10
79050400	H-B 10 TGH M25	25			10
79050600	H-B 10 TGH M32	32			10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

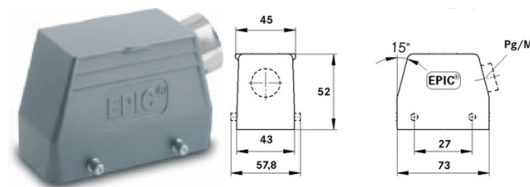
EPIC® H-B 10 TGB



EPIC® H-B 10 TGBH



EPIC® H-B 10 TS



Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 10 TGB

- Hood, low version
- Dual levers
- Straight cable entry
- Versions with / without neck

EPIC® H-B 10 TGBH

- Hood, high version
- Dual levers
- Straight cable entry
- Versions with / without neck

EPIC® H-B 10 TS

- Hood, low version
- Bolts for double lever
- Side cable entry
- Versions with neck

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

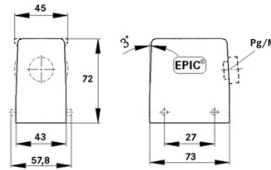
	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (straight cable entry, double lever)					
10041000	H-B 10 TGB 16		16	yes	10
19041000	H-B 10 TGB M20	20			10
79055700	H-B 10 TGB M25	25			10
H-B housing: hood (straight cable entry, double lever, high version)					
70055200	H-B 10 TGBH 21		21	yes	10
70055400	H-B 10 TGBH 29		29	yes	10
79055200	H-B 10 TGBH M25	25			10
79055400	H-B 10 TGBH M32	32			10
H-B housing: hood (side cable entry, bolts for double lever)					
10042000	H-B 10 TS 16		16	yes	10
10042100	H-B 10 TS 21		21	yes	10
19042000	H-B 10 TS M20	20		yes	10
19042100	H-B 10 TS M25	25		yes	10

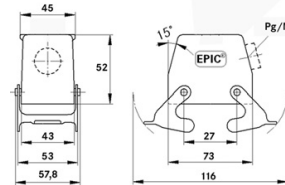
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

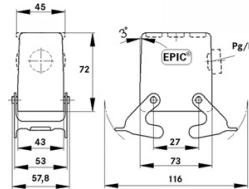
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



EPIC® H-B 10 TSH



EPIC® H-B 10 TSB



EPIC® H-B 10 TSBH

Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 10 TSH

- Hood, high version
- Bolts for double lever
- Side cable entry
- Versions with / without neck

EPIC® H-B 10 TSB

- Hood, low version
- Dual levers
- Side cable entry
- Versions with neck

EPIC® H-B 10 TSBH

- Hood, high version
- Dual levers
- Side cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

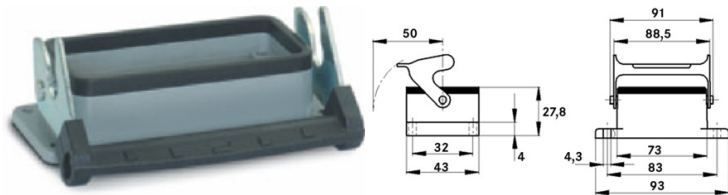
Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (side cable entry, bolts for double lever, high version)					
70052400	H-B 10 TSH 21		21	yes	10
70052600	H-B 10 TSH 29		29	yes	10
79052400	H-B 10 TSH M25	25			10
79052600	H-B 10 TSH M32	32			10
H-B housing: hood (side cable entry, double lever)					
10045000	H-B 10 TSB 16		16	yes	10
19045000	H-B 10 TSB M20	20		yes	10
79057700	H-B 10 TSB M25	25		yes	10
H-B housing: hood (side cable entry, double lever, high version)					
70057200	H-B 10 TSBH 21		21	yes	10
70057400	H-B 10 TSBH 29		29	yes	10
79057200	H-B 10 TSBH M25	25			10

Photographs are not to scale and do not represent detailed images of the respective products.

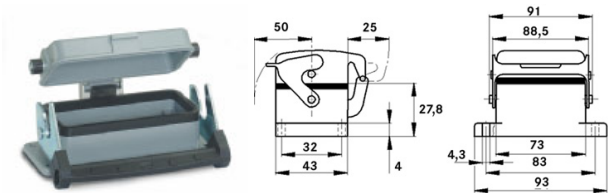
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

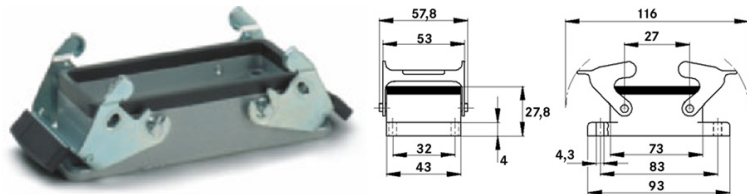
EPIC® H-B 10 AG-LB



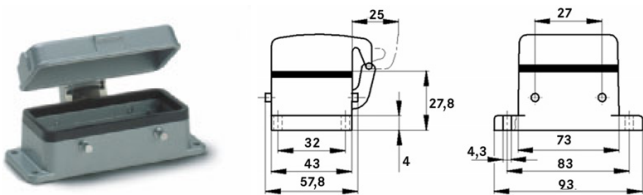
EPIC® H-B 10 AD-LB



EPIC® H-B 10 AG



EPIC® H-B 10 AD-BO



Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 10 AG-LB

- Panel-mount base
- Single lever
- Included: flat gasket

EPIC® H-B 10 AD-LB

- Metal cover
- Panel-mount base
- Single lever
- Included: flat gasket

EPIC® H-B 10 AG

- Panel-mount base
- Dual levers
- Included: flat gasket

EPIC® H-B 10 AD-BO

- Panel-mount base
- Bolts for double lever
- Metal cover
- Included: flat gasket

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	Pieces / PU
H-B housing: panel-mount base (single lever)		
10032900	H-B 10 AG-LB	10
H-B housing: panel-mount base (cover, single lever)		
10033900	H-B 10 AD-LB	10
H-B housing: panel-mount base (double lever)		
10032000	H-B 10 AG	10
H-B housing: panel-mount base (cover, bolts for double lever)		
10033000	H-B 10 AD-BO	10

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX



Info

- Housing for motor termination

Benefits

- Small angle housing for drives and control cabinets with single lever

Application range

- Plant engineering
- Drive systems
- Light & sound technology
- Plastics industry

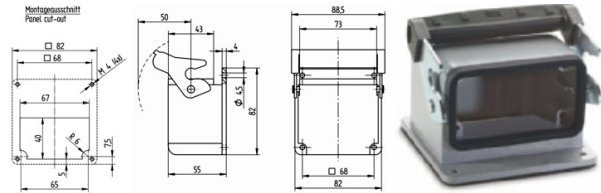
Product features

- Panel-mount base
- Single lever
- Angled version
- Included: flat gasket

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

EPIC® H-B 10 AGS-LB



Technical data

Material
 Housing: powder-coated aluminium alloy, grey
 Lever: zinc-plated steel
 Sealing: NBR

IP Protection rating
 IP 65 (latched)

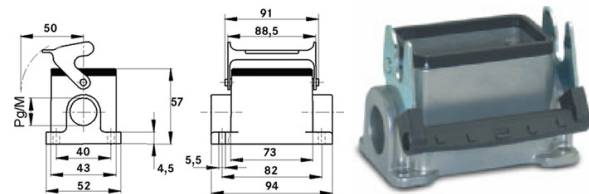
Temperature range
 -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	Pieces / PU
H-B housing: panel-mount base (angled, single lever)		
44423026	H-B 10 AGS-LB	5

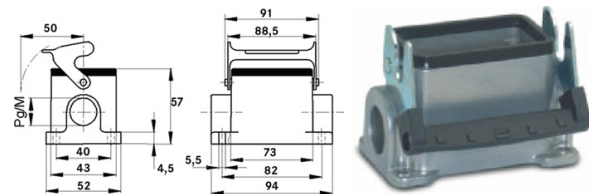
Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® H-B 10 SGR-LB



EPIC® H-B 10 SGRL-LB



Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

- EPIC® H-B 10 SGR-LB**
- Surface-mount base, low version
 - Single lever
 - 1 cable entry

- EPIC® H-B 10 SGRL-LB**
- Surface-mount base, low version
 - Single lever
 - 2 cable entries

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

Material
 Housing: powder-coated aluminium alloy, grey
 Lever: zinc-plated steel
 Sealing: NBR

IP Protection rating
 IP 65 (latched)

Temperature range
 -40 °C to +100 °C, short-term up to +125 °C

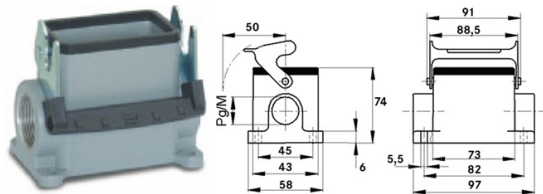
Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (1 cable entry, single lever)				
10034900	H-B 10 SGR-LB 16		16	10
10034700	H-B 10 SGR-LB 21		21	10
19034900	H-B 10 SGR-LB M20	20		10
19034700	H-B 10 SGR-LB M25	25		10
H-B housing: surface-mount base (2 cable entries, single lever)				
10035900	H-B 10 SGRL-LB 16		16	10
19035900	H-B 10 SGRL-LB M20	20		10
79061600	H-B 10 SGRL-LB M25	25		10

Photographs are not to scale and do not represent detailed images of the respective products.

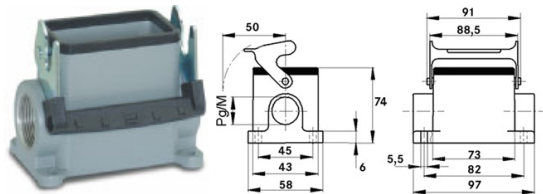
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

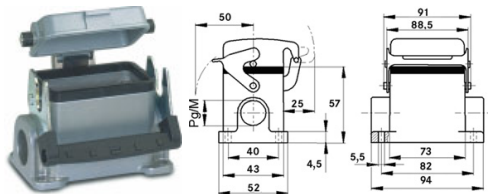
EPIC® H-B 10 SGRH-LB



EPIC® H-B 10 SGRLH-LB



EPIC® H-B 10 SDR-LB



Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 10 SGRH-LB

- Surface-mount base, high version
- Single lever
- 1 cable entry

EPIC® H-B 10 SGRLH-LB

- Surface-mount base, high version
- Single lever
- 2 cable entries

EPIC® H-B 10 SDR-LB

- Surface-mount base, low version
- Single lever
- 1 cable entry
- Metal cover

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (1 cable entry, single lever, high version)				
70060200	H-B 10 SGRH-LB 21		21	10
70060400	H-B 10 SGRH-LB 29		29	10
79060200	H-B 10 SGRH-LB M25	25		10
79060400	H-B 10 SGRH-LB M32	32		10
H-B housing: surface-mount base (2 cable entries, single lever, high version)				
70061200	H-B 10 SGRLH-LB 21		21	10
70061400	H-B 10 SGRLH-LB 29		29	10
79061200	H-B 10 SGRLH-LB M25	25		10
79061400	H-B 10 SGRLH-LB M32	32		10
H-B housing: surface-mount base (cover, 1 cable entry, single lever)				
10036900	H-B 10 SDR-LB 16		16	10
19036900	H-B 10 SDR-LB M20	20		10
79064600	H-B 10 SDR-LB M25	25		10

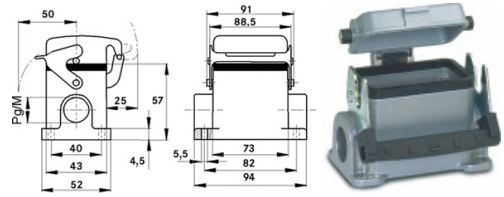
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

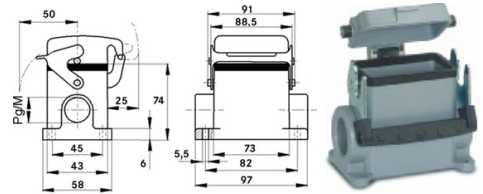
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



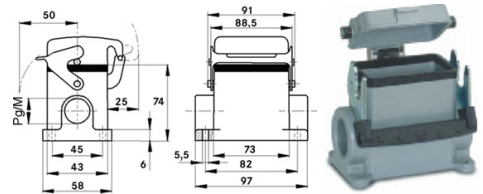
EPIC® H-B 10 SDRL-LB



EPIC® H-B 10 SDRH-LB



EPIC® H-B 10 SDRLH-LB



Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 10 SDRL-LB

- Surface-mount base, low version
- Single lever
- 2 cable entries
- Metal cover

EPIC® H-B 10 SDRH-LB

- Surface-mount base, high version
- Single lever
- 1 cable entry
- Metal cover

EPIC® H-B 10 SDRLH-LB

- Surface-mount base, high version
- Single lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

Material
 Housing: powder-coated aluminium alloy, grey
 Lever: zinc-plated steel
 Sealing: NBR

IP
Protection rating
 IP 65 (latched)

Temperature range
 -40 °C to +100 °C, short-term up to +125 °C

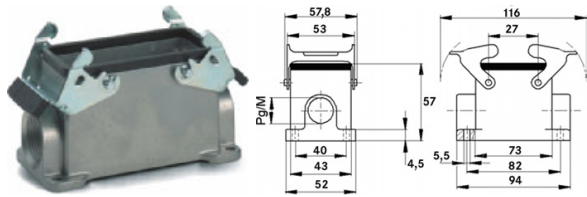
Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (cover, 2 cable entries, single lever)				
10038900	H-B 10 SDRL-LB 16		16	10
19038900	H-B 10 SDRL-LB M20	20		10
79065600	H-B 10 SDRL-LB M25	25		10
H-B housing: surface-mount base (cover, 1 cable entry, single lever, high version)				
70064200	H-B 10 SDRH-LB 21		21	5
70064400	H-B 10 SDRH-LB 29		29	5
79064200	H-B 10 SDRH-LB M25	25		5
79064400	H-B 10 SDRH-LB M32	32		5
H-B housing: surface-mount base (cover, 2 cable entries, single lever, high version)				
70065200	H-B 10 SDRLH-LB 21		21	5
70065400	H-B 10 SDRLH-LB 29		29	5
79065200	H-B 10 SDRLH-LB M25	25		5
79065400	H-B 10 SDRLH-LB M32	32		5

Photographs are not to scale and do not represent detailed images of the respective products.

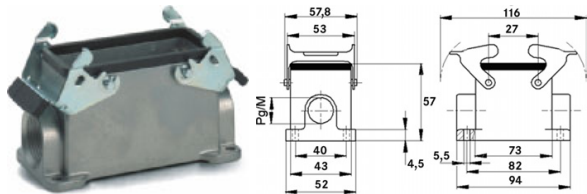
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

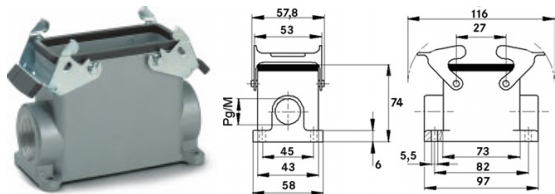
EPIC® H-B 10 SGR



EPIC® H-B 10 SGRL



EPIC® H-B 10 SGRH



Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 10 SGR

- Surface-mount base, low version
- Dual levers
- 1 cable entry

EPIC® H-B 10 SGRL

- Surface-mount base, low version
- Dual levers
- 2 cable entries

EPIC® H-B 10 SGRH

- Surface-mount base, high version
- Dual levers
- 1 cable entry

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (1 cable entry, double lever)				
10034000	H-B 10 SGR 16		16	10
19034000	H-B 10 SGR M20	20		10
19034100	H-B 10 SGR M25	25		10
H-B housing: surface-mount base (2 cable entries, double lever)				
10035000	H-B 10 SGRL 16		16	10
19035000	H-B 10 SGRL M20	20		10
19035100	H-B 10 SGRL M25	25		10
H-B housing: surface-mount base (1 cable entry, double lever, high version)				
70035200	H-B 10 SGRH 21		21	10
70035400	H-B 10 SGRH 29		29	10
79035200	H-B 10 SGRH M25	25		10
79035400	H-B 10 SGRH M32	32		10

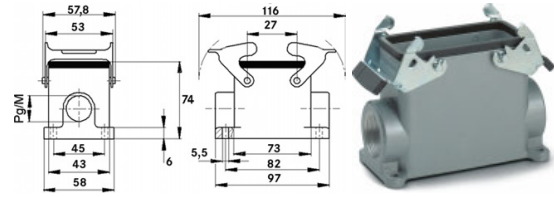
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

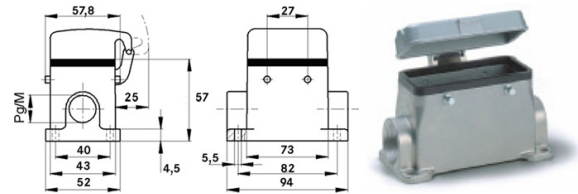
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



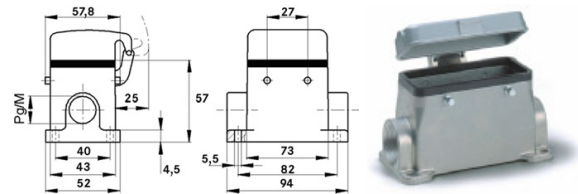
EPIC® H-B 10 SGRLH



EPIC® H-B 10 SDR-BO



EPIC® H-B 10 SDRL-BO



Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 10 SGRLH

- Surface-mount base, high version
- Dual levers
- 2 cable entries

EPIC® H-B 10 SDR-BO

- Surface-mount base, low version
- Bolts for double lever
- 1 cable entry
- Metal cover

EPIC® H-B 10 SDRL-BO

- Surface-mount base, low version
- Bolts for double lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

- Material**
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR
- IP**
Protection rating
IP 65 (latched)
- Temperature range**
-40 °C to +100 °C, short-term up to +125 °C

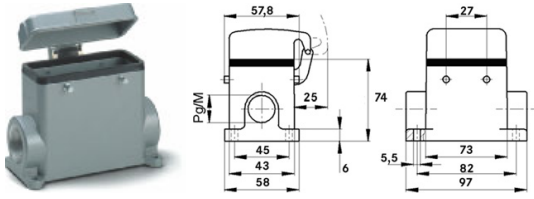
Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (2 cable entries, double lever, high version)				
70036200	H-B 10 SGRLH 21		21	10
70036400	H-B 10 SGRLH 29		29	10
79036200	H-B 10 SGRLH M25	25		10
79036400	H-B 10 SGRLH M32	32		10
H-B housing: surface-mount base (cover, 1 cable entry, bolts for double lever)				
10036000	H-B 10 SDR-BO 16		16	10
19036000	H-B 10 SDR-BO M20	20		10
19036100	H-B 10 SDR-BO M25	25		10
H-B housing: surface-mount base (cover, 2 cable entries, bolts for double lever)				
10038000	H-B 10 SDRL-BO 16		16	10
19038000	H-B 10 SDRL-BO M20	20		10
79046600	H-B 10 SDRL-BO M25	25		10

Photographs are not to scale and do not represent detailed images of the respective products.

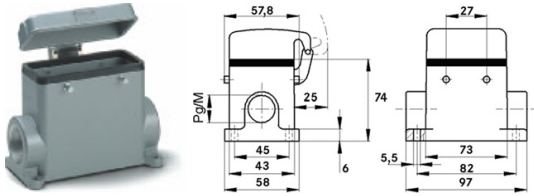
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-B 10 SDRH-BO



EPIC® H-B 10 SDRLH-BO



Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 10 SDRH-BO

- Surface-mount base, high version
- Bolts for double lever
- 1 cable entry
- Metal cover

EPIC® H-B 10 SDRLH-BO

- Surface-mount base, high version
- Bolts for double lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

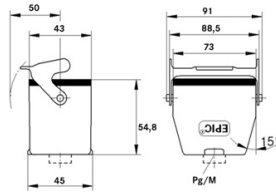
	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (cover, 1 cable entry, bolts for double lever, high version)				
70045200	H-B 10 SDRH-BO 21		21	5
70045400	H-B 10 SDRH-BO 29		29	5
79045200	H-B 10 SDRH-BO M25	25		5
H-B housing: surface-mount base (cover, 2 cable entries, bolts for double lever, high version)				
70046200	H-B 10 SDRLH-BO 21		21	5
79046200	H-B 10 SDRLH-BO M25	25		5
79046400	H-B 10 SDRLH-BO M32	32		5

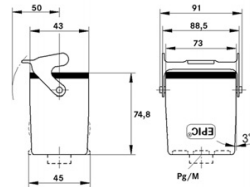
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

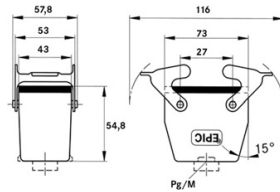
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



EPIC® H-B 10 TBF-LB



EPIC® H-B 10 TBFH-LB



EPIC® H-B 10 TBF



Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 10 TBF-LB

- Cable coupler hood, low version
- Single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 10 TBFH-LB

- Cable coupler hood, high version
- Single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 10 TBF

- Cable coupler hood, low version
- Dual levers
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

- Material**
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR
- Protection rating**
IP 65 (latched)
- Temperature range**
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: cable coupler hood (1 straight cable entry, single lever)					
10046900	H-B 10 TBF-LB 16		16	yes	10
70042200	H-B 10 TBF-LB 21		21	yes	10
19046900	H-B 10 TBF-LB M20	20			10
79042200	H-B 10 TBF-LB M25	25			10
H-B housing: cable coupler hood (1 straight cable entry, single lever, high version)					
70042400	H-B 10 TBFH-LB 21		21	yes	10
70042600	H-B 10 TBFH-LB 29		29	yes	10
79042400	H-B 10 TBFH-LB M25	25			10
79042600	H-B 10 TBFH-LB M32	32			10
H-B housing: cable coupler hood (straight cable entry, double lever)					
10046000	H-B 10 TBF 16		16	yes	10
70040200	H-B 10 TBF 21		21	yes	10
19046000	H-B 10 TBF M20	20			10
79040200	H-B 10 TBF M25	25			10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-B 10 TBFH



Benefits

- The smallest housing with single and double lever. The right housing is available for every application

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

- Cable coupler hood, high version
- Dual levers
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

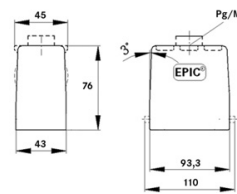
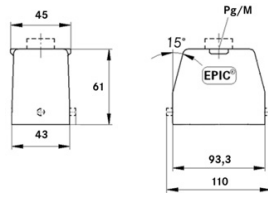
Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: cable coupler hood (straight cable entry, double lever, high version)					
70040400	H-B 10 TBFH 21		21	yes	10
70040600	H-B 10 TBFH 29		29	yes	10
79040400	H-B 10 TBFH M25	25			10
79040600	H-B 10 TBFH M32	32			10

Photographs are not to scale and do not represent detailed images of the respective products.

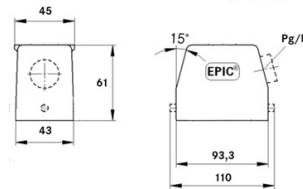
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



EPIC® H-B 16 TGH-RO



EPIC® H-B 16 TS-RO



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 16 TG-RO

- Hood, low version
- Reels for single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 16 TGH-RO

- Hood, high version
- Reels for single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 16 TS-RO

- Hood, low version
- Reels for single lever
- Side cable entry
- Versions with neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

- Material**
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR
- Protection rating**
IP 65 (latched)
- Temperature range**
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (straight cable entry, bolts for single lever)					
10080900	H-B 16 TG-RO 21		21	yes	5
19080900	H-B 16 TG-RO M25	25			5
H-B housing: hood (straight cable entry, bolts for single lever, high version)					
70094200	H-B 16 TGH-RO 21		21	yes	5
70094400	H-B 16 TGH-RO 29		29	yes	5
79094200	H-B 16 TGH-RO M25	25			5
79094400	H-B 16 TGH-RO M32	32			5
79094600	H-B 16 TGH-RO M40	40			5
H-B housing: hood (side cable entry, bolts for single lever)					
10082900	H-B 16 TS-RO 21		21	yes	5
10092900	H-B 16 TS-RO 29		29	yes	5
19082900	H-B 16 TS-RO M25	25		yes	5
19092900	H-B 16 TS-RO M32	32		yes	5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

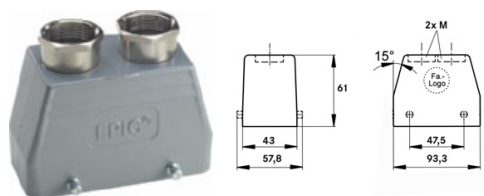
EPIC® H-B 16 TSH-RO



EPIC® H-B 16 TG



EPIC® H-B 16 TG 2X



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

- EPIC® H-B 16 TSH-RO
 - Hood, high version
 - Reels for single lever
 - Side cable entry
 - Versions with / without neck

EPIC® H-B 16 TG

- Hood, low version
- Bolts for double lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 16 TG 2X

- Hood, low version
- Bolts for double lever
- 2 straight cable entries
- Versions with neck

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

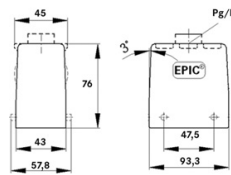
	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (side cable entry, bolts for single lever, high version)					
70104200	H-B 16 TSH-RO 21		21	yes	5
70104400	H-B 16 TSH-RO 29		29	yes	5
79104200	H-B 16 TSH-RO M25	25			5
79104400	H-B 16 TSH-RO M32	32			5
79104800	H-B 16 TSH-RO M40	40			5
H-B housing: hood (straight cable entry, bolts for double lever)					
10080000	H-B 16 TG 21		21	yes	5
10090000	H-B 16 TG 29		29	yes	5
19080000	H-B 16 TG M25	25			5
19090000	H-B 16 TG M32	32			5
H-B housing: hood (2 straight cable entries, bolts for double lever)					
19080500	H-B 16 TG 2XM25	2 x 25		yes	5

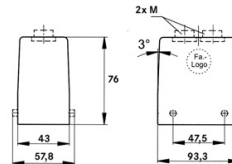
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



EPIC® H-B 16 TGH



EPIC® H-B 16 TGH 2X



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 16 TGH

- Hood, high version
- Bolts for double lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 16 TGH 2X

- Hood, high version
- Bolts for double lever
- 2 straight cable entries
- Versions without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (straight cable entry, bolts for double lever, high version)					
70100200	H-B 16 TGH 21		21	yes	5
70100400	H-B 16 TGH 29		29	yes	5
79100200	H-B 16 TGH M25	25			5
79100400	H-B 16 TGH M32	32			5
79100800	H-B 16 TGH M40	40			5
H-B housing: hood (2 straight cable entries, bolts for double lever, high version)					
44422018	H-B 16 TGH 2XM25	2 x 25			5
79128600	H-B 16 TGH 2XM32	2 x 32			5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

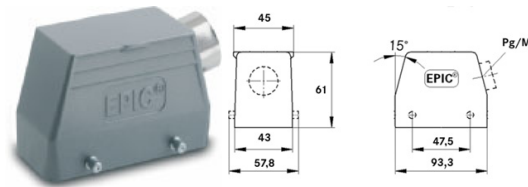
EPIC® H-B 16 TGB



EPIC® H-B 16 TGBH



EPIC® H-B 16 TS



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 16 TGB

- Hood, low version
- Dual levers
- Straight cable entry
- Versions with / without neck

EPIC® H-B 16 TGBH

- Hood, high version
- Dual levers
- Straight cable entry
- Versions with / without neck

EPIC® H-B 16 TS

- Hood, low version
- Bolts for double lever
- Side cable entry
- Versions with neck

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

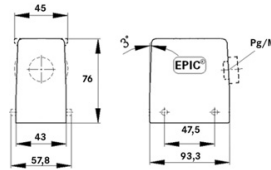
	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (straight cable entry, double lever)					
10081000	H-B 16 TGB 21		21	yes	5
19081000	H-B 16 TGB M25	25			5
H-B housing: hood (straight cable entry, double lever, high version)					
70105200	H-B 16TGBH 21		21	yes	5
70105400	H-B 16TGBH 29		29	yes	5
79105200	H-B 16TGBH M25	25			5
79105400	H-B 16TGBH M32	32			5
H-B housing: hood (side cable entry, bolts for double lever)					
10082000	H-B 16 TS 21		21	yes	5
10092000	H-B 16 TS 29		29	yes	5
19082000	H-B 16 TS M25	25		yes	5
19092000	H-B 16 TS M32	32		yes	5

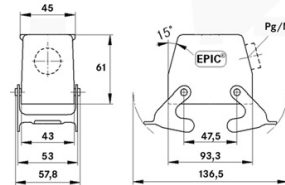
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

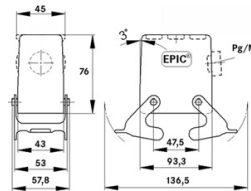
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



EPIC® H-B 16 TSH



EPIC® H-B 16 TSB



EPIC® H-B 16 TSBH

Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 16 TSH

- Hood, high version
- Bolts for double lever
- Side cable entry
- Versions with / without neck

EPIC® H-B 16 TSB

- Hood, low version
- Dual levers
- Side cable entry
- Versions with neck

EPIC® H-B 16 TSBH

- Hood, high version
- Dual levers
- Side cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

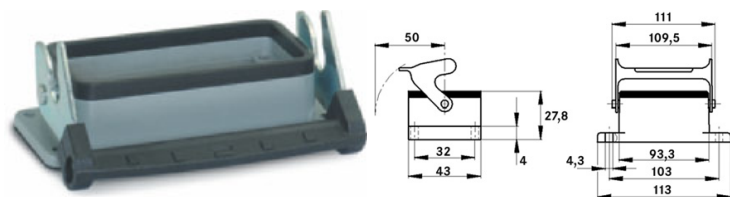
Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (side cable entry, bolts for double lever, high version)					
70102200	H-B 16 TSH 21		21	yes	5
70102400	H-B 16 TSH 29		29	yes	5
79102200	H-B 16 TSH M25	25			5
79102400	H-B 16 TSH M32	32			5
79102800	H-B 16 TSH M40	40			5
H-B housing: hood (side cable entry, double lever)					
10083000	H-B 16 TSB 21		21	yes	5
19083000	H-B 16 TSB M25	25		yes	5
H-B housing: hood (side cable entry, double lever, high version)					
70107200	H-B 16 TSBH 21		21	yes	5
70107400	H-B 16 TSBH 29		29	yes	5
79107200	H-B 16 TSBH M25	25			5
79107400	H-B 16 TSBH M32	32			5

Photographs are not to scale and do not represent detailed images of the respective products.

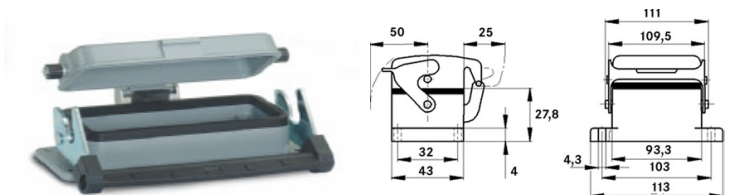
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

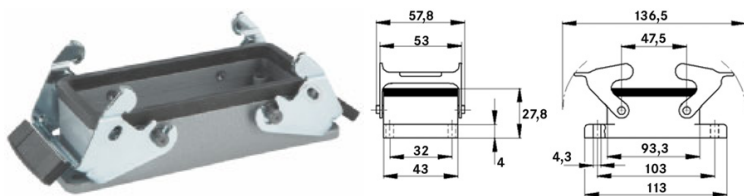
EPIC® H-B 16 AG-LB



EPIC® H-B 16 AD-LB



EPIC® H-B 16 AG



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 16 AG-LB

- Panel-mount base
- Single lever
- Included: flat gasket

EPIC® H-B 16 AD-LB

- Panel-mount base
- Single lever
- Metal cover
- Included: flat gasket

EPIC® H-B 16 AG

- Panel-mount base
- Dual levers
- Included: flat gasket

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

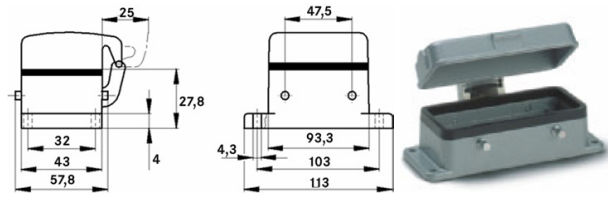
	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	Pieces / PU
H-B housing: panel-mount base (single lever)		
10072900	H-B 16 AG-LB	5
H-B housing: panel-mount base (cover, single lever)		
10073900	H-B 16 AD-LB	5
H-B housing: panel-mount base (double lever)		
10072000	H-B 16 AG	5

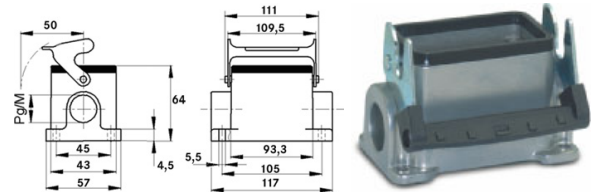
Photographs are not to scale and do not represent detailed images of the respective products.



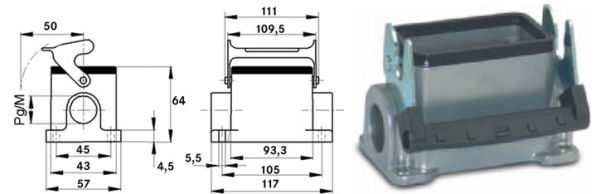
EPIC® H-B 16 AD-BO



EPIC® H-B 16 SGR-LB



EPIC® H-B 16 SGRL-LB



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

- EPIC® H-B 16 AD-BO**
- Panel-mount base
 - Bolts for double lever
 - Metal cover
 - Included: flat gasket

EPIC® H-B 16 SGR-LB

- Surface-mount base, low version
- Single lever
- 1 cable entry

EPIC® H-B 16 SGRL-LB

- Surface-mount base, low version
- Single lever
- 2 cable entries

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

- Material**
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR
- IP**
Protection rating
IP 65 (latched)
- Temperature range**
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-B housing: panel-mount base (cover, bolts for double lever)				
10073000	H-B 16 AD-BO			5
H-B housing: surface-mount base (1 cable entry, single lever)				
10074900	H-B 16 SGR-LB 21		21	5
19074900	H-B 16 SGR-LB M25	25		5
H-B housing: surface-mount base (2 cable entries, single lever)				
10075900	H-B 16 SGRL-LB 21		21	5
19075900	H-B 16 SGRL-LB M25	25		5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

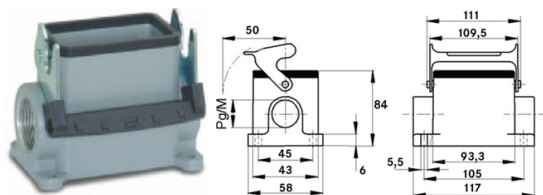
EPIC® H-B 16 SGR-LB

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

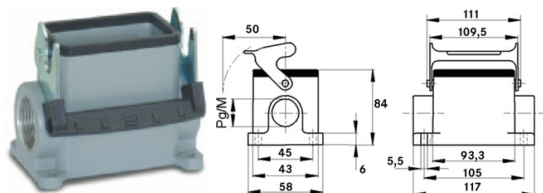
EPIC® H-B 16 SGRL-LB

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

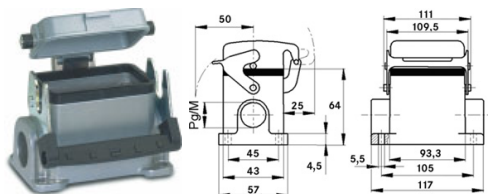
EPIC® H-B 16 SGRH-LB



EPIC® H-B 16 SGR LH-LB



EPIC® H-B 16 SDR-LB



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 16 SGRH-LB

- Surface-mount base, high version
- Single lever
- 1 cable entry

EPIC® H-B 16 SGR LH-LB

- Surface-mount base, high version
- Single lever
- 2 cable entries

EPIC® H-B 16 SDR-LB

- Surface-mount base, low version
- Single lever
- 1 cable entry
- Metal cover

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (1 cable entry, single lever, high version)				
70110200	H-B 16 SGRH-LB 21		21	5
70110400	H-B 16 SGRH-LB 29		29	5
79110200	H-B 16 SGRH-LB M25	25		5
79110400	H-B 16 SGRH-LB M32	32		5
H-B housing: surface-mount base (2 cable entries, single lever, high version)				
70111200	H-B 16 SGR LH-LB 21		21	5
70111400	H-B 16 SGR LH-LB 29		29	5
79111200	H-B 16 SGR LH-LB M25	25		5
79111400	H-B 16 SGR LH-LB M32	32		5
H-B housing: surface-mount base (cover, 1 cable entry, single lever)				
10076900	H-B 16 SDR-LB 21		21	5
19076900	H-B 16 SDR-LB M25	25		5

Photographs are not to scale and do not represent detailed images of the respective products.

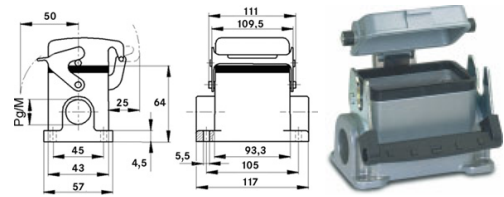
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

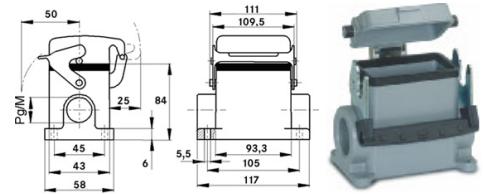
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



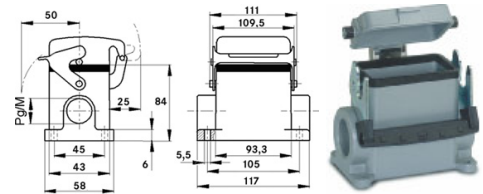
EPIC® H-B 16 SDRL-LB



EPIC® H-B 16 SDRH-LB



EPIC® H-B 16 SDRLH-LB



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 16 SDRL-LB

- Surface-mount base, low version
- Single lever
- 2 cable entries
- Metal cover

EPIC® H-B 16 SDRH-LB

- Surface-mount base, high version
- Single lever
- 1 cable entry
- Metal cover

EPIC® H-B 16 SDRLH-LB

- Surface-mount base, high version
- Single lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

- Material**
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR
- Protection rating**
IP 65 (latched)
- Temperature range**
-40 °C to +100 °C, short-term up to +125 °C

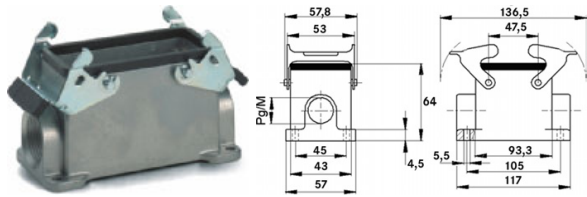
Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (cover, 2 cable entries, single lever)				
10078900	H-B 16 SDRL-LB 21		21	5
19078900	H-B 16 SDRL-LB M25	25		5
H-B housing: surface-mount base (cover, 1 cable entry, single lever, high version)				
70114200	H-B 16 SDRH-LB 21		21	5
70114400	H-B 16 SDRH-LB 29		29	5
79114200	H-B 16 SDRH-LB M25	25		5
79114400	H-B 16 SDRH-LB M32	32		5
H-B housing: surface-mount base (cover, 2 cable entries, single lever, high version)				
70115200	H-B 16 SDRLH-LB 21		21	5
70115400	H-B 16 SDRLH-LB 29		29	5
79115200	H-B 16 SDRLH-LB M25	25		5
79115400	H-B 16 SDRLH-LB M32	32		5

Photographs are not to scale and do not represent detailed images of the respective products.

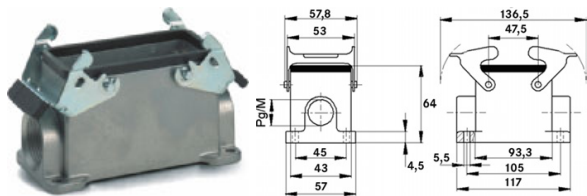
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

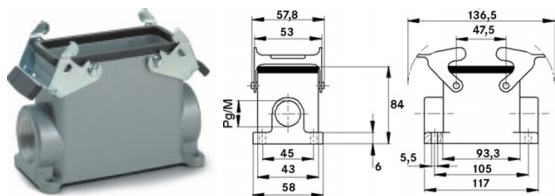
EPIC® H-B 16 SGR



EPIC® H-B 16 SGRL



EPIC® H-B 16 SGRH



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 16 SGR

- Surface-mount base, low version
- Dual levers
- 1 cable entry

EPIC® H-B 16 SGRL

- Surface-mount base, low version
- Dual levers
- 2 cable entries

EPIC® H-B 16 SGRH

- Surface-mount base, high version
- Dual levers
- 1 cable entry

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (1 cable entry, double lever)				
10074000	H-B 16 SGR 21		21	5
19074000	H-B 16 SGR M25	25		5
H-B housing: surface-mount base (2 cable entries, double lever)				
10075000	H-B 16 SGRL 21		21	5
19075000	H-B 16 SGRL M25	25		5
H-B housing: surface-mount base (1 cable entry, double lever, high version)				
70085200	H-B 16 SGRH 21		21	5
70085400	H-B 16 SGRH 29		29	5
79085200	H-B 16 SGRH M25	25		5
79085400	H-B 16 SGRH M32	32		5

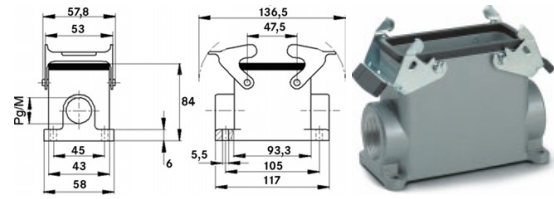
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

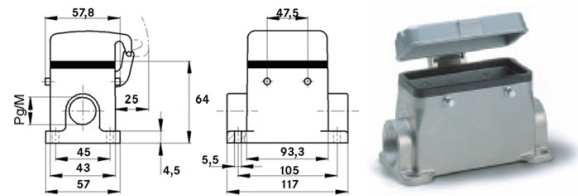
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



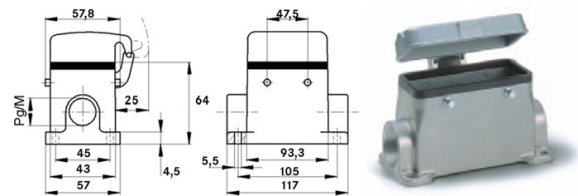
EPIC® H-B 16 SGRLH



EPIC® H-B 16 SDR-BO



EPIC® H-B 16 SDRL-BO



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 16 SGRLH

- Surface-mount base, high version
- Dual levers
- 2 cable entries

EPIC® H-B 16 SDR-BO

- Surface-mount base, low version
- Bolts for double lever
- 1 cable entry
- Metal cover

EPIC® H-B 16 SDRL-BO

- Surface-mount base, low version
- Bolts for double lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

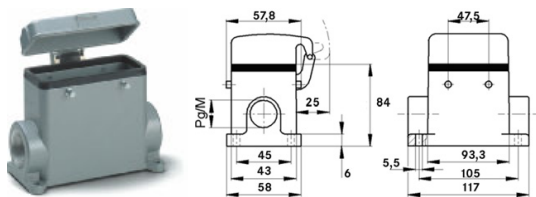
Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (2 cable entries, double lever, high version)				
70086200	H-B 16 SGRLH 21		21	5
70086400	H-B 16 SGRLH 29		29	5
79086200	H-B 16 SGRLH M25	25		5
79086400	H-B 16 SGRLH M32	32		5
H-B housing: surface-mount base (cover, 1 cable entry, bolts for double lever)				
10076000	H-B 16 SDR-BO 21		21	5
19076000	H-B 16 SDR-BO M25	25		5
H-B housing: surface-mount base (cover, 2 cable entries, bolts for double lever)				
70096000	H-B 16 SDRL-BO 21		21	5
79096000	H-B 16 SDRL-BO M25	25		5

Photographs are not to scale and do not represent detailed images of the respective products.

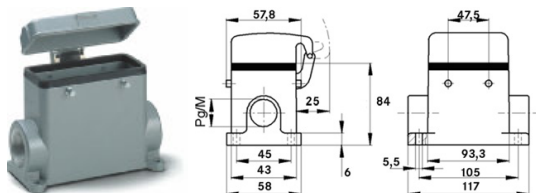
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-B 16 SDRH-BO



EPIC® H-B 16 SDRLH-BO



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 16 SDRH-BO

- Surface-mount base, high version
- Bolts for double lever
- 1 cable entry
- Metal cover

EPIC® H-B 16 SDRLH-BO

- Surface-mount base, high version
- Bolts for double lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

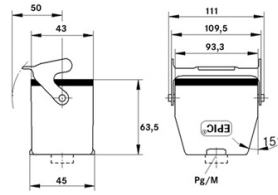
Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (cover, 1 cable entry, bolts for double lever, high version)				
70095200	H-B 16 SDRH-BO 21		21	5
70095400	H-B 16 SDRH-BO 29		29	5
79095200	H-B 16 SDRH-BO M25	25		5
79095400	H-B 16 SDRH-BO M32	32		5
H-B housing: surface-mount base (cover, 2 cable entries, bolts for double lever, high version)				
70096200	H-B 16 SDRLH-BO 21		21	5
79096200	H-B 16 SDRLH-BO M25	25		5
79096400	H-B 16 SDRLH-BO M32	32		5

Photographs are not to scale and do not represent detailed images of the respective products.

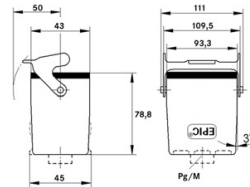
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

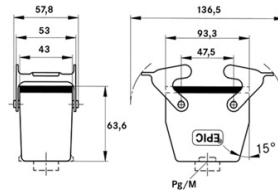
ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX



EPIC® H-B 16 TBF-LB



EPIC® H-B 16 TBFH-LB



EPIC® H-B 16 TBF



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 16 TBF-LB

- Cable coupler hood, low version
- Single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 16 TBFH-LB

- Cable coupler hood, high version
- Single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 16 TBF

- Cable coupler hood, low version
- Dual levers
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
EPIC® H-B 16 TBFH-LB
-40 °C to +100 °C, short-term up to +125 °C
EPIC® H-B 16 TBF
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: cable coupler hood (1 straight cable entry, single lever)					
10086900	H-B 16 TBF-LB 21		21	yes	5
19086900	H-B 16 TBF-LB 25	25			5
H-B housing: cable coupler hood (1 straight cable entry, single lever, high version)					
70092200	H-B 16 TBFH-LB 21		21	yes	5
70092400	H-B 16 TBFH-LB 29		29	yes	5
79092200	H-B 16 TBFH-LB M25	25			5
79092400	H-B 16 TBFH-LB M32	32			5
H-B housing: cable coupler hood (straight cable entry, double lever)					
10086000	H-B 16 TBF 21		21	yes	5
19086000	H-B 16 TBF M25	25			5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-B 16 TBFH



Benefits

- The housing standard. Wide choice for all applications

Application range

- Plant engineering
- Plastics industry
- Light & sound technology

Product features

- Cable coupler hood, high version
- Dual levers
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

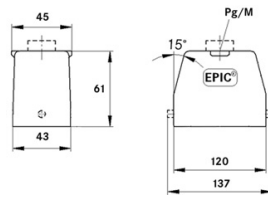
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: cable coupler hood (straight cable entry, double lever, high version)					
70090200	H-B 16 TBFH 21		21	yes	5
70090400	H-B 16 TBFH 29		29	yes	5
79090200	H-B 16 TBFH M25	25			5
79090400	H-B 16 TBFH M32	32			5

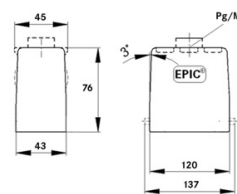
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

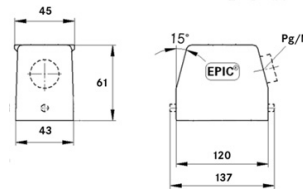
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



EPIC® H-B 24 TG-RO



EPIC® H-B 24 TGH-RO



EPIC® H-B 24 TS-RO

Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 TG-RO

- Hood, low version
- Reels for single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 24 TGH-RO

- Hood, high version
- Reels for single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 24 TS-RO

- Hood, low version
- Reels for single lever
- Side cable entry
- Versions with neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

- Material**
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR
- Protection rating**
IP 65 (latched)
- Temperature range**
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (straight cable entry, bolts for single lever)					
10121900	H-B 24 TG-RO 21		21	yes	5
10111900	H-B 24 TG-RO 29		29	yes	5
19121900	H-B 24 TG-RO M25	25			5
19111900	H-B 24 TG-RO M32	32			5
H-B housing: hood (straight cable entry, bolts for single lever, high version)					
70144400	H-B 24 TGH-RO 21		21	yes	5
70144600	H-B 24 TGH-RO 29		29	yes	5
79144400	H-B 24 TGH-RO M25	25			5
79144600	H-B 24 TGH-RO M32	32			5
79144800	H-B 24 TGH-RO M40	40			5
H-B housing: hood (side cable entry, bolts for single lever)					
10113900	H-B 24 TS-RO 21		21	yes	5
10123900	H-B 24 TS-RO 29		29	yes	5
19113900	H-B 24 TS-RO M25	25		yes	5
19123900	H-B 24 TS-RO M32	32		yes	5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

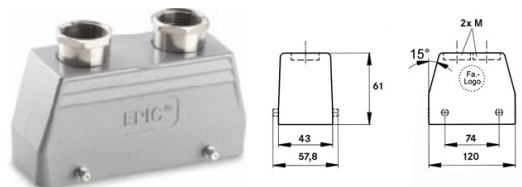
EPIC® H-B 24 TSH-RO



EPIC® H-B 24 TG



EPIC® H-B 24 TG 2X



Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 TSH-RO

- Hood, high version
- Reels for single lever
- Side cable entry
- Versions with / without neck

EPIC® H-B 24 TG

- Hood, low version
- Bolts for double lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 24 TG 2X

- Hood, low version
- Bolts for double lever
- 2 straight cable entries
- Versions with neck

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

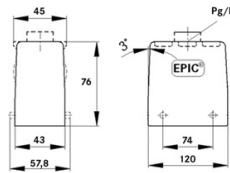
	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (side cable entry, bolts for single lever, high version)					
70154400	H-B 24 TSH-RO 21		21	yes	5
70154600	H-B 24 TSH-RO 29		29	yes	5
79154400	H-B 24 TSH-RO M25	25			5
79154600	H-B 24 TSH-RO M32	32			5
79154800	H-B 24 TSH-RO M40	40			5
H-B housing: hood (straight cable entry, bolts for double lever)					
10121000	H-B 24 TG 21		21	yes	5
10111000	H-B 24 TG 29		29	yes	5
19121000	H-B 24 TG M25	25			5
19111000	H-B 24 TG M32	32			5
H-B housing: hood (2 straight cable entries, bolts for double lever)					
44422019	H-B 24 TG 2XM25	2 x 25		yes	5
44422020	H-B 24 TG 2XM32	2 x 32		yes	5

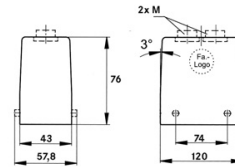
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



EPIC® H-B 24 TGH



EPIC® H-B 24 TGH 2X



Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 TGH

- Hood, high version
- Bolts for double lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 24 TGH 2X

- Hood, high version
- Bolts for double lever
- 2 straight cable entries
- Versions without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (straight cable entry, bolts for double lever, high version)					
70150400	H-B 24 TGH 21		21	yes	5
70150600	H-B 24 TGH 29		29	yes	5
79150400	H-B 24 TGH M25	25			5
79150600	H-B 24 TGH M32	32			5
79150800	H-B 24 TGH M40	40			5
H-B housing: hood (2 straight cable entries, bolts for double lever, high version)					
44422021	H-B 24 TGH 2XM25	2 x 25			5
79178500	H-B 24 TGH 2XM32	2 x 32			5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

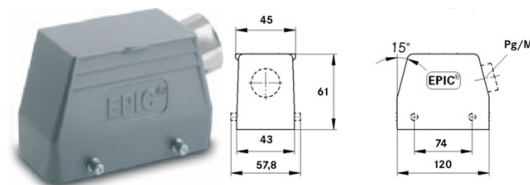
EPIC® H-B 24 TGB



EPIC® H-B 24 TGBH



EPIC® H-B 24 TS



Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 TGB

- Hood, low version
- Dual levers
- Straight cable entry
- Versions with / without neck

EPIC® H-B 24 TGBH

- Hood, high version
- Dual levers
- Straight cable entry
- Versions with / without neck

EPIC® H-B 24 TS

- Hood, low version
- Bolts for double lever
- Side cable entry
- Versions with neck

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

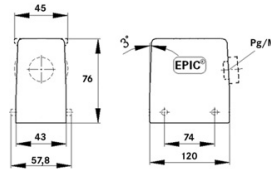
	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (straight cable entry, double lever)					
10122000	H-B 24 TGB 21		21	yes	5
10112000	H-B 24 TGB 29		29	yes	5
19122000	H-B 24 TGB M25	25			5
19112000	H-B 24 TGB M32	32			5
H-B housing: hood (straight cable entry, double lever, high version)					
70155400	H-B 24 TGBH 21		21	yes	5
70155600	H-B 24 TGBH 29		29	yes	5
79155400	H-B 24 TGBH M25	25			5
79155600	H-B 24 TGBH M32	32			5
H-B housing: hood (side cable entry, bolts for double lever)					
10113000	H-B 24 TS 21		21	yes	5
10123000	H-B 24 TS 29		29	yes	5
19113000	H-B 24 TS M25	25		yes	5
19123000	H-B 24 TS M32	32		yes	5

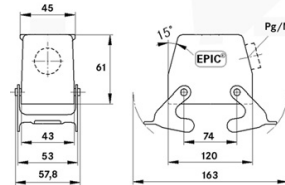
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

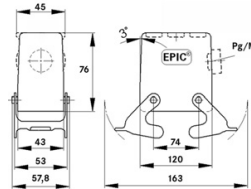
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



EPIC® H-B 24 TSH



EPIC® H-B 24 TSB



EPIC® H-B 24 TSBH

Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 TSH

- Hood, high version
- Bolts for double lever
- Side cable entry
- Versions with / without neck

EPIC® H-B 24 TSB

- Hood, low version
- Dual levers
- Side cable entry
- Versions with neck

EPIC® H-B 24 TSBH

- Hood, high version
- Dual levers
- Side cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

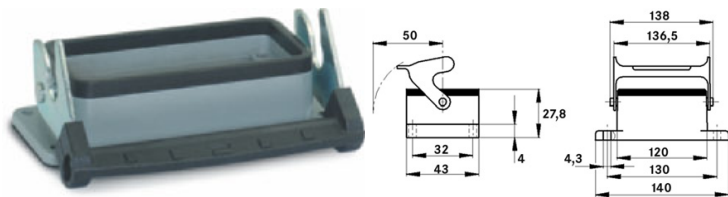
Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (side cable entry, bolts for double lever, high version)					
70152400	H-B 24 TSH 21		21	yes	5
70152600	H-B 24 TSH 29		29	yes	5
79152400	H-B 24 TSH M25	25			5
79152600	H-B 24 TSH M32	32			5
79152800	H-B 24 TSH M40	40			5
H-B housing: hood (side cable entry, double lever)					
10114000	H-B 24 TSB 21		21	yes	5
10124000	H-B 24 TSB 29		29	yes	5
19114000	H-B 24 TSB M25	25		yes	5
19124000	H-B 24 TSB M32	32		yes	5
H-B housing: hood (side cable entry, double lever, high version)					
70157400	H-B 24 TSBH 21		21	yes	5
70157600	H-B 24 TSBH 29		29	yes	5
79157400	H-B 24 TSBH M25	25			5
79157600	H-B 24 TSBH M32	32			5

Photographs are not to scale and do not represent detailed images of the respective products.

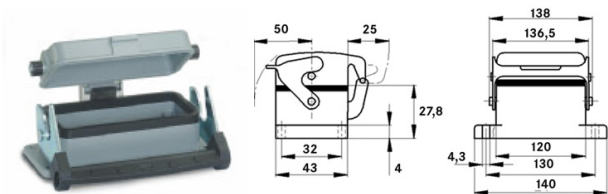
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

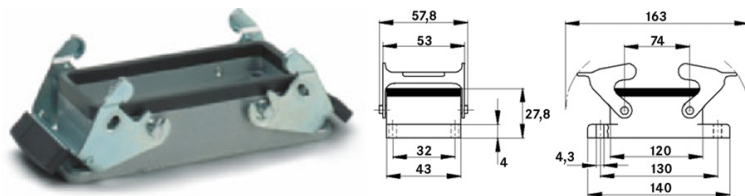
EPIC® H-B 24 AG-LB



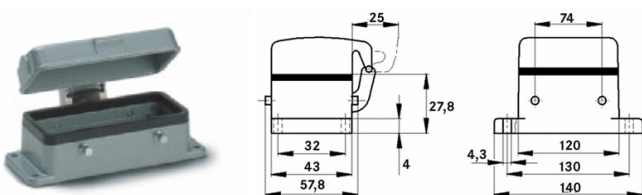
EPIC® H-B 24 AD-LB



EPIC® H-B 24 AG



EPIC® H-B 24 AD-BO



Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 AG-LB

- Panel-mount base
- Single lever
- Included: flat gasket

EPIC® H-B 24 AD-LB

- Panel-mount base
- Single lever
- Metal cover
- Included: flat gasket

EPIC® H-B 24 AG

- Panel-mount base
- Dual levers
- Included: flat gasket

EPIC® H-B 24 AD-BO

- Panel-mount base
- Bolts for double lever
- Metal cover
- Included: flat gasket

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

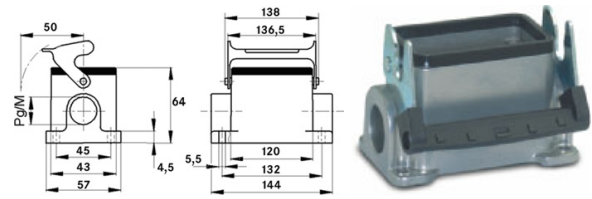
Article number	Article	Pieces / PU
H-B housing: panel-mount base (single lever)		
10102900	H-B 24 AG-LB	5
H-B housing: panel-mount base (cover, single lever)		
10103900	H-B 24 AD-LB	5
H-B housing: panel-mount base (double lever)		
10102000	H-B 24 AG	5
H-B housing: panel-mount base (cover, bolts for double lever)		
10103000	H-B 24 AD-BO	5

Photographs are not to scale and do not represent detailed images of the respective products.

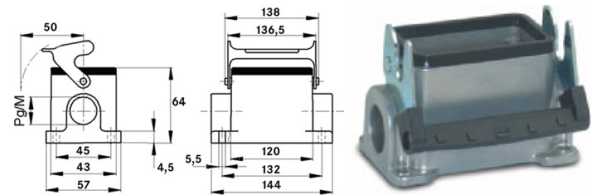
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



EPIC® H-B 24 SGR-LB



EPIC® H-B 24 SGRL-LB



Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 SGR-LB

- Surface-mount base, low version
- Single lever
- 1 cable entry

EPIC® H-B 24 SGRL-LB

- Surface-mount base, low version
- Single lever
- 2 cable entries

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

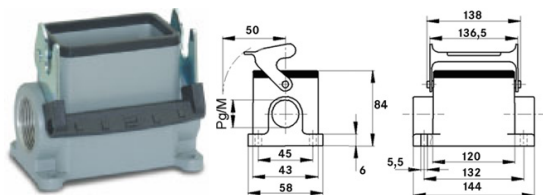
Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (1 cable entry, single lever)				
10104900	H-B 24 SGR-LB 21		21	5
19104900	H-B 24 SGR-LB M25	25		5
H-B housing: surface-mount base (2 cable entries, single lever)				
10105900	H-B 24 SGRL-LB 21		21	5
19105900	H-B 24 SGRL-LB M25	25		5

Photographs are not to scale and do not represent detailed images of the respective products.

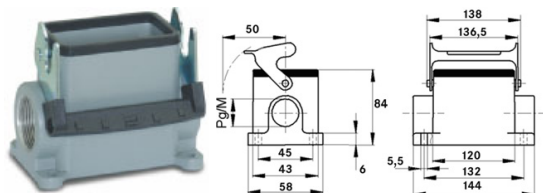
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

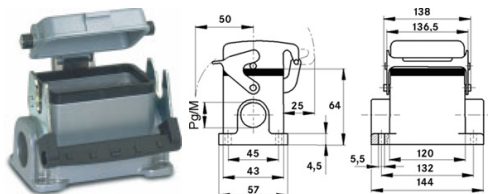
EPIC® H-B 24 SGRH-LB



EPIC® H-B 24 SGR LH-LB



EPIC® H-B 24 SDR-LB



Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 SGRH-LB

- Surface-mount base, high version
- Single lever
- 1 cable entry

EPIC® H-B 24 SGR LH-LB

- Surface-mount base, high version
- Single lever
- 2 cable entries

EPIC® H-B 24 SDR-LB

- Surface-mount base, low version
- Single lever
- 1 cable entry
- Metal cover

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (1 cable entry, single lever, high version)				
70160200	H-B 24 SGRH-LB 21		21	5
70160400	H-B 24 SGRH-LB 29		29	5
79160200	H-B 24 SGRH-LB M25	25		5
79160400	H-B 24 SGRH-LB M32	32		5
H-B housing: surface-mount base (2 cable entries, single lever, high version)				
70161200	H-B 24 SGR LH-LB 21		21	5
70161400	H-B 24 SGR LH-LB 29		29	5
79161200	H-B 24 SGR LH-LB M25	25		5
79161400	H-B 24 SGR LH-LB M32	32		5
H-B housing: surface-mount base (cover, 1 cable entry, single lever)				
10107900	H-B 24 SDR-LB 21		21	5
19107900	H-B 24 SDR-LB M25	25		5

Photographs are not to scale and do not represent detailed images of the respective products.

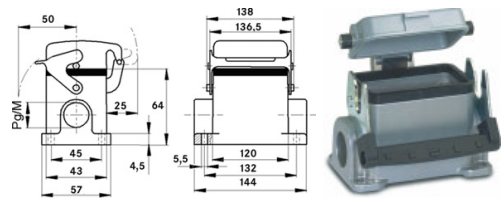
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

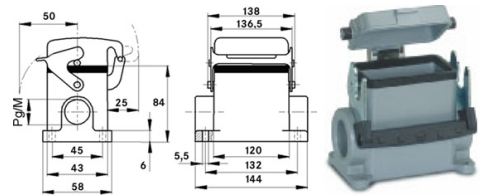
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



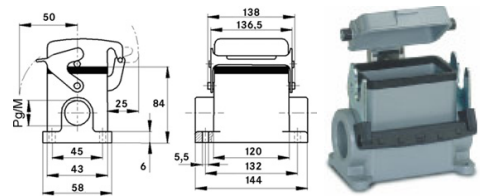
EPIC® H-B 24 SDRL-LB



EPIC® H-B 24 SDRH-LB



EPIC® H-B 24 SDRLH-LB



Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 SDRL-LB

- Surface-mount base, low version
- Single lever
- 2 cable entries
- Metal cover

EPIC® H-B 24 SDRH-LB

- Surface-mount base, high version
- Single lever
- 1 cable entry
- Metal cover

EPIC® H-B 24 SDRLH-LB

- Surface-mount base, high version
- Single lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

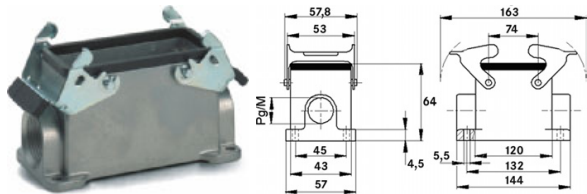
Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (cover, 2 cable entries, single lever)				
10109900	H-B 24 SDRL-LB 21		21	5
19109900	H-B 24 SDRL-LB M25	25		5
H-B housing: surface-mount base (cover, 1 cable entry, single lever, high version)				
70164200	H-B 24 SDRH-LB 21		21	5
70164400	H-B 24 SDRH-LB 29		29	5
79164200	H-B 24 SDRH-LB M25	25		5
79164400	H-B 24 SDRH-LB M32	32		5
H-B housing: surface-mount base (cover, 2 cable entries, single lever, high version)				
70165200	H-B 24 SDRLH-LB 21		21	5
70165400	H-B 24 SDRLH-LB 29		29	5
79165200	H-B 24 SDRLH-LB M25	25		5
79165400	H-B 24 SDRLH-LB M32	32		5

Photographs are not to scale and do not represent detailed images of the respective products.

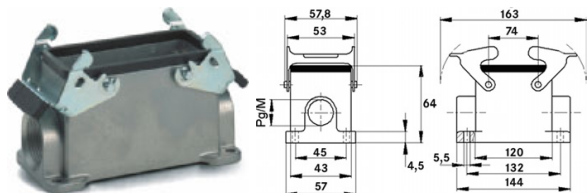
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

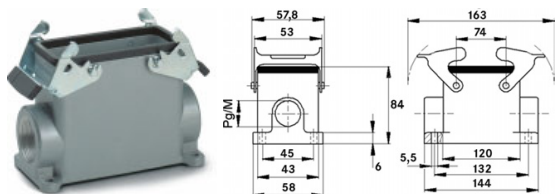
EPIC® H-B 24 SGR



EPIC® H-B 24 SGRL



EPIC® H-B 24 SGRH



Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 SGR

- Surface-mount base, low version
- Dual levers
- 1 cable entry

EPIC® H-B 24 SGRL

- Surface-mount base, low version
- Dual levers
- 2 cable entries

EPIC® H-B 24 SGRH

- Surface-mount base, high version
- Dual levers
- 1 cable entry

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (1 cable entry, double lever)				
10104000	H-B 24 SGR 21		21	5
19104000	H-B 24 SGR M25	25		5
H-B housing: surface-mount base (2 cable entries, double lever)				
10105000	H-B 24 SGRL 21		21	5
19105000	H-B 24 SGRL M25	25		5
H-B housing: surface-mount base (1 cable entry, double lever, high version)				
70135200	H-B 24 SGRH 21		21	5
70135400	H-B 24 SGRH 29		29	5
79135200	H-B 24 SGRH M25	25		5
79135400	H-B 24 SGRH M32	32		5

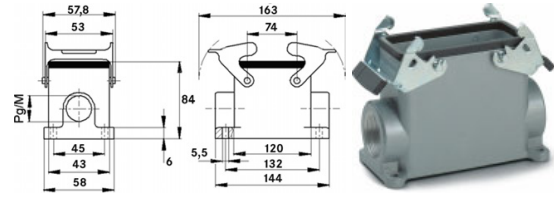
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

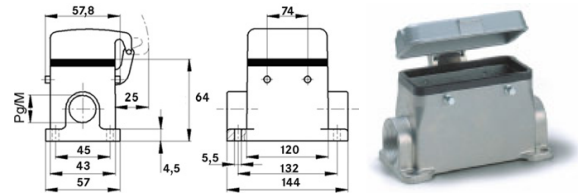
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



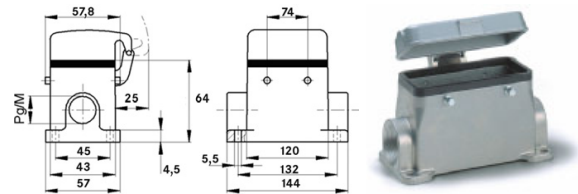
EPIC® H-B 24 SGRLH



EPIC® H-B 24 SDR-BO



EPIC® H-B 24 SDRL-BO



Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 SGRLH

- Surface-mount base, high version
- Dual levers
- 2 cable entries

EPIC® H-B 24 SDR-BO

- Surface-mount base, low version
- Bolts for double lever
- 1 cable entry
- Metal cover

EPIC® H-B 24 SDRL-BO

- Surface-mount base, low version
- Bolts for double lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

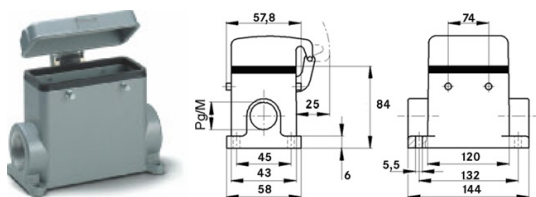
Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (2 cable entries, double lever, high version)				
70136200	H-B 24 SGRLH 21		21	5
70136400	H-B 24 SGRLH 29		29	5
79136200	H-B 24 SGRLH M25	25		5
79136400	H-B 24 SGRLH M32	32		5
H-B housing: surface-mount base (cover, 1 cable entry, bolts for double lever)				
10107000	H-B 24 SDR-BO 21		21	5
19107000	H-B 24 SDR-BO M25	25		5
H-B housing: surface-mount base (cover, 2 cable entries, bolts for double lever)				
10109000	H-B 24 SDRL-BO 21		21	5
19109000	H-B 24 SDRL-BO M25	25		5

Photographs are not to scale and do not represent detailed images of the respective products.

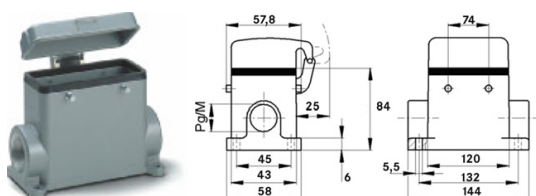
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-B 24 SDRH-BO



EPIC® H-B 24 SDRLH-BO



Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 SDRH-BO

- Surface-mount base, high version
- Bolts for double lever
- 1 cable entry
- Metal cover

EPIC® H-B 24 SDRLH-BO

- Surface-mount base, high version
- Bolts for double lever
- 2 cable entries
- Metal cover

Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

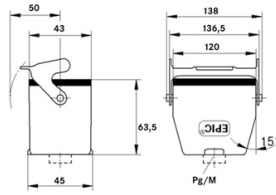
Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (cover, 1 cable entry, bolts for double lever, high version)				
70145200	H-B 24 SDRH-BO 21		21	5
70145400	H-B 24 SDRH-BO 29		29	5
79145400	H-B 24 SDRH-BO M32	32		5
H-B housing: surface-mount base (cover, 2 cable entries, bolts for double lever, high version)				
70146200	H-B 24 SDRLH-BO 21		21	5
70146400	H-B 24 SDRLH-BO 29		29	5
79146400	H-B 24 SDRLH-BO M32	32		5

Photographs are not to scale and do not represent detailed images of the respective products.

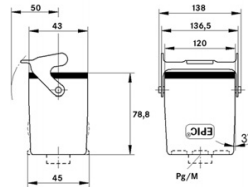
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

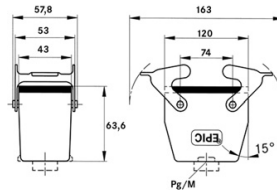
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



EPIC® H-B 24 TBF-LB



EPIC® H-B 24 TBFH-LB



EPIC® H-B 24 TBF



Benefits

- Ideal for many applications due to a wide range of housings and inserts

Application range

- Plant engineering
- Light & sound technology
- Plastics industry

Product features

EPIC® H-B 24 TBF-LB

- Cable coupler hood, low version
- Single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 24 TBFH-LB

- Cable coupler hood, high version
- Single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 24 TBF

- Cable coupler hood, low version
- Dual levers
- Straight cable entry
- Versions with / without neck

Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

Technical data



Material
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating
IP 65 (latched)



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: cable coupler hood (1 straight cable entry, single lever)					
10127900	H-B 24 TBF-LB 21		21	yes	5
10117900	H-B 24 TBF-LB 29		29	yes	5
19127900	H-B 24 TBF-LB M25	25			5
19117900	H-B 24 TBF-LB M32	32			5
H-B housing: cable coupler hood (1 straight cable entry, single lever, high version)					
70142400	H-B 24 TBFH-LB 21		21	yes	5
79142400	H-B 24 TBFH-LB M25	25			5
79142600	H-B 24 TBFH-LB M32	32			5
H-B housing: cable coupler hood (straight cable entry, double lever)					
10127000	H-B 24 TBF 21		21	yes	5
10117000	H-B 24 TBF 29		29	yes	5
19127000	H-B 24 TBF M25	25			5
19117000	H-B 24 TBF M32	32			5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-B 24 TBFH



■ Benefits

- Ideal for many applications due to a wide range of housings and inserts

■ Application range

- Plant engineering
- Light & sound technology
- Plastics industry

■ Product features

- Cable coupler hood, high version
- Dual levers
- Straight cable entry
- Versions with / without neck

■ Suitable inserts

- Refer to Selection Table A 10 to select the required inserts and housings

■ Technical data



Material

Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR



Protection rating

IP 65 (latched)



Temperature range

-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: cable coupler hood (straight cable entry, double lever, high version)					
70140400	H-B 24 TBFH 21		21	yes	5
70140600	H-B 24 TBFH 29		29	yes	5
79140400	H-B 24 TBFH M25	25			5
79140600	H-B 24 TBFH M32	32			5

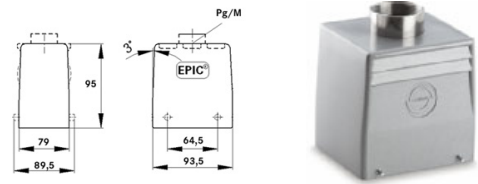
Photographs are not to scale and do not represent detailed images of the respective products.

■ Accessories

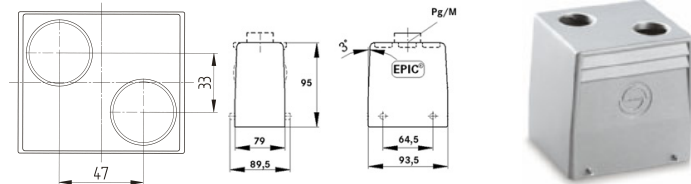
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



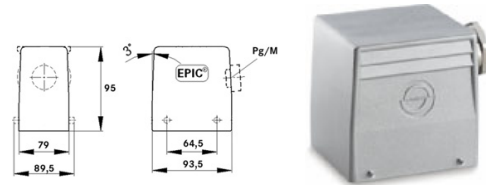
EPIC® H-B 32 TG



EPIC® H-B 32 TG 2X



EPIC® H-B 32 TS



Benefits

- Two inserts in one housing. With two levers for high safety

Application range

- Plant engineering
- Control engineering
- Plastics industry

Product features

EPIC® H-B 32 TG

- Hood
- Bolts for double lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 32 TG 2X

- Hood
- Bolts for double lever
- 2 straight cable entries
- Versions without neck

EPIC® H-B 32 TS

- Hood
- Bolts for double lever
- Side cable entry
- Versions with / without neck

Suitable inserts

- The H-B 32 housings can also be assembled with 2 different inserts of size H-B 16
- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

- Material**
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR
- Protection rating**
IP 65 (latched)
- Temperature range**
-40 °C to +100 °C, short-term up to +125 °C

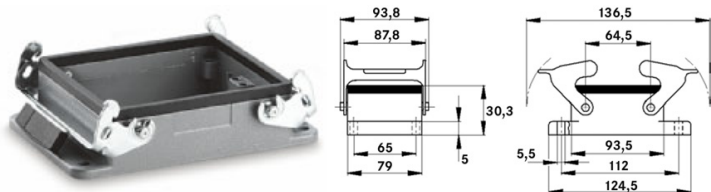
Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (straight cable entry, bolts for double lever)					
10133000	H-B 32 TG 21		21	yes	5
10134000	H-B 32 TG 29		29	yes	5
19134000	H-B 32 TG M32	32			5
19134400	H-B 32 TG M40	40			5
H-B housing: hood (2 straight cable entries, bolts for double lever)					
44422022	H-B 32 TG 2XM25	2 x 25			5
44422023	H-B 32 TG 2XM32	2 x 32			5
H-B housing: hood (side cable entry, bolts for double lever)					
10135000	H-B 32 TS 21		21	yes	5
10136000	H-B 32 TS 29		29	yes	5
10135600	H-B 32 TS 29		29		5
19135000	H-B 32 TS M25	25			5
19136000	H-B 32 TS M32	32			5
19136200	H-B 32 TS M40	40			5

Photographs are not to scale and do not represent detailed images of the respective products.

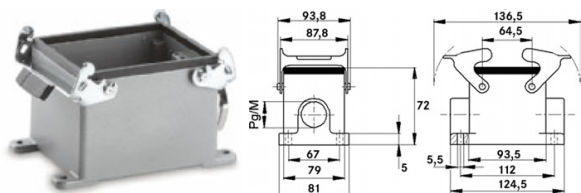
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

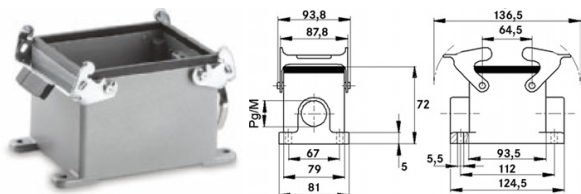
EPIC® H-B 32 AG



EPIC® H-B 32 SGR



EPIC® H-B 32 SGRL



Benefits

- Two inserts in one housing. With two levers for high safety

Application range

- Plant engineering
- Control engineering
- Plastics industry

Product features

EPIC® H-B 32 AG

- Panel-mount base
- Dual levers
- Included: flat gasket

EPIC® H-B 32 SGR

- Surface-mount base
- Dual levers
- 1 cable entry

EPIC® H-B 32 SGRL

- Surface-mount base
- Dual levers
- 2 cable entries

Suitable inserts

- The H-B 32 housings can also be assembled with 2 different inserts of size H-B 16
- Refer to Selection Table A10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-B housing: panel-mount base (double lever)				
10132000	H-B 32 AG			5
H-B housing: surface-mount base (1 cable entry, double lever)				
10137000	H-B 32 SGR 29		29	5
19137000	H-B 32 SGR M32	32		5
19146400	H-B 32 SGR M40	40		5
H-B housing: surface-mount base (2 cable entries, double lever)				
10138000	H-B 32 SGRL 29		29	5
19138000	H-B 32 SGRL M32	32		5
19145400	H-B 32 SGRL M40	40		5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

EPIC® H-B 32 SGR

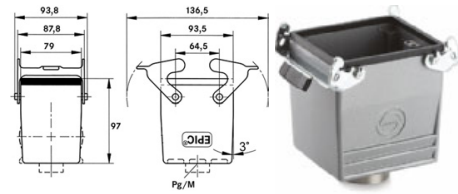
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-B 32 SGRL

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



EPIC® H-B 32 TBFH



Benefits

- Two inserts in one housing. With two levers for high safety

Application range

- Plant engineering
- Control engineering
- Plastics industry

Product features

- Cable coupler hood, high version
- Dual levers
- Straight cable entry
- Versions with / without neck

Suitable inserts

- The H-B 32 housings can also be assembled with 2 different inserts of size H-B 16
- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

Material
 Housing: powder-coated aluminium alloy, grey
 Lever: zinc-plated steel
 Sealing: NBR

Protection rating
 IP 65 (latched)

Temperature range
 -40 °C to +100 °C, short-term up to +125 °C

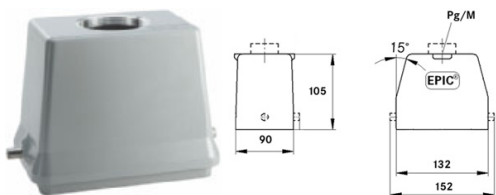
Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: cable coupler hood (straight cable entry, double lever, high version)					
10139500	H-B 32 TBFH 29		29	yes	5
19139500	H-B 32 TBFH M32	32			5

Photographs are not to scale and do not represent detailed images of the respective products.

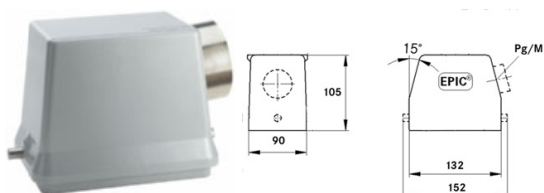
Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® H-B 48 TG



EPIC® H-B 48 TS



Benefits

- The large, robust housing for two inserts in one connector. Power and data in a single connector

Application range

- Plant engineering
- Plastics industry

Product features

EPIC® H-B 48 TG

- Hood
- Bolts for single lever
- Straight cable entry
- Versions with / without neck

EPIC® H-B 48 TS

- Hood
- Bolts for single lever
- Side cable entry
- Versions with / without neck

Suitable inserts

- The H-B 48 housings can also be assembled with 2 different inserts of size H-B 24
- Refer to Selection Table A10 to select the required inserts and housings

Technical data

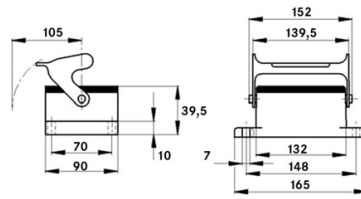
	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Neck	Pieces / PU
H-B housing: hood (straight cable entry, bolts for single lever)					
10155000	H-B 48 TG 29		29	yes	1
10156000	H-B 48 TG 36		36	yes	1
10156200	H-B 48 TG 36		36		1
10157000	H-B 48 TG 42		42	yes	1
19155000	H-B 48 TG M32	32			1
19156000	H-B 48 TG M40	40			1
19157000	H-B 48 TG M50	50			1
H-B housing: hood (side cable entry, bolts for single lever)					
10158000	H-B 48 TS 29		29	yes	1
10159000	H-B 48 TS 36		36	yes	1
10159200	H-B 48 TS 36		36		1
10160000	H-B 48 TS 42		42	yes	1
19158000	H-B 48 TS M32	32			1
19159000	H-B 48 TS M40	40			1
19160000	H-B 48 TS M50	50			1

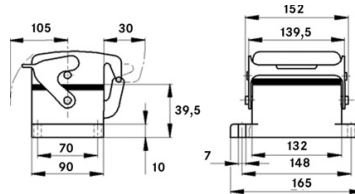
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

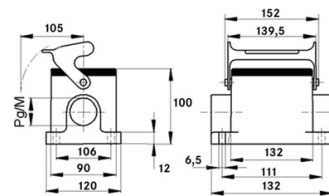
- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717



EPIC® H-B 48 AG-LB



EPIC® H-B 48 AD-LB



EPIC® H-B 48 SGR-LB



Benefits

- The large, robust housing for two inserts in one connector. Power and data in a single connector

Application range

- Plant engineering
- Plastics industry

Product features

- EPIC® H-B 48 AG-LB**
- Panel-mount base
 - Single lever
 - Included: flat gasket

EPIC® H-B 48 AD-LB

- Panel-mount base
- Single lever
- Plastic cover
- Included: flat gasket

EPIC® H-B 48 SGR-LB

- Surface-mount base
- Single lever
- 1 cable entry

Suitable inserts

- The H-B 48 housings can also be assembled with 2 different inserts of size H-B 24
- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

- Material**
Housing: powder-coated aluminium alloy, grey
Lever: zinc-plated steel
Sealing: NBR
- Protection rating**
IP 65 (latched)
- Temperature range**
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	M	PG	Pieces / PU
H-B housing: panel-mount base (single lever)				
10161000	H-B 48 AG-LB			1
H-B housing: panel-mount base (cover, single lever)				
10152000	H-B 48 AD-LB			1
H-B housing: surface-mount base (1 cable entry, single lever)				
10165000	H-B 48 SGR 29		29	1
10165100	H-B 48 SGR 36		36	1
19165000	H-B 48 SGR M32	32		1
19165100	H-B 48 SGR M40	40		1

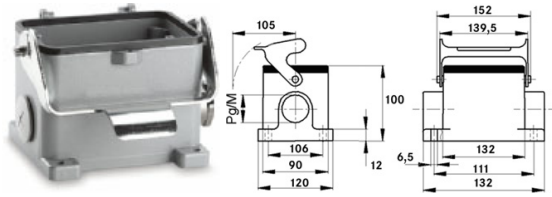
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

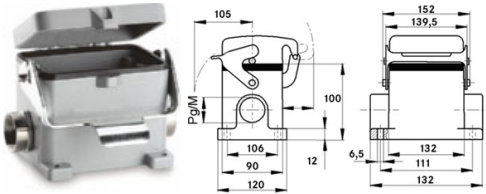
EPIC® H-B 48 SGR-LB

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

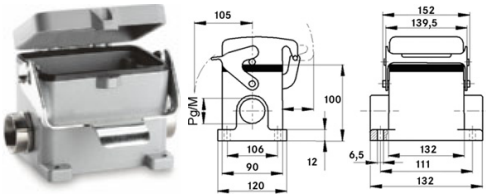
EPIC® H-B 48 SGRL-LB



EPIC® H-B 48 SDR-LB



EPIC® H-B 48 SDRL-LB



Benefits

- The large, robust housing for two inserts in one connector. Power and data in a single connector

Application range

- Plant engineering
- Plastics industry

Product features

EPIC® H-B 48 SGRL-LB

- Surface-mount base
- Single lever
- 2 cable entries

EPIC® H-B 48 SDR-LB

- Surface-mount base
- Single lever
- 1 cable entry
- Plastic cover

EPIC® H-B 48 SDRL-LB

- Surface-mount base
- Single lever
- 2 cable entries
- Plastic cover

Suitable inserts

- The H-B 48 housings can also be assembled with 2 different inserts of size H-B 24
- Refer to Selection Table A 10 to select the required inserts and housings

Technical data

	Material Housing: powder-coated aluminium alloy, grey Lever: zinc-plated steel Sealing: NBR
	Protection rating IP 65 (latched)
	Temperature range -40 °C to +100 °C, short-term up to +125 °C

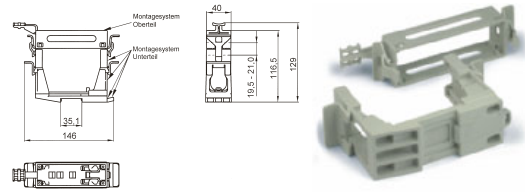
Article number	Article	M	PG	Pieces / PU
H-B housing: surface-mount base (2 cable entries, single lever)				
10166000	H-B 48 SGRL 29		29	1
10166100	H-B 48 SGRL 36		36	1
19166000	H-B 48 SGRL M32	32		1
19166100	H-B 48 SGRL M40	40		1
H-B housing: surface-mount base (cover, 1 cable entry, single lever)				
10167000	H-B 48 SDR 29		29	1
10167100	H-B 48 SDR 36		36	1
19167000	H-B 48 SDR M32	32		1
19167100	H-B 48 SDR M40	40		1
H-B housing: surface-mount base (cover, 2 cable entries, single lever)				
10168000	H-B 48 SDRL 29		29	1
10168100	H-B 48 SDRL 36		36	1
19168000	H-B 48 SDRL M32	32		1
19168100	H-B 48 SDRL M40	40		1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M refer to page 662
- SKINTOP® for industrial connector refer to page 665
- SKINTOP® MS refer to page 717

EPIC® QUICK & EASY Mounting system



Application range

- Accessories for an effective use of EPIC® rectangular connectors

Product features

- For mounting inserts on top-hat rails according to DIN EN 50022
- Available as a complete set or as single parts (top part for use as a cable connector, bottom part for mounting on a top-hat rail)

- QUICK & EASY top parts are available in housing types H-B 6, H-B 10, H-B 16, H-B 24. The suitable size (number of contacts) of the different insert types are listed at the connector housings (H-B 6 ..H-B 24)

Article number	Article	Material	Version	Cycle of mechanical operation	Pieces / PU
QUICK & EASY complete set					
10027000	EPIC® H-B 6 Q+E Set	Polycarbonate	Complete, for inserts size H-B 6	max. 50	1
10027100	EPIC® H-B 10 Q+E Set	Polycarbonate	Complete, for inserts size H-B 10	max. 50	1
10027200	EPIC® H-B 16 Q+E Set	Polycarbonate	Complete, for inserts size H-B 16	max. 50	1
10027300	EPIC® H-B 24 Q+E Set	Polycarbonate	Complete, for inserts size H-B 24	max. 50	1
QUICK & EASY top part					
10027410	EPIC® H-B 6 Q+E top part	Polycarbonate	For inserts size H-B 6	max. 50	10
10027510	EPIC® H-B 10 Q+E top part	Polycarbonate	For inserts size H-B 10	max. 50	10
10027610	EPIC® H-B 16 Q+E top part	Polycarbonate	For inserts size H-B 16	max. 50	10
10027710	EPIC® H-B 24 Q+E top part	Polycarbonate	For inserts size H-B 24	max. 50	10
QUICK & EASY bottom part					
10027810	EPIC® H-B 6-24 Q+E bottom part	Polycarbonate	For inserts size H-B 6 - 24	max. 50	10

Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® QUICK & EASY Accessories



Application range

- Accessories for an effective use of EPIC® rectangular connectors
- This tool is used to lift built-in inserts out of the Q+E frames

Article number	Article	Version	Pieces / PU
QUICK & EASY removal tool			
10028100	QUICK & EASY removal tool		1
QUICK & EASY coding set			
10028000	EPIC® Q+E Coding set	Key pin + coding plug	50

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Flat gaskets for housings H-A und H-B



EPIC® Fixing screws



Application range

- Accessories for an effective use of EPIC® rectangular connectors

Product features

- EPIC® Flat gaskets for housings H-A und H-B**
- Flat gaskets as spare parts for panel-mount base

EPIC® Fixing screws

- Spare parts for fastening inserts in H-A 3 housings

Article number	Article	Pieces / PU
Flat gasket for panel-mount base H-A		
10607100	Flat gasket for panel-mount base H-A 3	10
10607200	Flat gasket for panel-mount base H-A 10	10
10607300	Flat gasket for panel-mount base H-A 16	10
10607600	Flat gasket for panel-mount base H-A 32	10
Flat gasket for panel-mount base H-B		
10051000	Flat gasket for panel-mount base H-B 6	10
10051200	Flat gasket for panel-mount base H-B 10	10
10051400	Flat gasket for panel-mount base H-B 16	10
10051600	Flat gasket for panel-mount base H-B 24	10
10052000	Flat gasket for panel-mount base H-B 32/H-A 48	10
10052200	Flat gasket for panel-mount base H-B 48	10
Fastening screws		
44423017	Screw with O-ring for EPIC H-A 3/4, H-D7/8, H-Q 5	10
44423018	EPIC® STA Screw	10

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Coding parts



Application range

- Accessories for an effective use of EPIC® rectangular connectors

Product features

- For rectangular connector inserts, the key pin replaces one or more fastening screws. This enables simple coding.

- With these inserts, the H-A 3/H-A 4 Codepin is pressed into a socket contact. The corresponding pin contact is removed, meaning one electrical contact will be lost.

Article number	Article	Pieces / PU
H-A 3/4 Codepin		
10451400	EPIC® H-A 3/4 Codepin (50)	50
Key pin		
10019000	EPIC® Key pin (50)	50
Guide pin, guide socket		
11281000	EPIC® Guide socket (50)	50
11280000	EPIC® Guide pin (50)	50

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Protective cover H-A 3



EPIC® Protective cover H-A



EPIC® Protective cover H-B



Product features

EPIC® Protective cover H-A 3

- Protective cover made of thermoplastics and metal for H-A 3 housings

EPIC® Protective cover H-A

- Protective cover made of thermoplastics for H-A 10, H-A 16, H-A 32, H-A 48 housings

EPIC® Protective cover H-B

- Protective cover made of thermoplastics for H-B 6, H-B 10, H-B 16, H-B 24, H-B 32 housings

Article number	Article	Version	Bolts	Securing cord	Clamp	Material	Pieces / PU
For H-A 3 panel-mount base, surface-mount base, cable coupler hood with male or female inserts							
10513000	H-A 3 MDBF-S	for housing H-A 3 with male inserts	2	with cable lug		Metal	10
10513100	H-A 3 MDBF-B	for housing H-A 3 with female inserts	2	with cable lug		Metal	10
For H-A 3 panel-mount base, surface-mount base, cable coupler hood with male inserts							
10430000	H-A 3 KDB-S	for housing H-A 3 with male inserts	2			Plastic	10
10430400	H-A 3 KDBF-S	for housing H-A 3 with male inserts	2	with cable lug		Plastic	10
For H-A 3 panel-mount base, surface-mount base, cable coupler hood with female inserts							
10430300	H-A 3 KDB-B	for housing H-A 3 with female inserts	2			Plastic	10
10430100	H-A 3 KDBF-B	for housing H-A 3 with female inserts	2	with cable lug		Plastic	10
with bolts for H-A 10-32 panel-mount base, surface-mount base, cable coupler hood							
10457700	H-A 10 KDB	for housing H-A 10	2			Plastic	5
10469700	H-A 16 KDB	for housing H-A 16	2			Plastic	5
10481700	H-A 32 KDB	for housing H-A 32	4			Plastic	5
10457500	H-A 10 KDBF	for housing H-A 10	2	with cable lug		Plastic	5
10469500	H-A 16 KDBF	for housing H-A 16	2	with cable lug		Plastic	5
10481500	H-A 32 KDBF	for housing H-A 32	4	with cable lug		Plastic	10
with lever for H-A 10-32 hoods							
10457800	H-A 10 KDT	for H-A 10 hood			2 snap-in hooks	Plastic	5
10469800	H-A 16 KDT	for H-A 16 hood			2 snap-in hooks	Plastic	5
10481800	H-A 32 KDT	for H-A 32 hood			4 snap-in hooks	Plastic	5
10457600	H-A 10 KDTF	for H-A 10 hood		with loop	2 snap-in hooks	Plastic	5
10469600	H-A 16 KDTF	for H-A 16 hood		with loop	2 snap-in hooks	Plastic	5
10481600	H-A 32 KDT	for H-A 32 hood		with loop	4 snap-in hooks	Plastic	10
with bolts for H-B 6-24 panel-mount base, surface-mount base, cable coupler hood							
10015000	H-B 6 KDB	for housing H-B 6	2	with cable lug		Plastic	10
10047000	H-B 10 KDB	for housing H-B 10	4	with cable lug		Plastic	10
10087000	H-B 16 KDB	for housing H-B 16	4	with cable lug		Plastic	5
10118000	H-B 24 KDB	for housing H-B 24	4	with cable lug		Plastic	5
with lever for H-B 6-24 hood with bolts							
10016500	H-B 6 KDT	for H-B 6 hood		with loop	2 snap-in hooks	Plastic	10
10048500	H-B 10 KDT	for H-B 10 hood		with loop	4 snap-in hooks	Plastic	10
10088500	H-B 16 KDT	for H-B 16 hood		with loop	4 snap-in hooks	Plastic	5
10119500	H-B 24 KDT	for H-B 24 hood		with loop	4 snap-in hooks	Plastic	5
with bolts for H-B 6-24 hoods with levers							
10015100	H-B 6 KDBP	for H-B 6 hood	2	with loop		Plastic	10
10047100	H-B 10 KDBP	for H-B 10 hood	4	with loop		Plastic	10
10087100	H-B 16 KDBP	for H-B 16 hood	4	with loop		Plastic	10
10118100	H-B 24 KDBP	for H-B 24 hood	4	with loop		Plastic	5
with bolts for H-B 10-32 panel-mount base, surface-mount base, cable coupler hood							
10048700	H-B 10 KDBF	for housing H-B 10	2	with loop		Plastic	10
10088700	H-B 16 KDBF	for housing H-B 16	2	with loop		Plastic	10
10118700	H-B 24 KDBF	for housing H-B 24	2	with loop		Plastic	10
10118020	H-B 32 / H-A 48 KDBF	for housing H-B 32/H-A 48	4	with loop		Plastic	10
with lever for H-B 10-24 hood with bolts							
10048600	H-B 10 KDTF	for H-B 10 hood		with loop	2 snap-in hooks	Plastic	10
10088600	H-B 16 KDTF	for H-B 16 hood		with loop	2 snap-in hooks	Plastic	10
10118600	H-B 24 KDTF	for H-B 24 hood		with loop	2 snap-in hooks	Plastic	10

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® Cover plates



EPIC® Adapter plates for 1 D-Sub insert



EPIC® Adapter plates for 2 D-Sub inserts



EPIC® Locking levers



Product features

EPIC® Cover plates

- For coverage of panel cut-outs for panel-mount base housings type H-B

EPIC® Adapter plates for 1 D-Sub insert

- For use of D-Sub inserts in H-B housings

EPIC® Adapter plates for 2 D-Sub inserts

- For use of D-Sub inserts in H-B housings

EPIC® Locking levers

- Locking levers as spare parts for H-A and H-B housings

Article number	Article	Version	Material	Pieces / PU
Cover plates for mounting cut-out H-B				
10018920	H-B 6	for H-B 6 panel-mount base housing		10
10018921	H-B 10	for H-B 10 panel-mount base housing		10
10018922	H-B 16	for H-B 16 panel-mount base housing		10
10018923	H-B 24	for H-B 24 panel-mount base housing		10
Adapter plates for 1 D-Sub insert				
11764200	H-B 6 / M-D 9	for 1 x D-Sub 9-pin		10
11764202	H-B 6 / M-D 15	for 1 x D-Sub 15-pin		10
11764300	H-B 10 / M-D 25	for 1 x D-Sub 25-pin		10
11764400	H-B 16 / M-D 25	for 1 x D-Sub 25-pin		10
Adapter plates for 2 D-Sub inserts				
11764201	H-B 6 / 2xM-D 9	for 2 x D-Sub 9-pin		10
11764203	H-B 6 / 2xM-D 15	for 2 x D-Sub 15-pin		10
11764301	H-B 10 / 2xM-D 25	for 2 x D-Sub 25-pin		10
Single and double levers for H-A and H-B housings				
10458000	H-A 10 LB	single lever for H-A 10 housing	Steel	10
10468000	EPIC H-A 16 LB/H-B 32 QB	single lever for H-A 16 housing	Steel	10
10049000	H-B 10-24 QB	double lever for H-B 10 - 24 housing	Steel	10
10017000	H-B 6 LB	single lever for H-B 6 housing	Steel	10
10017100	H-B 6 LB-K	single lever for H-B 6 housing	Stainless steel	10
10049100	H-B 10-24 QB-K	double lever for H-B 10 - 24 housing	Stainless steel	10

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® H-A 3 Kits Thermoplastic

■ EPIC KIT H-A 3 SS TG M20



- EPIC® H-A 3 screw-termination male insert
- EPIC® H-A 3 hood
- Housing: thermoplastic grey

Article number	Pieces / PU
75009601	1

■ Article numbers for single components

- H-A 3 SS 10420000 (Page 450)
- H-A 3 Tgv M20 19426000 (Page 497)



■ EPIC KIT H-A 3 SS TS M20



- EPIC® H-A 3 screw-termination male insert
- EPIC® H-A 3 hood
- Side cable entry
- Housing: thermoplastic grey

Article number	Pieces / PU
75009603	1

■ Article numbers for single components

- H-A 3 SS 10420000 (Page 450)
- H-A 3 Ts M20 19427000 (Page 498)



■ EPIC KIT H-A 3 BS AG



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Straight version
- Housing: thermoplastic grey

Article number	Pieces / PU
75009605	1

■ Article numbers for single components

- H-A 3 BS 10421000 (Page 450)
- H-A 3 Ag 10422000 (Page 499)



■ EPIC KIT H-A 3 BS AGS

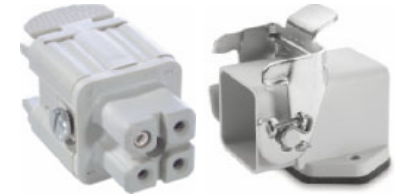


- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: thermoplastic grey

Article number	Pieces / PU
75009607	1

■ Article numbers for single components

- H-A 3 BS 10421000 (Page 450)
- H-A 3 Ags 10423000 (Page 499)



■ EPIC KIT H-A 3 BS AGS M20



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: thermoplastic grey

Article number	Pieces / PU
75009609	1

■ Article numbers for single components

- H-A 3 BS 10421000 (Page 450)
- H-A 3 Agsv M20 19421900 (Page 500)



■ EPIC KIT H-A 3 BS TGB M20



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 cable coupler hood
- Housing: thermoplastic grey

Article number	Pieces / PU
75009611	1

■ Article numbers for single components

- H-A 3 BS 10421000 (Page 450)
- H-A 3 Tgvb M20 19429000 (Page 501)



Info

- Complete connectors - easy to order

■ Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

■ Similar products

- EPIC® H-A 3 Kits Metal refer to page 584

■ Technical data

Rated voltage (V)

- IEC: 400 V
- UL: 600 V
- CSA: 600 V

Rated current (A)

- IEC: 23 A
- UL: 10 A
- CSA: 10 A

- Number of contacts**
3 + PE

EPIC® H-A 3 Kits Metal



Article number	Pieces / PU
75009602	1

Article numbers for single components

- H-A 3 SS 10420000 (Page 450)
- H-A 3 MTgv M20 19512100 (Page 497)

EPIC KIT H-A 3 SS MTG M20



- EPIC® H-A 3 screw-termination male insert
- EPIC® H-A 3 hood
- Housing: zinc die-casting, grey



Article number	Pieces / PU
75009604	1

Article numbers for single components

- H-A 3 SS 10420000 (Page 450)
- H-A 3 Ts M20 19512300 (Page 498)

EPIC KIT H-A 3 SS MTS M20



- EPIC® H-A 3 screw-termination male insert
- EPIC® H-A 3 hood
- Side cable entry
- Housing: zinc die-casting, grey



Article number	Pieces / PU
75009606	1

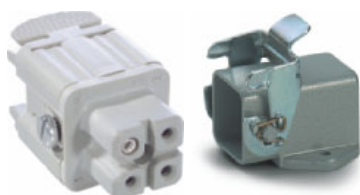
Article numbers for single components

- H-A 3 BS 10421000 (Page 450)
- H-A 3 Mag 10422500 (Page 499)

EPIC KIT H-A 3 BS MAG



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Straight version
- Housing: zinc die-casting, grey



Article number	Pieces / PU
75009608	1

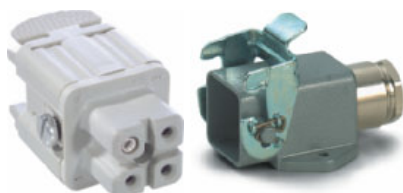
Article numbers for single components

- H-A 3 BS 10421000 (Page 450)
- H-A 3 Mags 10423500 (Page 499)

EPIC KIT H-A 3 BS MAGS



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: zinc die-casting, grey



Article number	Pieces / PU
75009610	1

Article numbers for single components

- H-A 3 BS 10421000 (Page 450)
- H-A 3 MAgsv M20 19512700 (Page 500)

EPIC KIT H-A 3 BS MAGS M20



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: zinc die-casting, grey



Article number	Pieces / PU
75009612	1

Article numbers for single components

- H-A 3 BS 10421000 (Page 450)
- H-A 3 MTgvb M20 19512900 (Page 501)

EPIC KIT H-A 3 BS MTGB M20



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 cable coupler hood
- Housing: zinc die-casting, grey



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Similar products

- EPIC® H-A 3 Kits Thermoplastic refer to page 583

Technical data

Rated voltage (V)

- IEC: 400 V
- UL: 600 V
- CSA: 600 V

Rated current (A)

- IEC: 23 A
- UL: 10 A
- CSA: 10 A

Number of contacts

3 + PE

EPIC® H-A 4 Kits Thermoplastic

■ EPIC KIT H-A 4 SS TG M20



- EPIC® H-A 4 screw-termination male insert
- EPIC® H-A 3 hood
- Straight cable entry
- Housing: thermoplastic grey

Article number	Pieces / PU
75009613	1

■ Article numbers for single components

- H-A 4 SS 10431000 (Page 450)
- H-A 3 Tgv M20 19426000 (Page 497)



■ EPIC KIT H-A 4 SS TS M20



- EPIC® H-A 4 screw-termination male insert
- EPIC® H-A 3 hood
- Side cable entry
- Housing: thermoplastic grey

Article number	Pieces / PU
75009615	1

■ Article numbers for single components

- H-A 4 SS 10431000 (Page 450)
- H-A 3 Ts M20 19427000 (Page 498)



■ EPIC KIT H-A 4 BS AG



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Straight version
- Housing: thermoplastic grey

Article number	Pieces / PU
75009617	1

■ Article numbers for single components

- H-A 4 BS 10432000 (Page 450)
- H-A 3 Ag 10422000 (Page 499)



■ EPIC KIT H-A 4 BS AGS

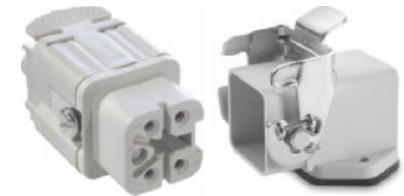


- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: thermoplastic grey

Article number	Pieces / PU
75009619	1

■ Article numbers for single components

- H-A 4 BS 10432000 (Page 450)
- H-A 3 Ags 10423000 (Page 499)



■ EPIC KIT H-A 4 BS AGS M20



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: thermoplastic grey

Article number	Pieces / PU
75009621	1

■ Article numbers for single components

- H-A 4 BS 10432000 (Page 450)
- H-A 3 Agsv M20 19421900 (Page 500)



■ EPIC KIT H-A 4 BS TGB M20



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 cable coupler hood
- Straight cable entry
- Housing: thermoplastic grey

Article number	Pieces / PU
75009623	1

■ Article numbers for single components

- H-A 4 BS 10432000 (Page 450)
- H-A 3 Tgvb M20 19429000 (Page 501)



Info

- Complete connectors - easy to order

■ Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

■ Similar products

- EPIC® H-A 4 Kits Metal refer to page 586

■ Technical data

Rated voltage (V)

- IEC: 400 V
- UL: 600 V
- CSA: 600 V

Rated current (A)

- IEC: 23 A
- UL: 10 A
- CSA: 10 A

- Number of contacts**
- 4 + PE

EPIC® H-A 4 Kits Metal



Article number	Pieces / PU
75009614	1

Article numbers for single components

- H-A 4 SS 10431000 (Page 450)
- H-A 3 MTgv M20 19512100 (Page 497)

EPIC KIT H-A 4 SS MTG M20



- EPIC® H-A 4 screw-termination male insert
- EPIC® H-A 3 hood
- Straight cable entry
- Housing: zinc die-casting, grey



Article number	Pieces / PU
75009616	1

Article numbers for single components

- H-A 4 SS 10431000 (Page 450)
- H-A 3 Ts M20 19512300 (Page 498)

EPIC KIT H-A 4 SS MTS M20



- EPIC® H-A 4 screw-termination male insert
- EPIC® H-A 3 hood
- Side cable entry
- Housing: zinc die-casting, grey



Article number	Pieces / PU
75009618	1

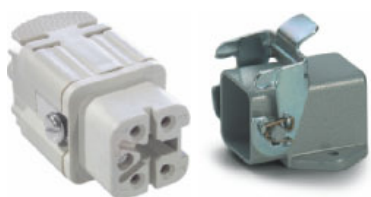
Article numbers for single components

- H-A 4 BS 10432000 (Page 450)
- H-A 3 Mag 10422500 (Page 499)

EPIC KIT H-A 4 BS MAG



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Straight version
- Housing: zinc die-casting, grey



Article number	Pieces / PU
75009620	1

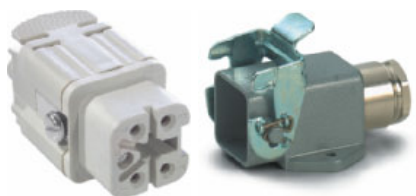
Article numbers for single components

- H-A 4 BS 10432000 (Page 450)
- H-A 3 Mags 10423500 (Page 499)

EPIC KIT H-A 4 BS MAGS



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: zinc die-casting, grey



Article number	Pieces / PU
75009622	1

Article numbers for single components

- H-A 4 BS 10432000 (Page 450)
- H-A 3 MAGsv M20 19512700 (Page 500)

EPIC KIT H-A 4 BS MAGS M20



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: zinc die-casting, grey



Article number	Pieces / PU
75009624	1

Article numbers for single components

- H-A 4 BS 10432000 (Page 450)
- H-A 3 MTgvb M20 19512900 (Page 501)

EPIC KIT H-A 4 BS TGB M20



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 cable coupler hood
- Straight cable entry
- Housing: zinc die-casting, grey



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Similar products

- EPIC® H-A 4 Kits Thermoplastic refer to page 585

Technical data

Rated voltage (V)

IEC: 400 V
UL: 600 V
CSA: 600 V

Rated current (A)

IEC: 23 A
UL: 10 A
CSA: 10 A

Number of contacts

4 + PE

EPIC® H-A 10 Kits

EPIC KIT H-A 10 SS TG M20



- EPIC® H-A 10 screw-termination male insert
- With wire protection
- EPIC® H-A 10 hood

Article number	Pieces / PU
75009625	1

Article numbers for single components

- H-A 10 SS 10440100 (Page 451)
- H-A 10 TG M20 19446000 (Page 502)



EPIC KIT H-A 10 SS TS M20



- EPIC® H-A 10 screw-termination male insert
- With wire protection
- EPIC® H-A 10 hood

Article number	Pieces / PU
75009626	1

Article numbers for single components

- H-A 10 SS 10440100 (Page 451)
- H-A 10 TS M20 19445000 (Page 503)



EPIC KIT H-A 10 BS AG



- EPIC® H-A 10 screw termination female insert
- With wire protection
- EPIC® H-A 10 panel-mount base

Article number	Pieces / PU
75009627	1

Article numbers for single components

- H-A 10 BS 10441100 (Page 451)
- H-A 10 AG-LB 10442000 (Page 504)



EPIC KIT H-A 10 BS SGR-LB M20



- EPIC® H-A 10 screw termination female insert
- With wire protection
- EPIC® H-A 10 surface-mount base

Article number	Pieces / PU
75009628	1

Article numbers for single components

- H-A 10 BS 10441100 (Page 451)
- H-A 10 SGR-LB M20 19448100 (Page 505)



EPIC KIT H-A 10 BS TBF-LB M20



- EPIC® H-A 10 screw termination female insert
- With wire protection
- EPIC® H-A 10 cable coupler hood

Article number	Pieces / PU
75009629	1

Article numbers for single components

- H-A 10 BS 10441100 (Page 451)
- H-A 10 TBF-LB M20 19439000 (Page 507)



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Technical data

Rated voltage (V)

- IEC: 250 V
- UL: 600 V
- CSA: 600 V

Rated current (A)

- IEC: 16 A
- UL: 14 A
- CSA: 16 A

Number of contacts

10 + PE

EPIC® H-A 16 Kits



Article number	Pieces / PU
75009630	1

Article numbers for single components

- H-A 16 SS 10530000 (Page 451)
- H-A 16 TG M20 19565000 (Page 508)

EPIC KIT H-A 16 SS TG M20



- EPIC® H-A 16 screw-termination male insert
- With wire protection
- EPIC® H-A 16 hood



Article number	Pieces / PU
75009631	1

Article numbers for single components

- H-A 16 SS 10530000 (Page 451)
- H-A 16 TS M20 19564000 (Page 509)

EPIC KIT H-A 16 SS TS M20



- EPIC® H-A 16 screw-termination male insert
- With wire protection
- EPIC® H-A 16 hood



Article number	Pieces / PU
75009632	1

Article numbers for single components

- H-A 16 BS 10531000 (Page 451)
- H-A 16 AG-LB 10462000 (Page 510)

EPIC KIT H-A 16 BS AG



- EPIC® H-A 16 screw termination female insert
- With wire protection
- EPIC® H-A 16 panel-mount base



Article number	Pieces / PU
75009633	1

Article numbers for single components

- H-A 16 BS 10531000 (Page 451)
- H-A 16 SGR-LB M20 19567100 (Page 511)

EPIC KIT H-A 16 BS SGR-LB M20



- EPIC® H-A 16 screw termination female insert
- With wire protection
- EPIC® H-A 16 surface-mount base



Article number	Pieces / PU
75009634	1

Article numbers for single components

- H-A 16 BS 10531000 (Page 451)
- H-A 16 TBF-LB M20 19563000 (Page 513)

EPIC KIT H-A 16 BS TBF-LB M20



- EPIC® H-A 16 screw termination female insert
- With wire protection
- EPIC® H-A 16 cable coupler hood



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Technical data

Rated voltage (V)

IEC: 250 V
UL: 600 V
CSA: 600 V

Rated current (A)

IEC: 16 A
UL: 14 A
CSA: 16 A

Number of contacts

16 + PE

EPIC® H-BE 6 Kits

EPIC KIT H-BE 6 SS TG M20



- EPIC® H-BE 6 screw-termination male insert
- With wire protection
- EPIC® H-B 6 hood

Article number	Pieces / PU
75009635	1

Article numbers for single components

- H-BE 6 SS 10190000 (Page 465)
- H-B 6 TG M20 19011000 (Page 526)



EPIC KIT H-BE 6 SS TS M20



- EPIC® H-BE 6 screw-termination male insert
- With wire protection
- EPIC® H-B 6 hood

Article number	Pieces / PU
75009636	1

Article numbers for single components

- H-BE 6 SS 10190000 (Page 465)
- H-B 6 TS M20 19012000 (Page 526)



EPIC KIT H-BE 6 BS AG-LB



- EPIC® H-BE 6 screw termination female insert
- With wire protection
- EPIC® H-B 6 panel-mount base

Article number	Pieces / PU
75009637	1

Article numbers for single components

- H-BE 6 BS 10191000 (Page 465)
- H-B 6 AG-LB 10003000 (Page 527)



EPIC KIT H-BE 6 BS SGR-LB M20

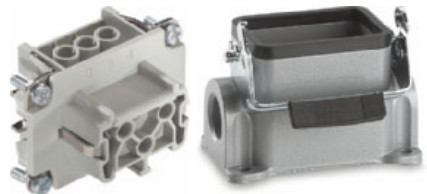


- EPIC® H-BE 6 screw termination female insert
- With wire protection
- EPIC® H-B 6 surface-mount base

Article number	Pieces / PU
75009638	1

Article numbers for single components

- H-BE 6 BS 10191000 (Page 465)
- H-B 6 SGR M20 19005000 (Page 528)



EPIC KIT H-BE 6 BS TBF-LB M20



- EPIC® H-BE 6 screw termination female insert
- With wire protection
- EPIC® H-B 6 cable coupler hood

Article number	Pieces / PU
75009639	1

Article numbers for single components

- H-BE 6 BS 10191000 (Page 465)
- H-B 6 TBF M20 19014000 (Page 531)



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Technical data

Rated voltage (V)

- IEC: 500 V
- UL: 600 V
- CSA: 600 V

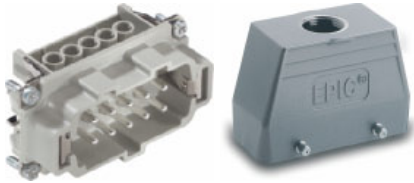
Rated current (A)

- IEC: 16 A
- UL: 16 A
- CSA: 16 A

Number of contacts

6 + PE

EPIC® H-BE 10 Kits



Article number	Pieces / PU
75009640	1

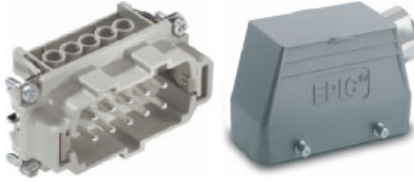
Article numbers for single components

- H-BE 10 SS 10192000 (Page 466)
- H-B 10 TG M25 19040100 (Page 533)

EPIC KIT H-BE 10 SS TG M25



- EPIC® H-BE 10 screw-termination male insert
- With wire protection
- EPIC® H-B 10 hood



Article number	Pieces / PU
75009641	1

Article numbers for single components

- H-BE 10 SS 10192000 (Page 466)
- H-B 10 TS M25 19042100 (Page 534)

EPIC KIT H-BE 10 SS TS M25



- EPIC® H-BE 10 screw-termination male insert
- With wire protection
- EPIC® H-B 10 hood



Article number	Pieces / PU
75009642	1

Article numbers for single components

- H-BE 10 BS 10193000 (Page 466)
- H-B 10 AG 10032000 (Page 536)

EPIC KIT H-BE 10 BS AG



- EPIC® H-BE 10 screw termination female insert
- With wire protection
- EPIC® H-B 10 panel-mount base



Article number	Pieces / PU
75009643	1

Article numbers for single components

- H-BE 10 BS 10193000 (Page 466)
- H-B 10 SGR M25 19034100 (Page 540)

EPIC KIT H-BE 10 BS SGR M25



- EPIC® H-BE 10 screw termination female insert
- With wire protection
- EPIC® H-B 10 surface-mount base



Article number	Pieces / PU
75009644	1

Article numbers for single components

- H-BE 10 BS 10193000 (Page 466)
- H-B 10 TBF M25 79040200 (Page 543)

EPIC KIT H-BE 10 BS TBF M25



- EPIC® H-BE 10 screw termination female insert
- With wire protection
- EPIC® H-B 10 cable coupler hood



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Technical data

Rated voltage (V)

- IEC: 500 V
- UL: 600 V
- CSA: 600 V

Rated current (A)

- IEC: 16 A
- UL: 16 A
- CSA: 16 A

Number of contacts

10 + PE

EPIC® H-BE 16 Kits

EPIC KIT H-BE 16 SS TG M25



- EPIC® H-BE 16 screw termination female insert
- With wire protection
- EPIC® H-B 16 hood

Article number	Pieces / PU
75009645	1

Article numbers for single components

- H-BE 16 SS 10194000 (Page 467)
- H-B 16 TG M25 19080000 (Page 546)



EPIC KIT H-BE 16 SS TS M25

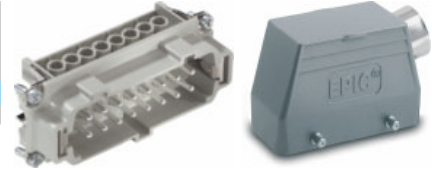


- EPIC® H-BE 16 screw termination female insert
- With wire protection
- EPIC® H-B 16 hood

Article number	Pieces / PU
75009646	1

Article numbers for single components

- H-BE 16 SS 10194000 (Page 467)
- H-B 16 TS M25 19082000 (Page 548)



EPIC KIT H-BE 16 BS AG



- EPIC® H-BE 16 screw termination female insert
- With wire protection
- EPIC® H-B 16 panel-mount base

Article number	Pieces / PU
75009647	1

Article numbers for single components

- H-BE 16 BS 10195000 (Page 467)
- H-B 16 AG 10072000 (Page 550)



EPIC KIT H-BE 16 BS SGR M25



- EPIC® H-BE 16 screw termination female insert
- With wire protection
- EPIC® H-B 16 surface-mount base

Article number	Pieces / PU
75009648	1

Article numbers for single components

- H-BE 16 BS 10195000 (Page 467)
- H-B 16 SGR M25 19074000 (Page 554)



EPIC KIT H-BE 16 BS TBF M25



- EPIC® H-BE 24 screw termination female insert
- With wire protection
- EPIC® H-B 16 cable coupler hood

Article number	Pieces / PU
75009649	1

Article numbers for single components

- H-BE 16 BS 10195000 (Page 467)
- H-B 16 TBF M25 19086000 (Page 557)



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Technical data

Rated voltage (V)

- IEC: 500 V
- UL: 600 V
- CSA: 600 V

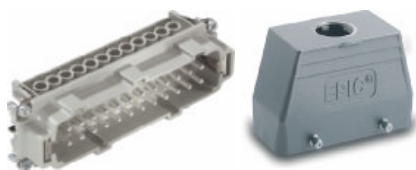
Rated current (A)

- IEC: 16 A
- UL: 16 A
- CSA: 16 A

Number of contacts

16 + PE

EPIC® H-BE 24 Kits



Article number	Pieces / PU
75009650	1

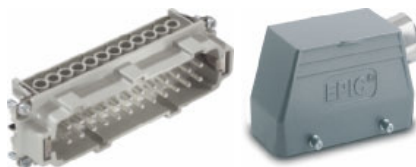
Article numbers for single components

- H-BE 24 SS 10196000 (Page 468)
- H-B 24 TG M25 19121000 (Page 560)

EPIC KIT H-BE 24 SS TG M25



- EPIC® H-BE 24 screw-termination male insert
- With wire protection
- EPIC® H-B 24 hood



Article number	Pieces / PU
75009651	1

Article numbers for single components

- H-BE 24 SS 10196000 (Page 468)
- H-B 24 TS M25 19113000 (Page 562)

EPIC KIT H-BE 24 SS TS M25



- EPIC® H-BE 24 screw-termination male insert
- With wire protection
- EPIC® H-B 24 hood



Article number	Pieces / PU
75009652	1

Article numbers for single components

- H-BE 24 BS 10197000 (Page 468)
- H-B 24 AG 10102000 (Page 564)

EPIC KIT H-BE 24 BS AG



- EPIC® H-BE 24 screw termination female insert
- With wire protection
- EPIC® H-B 24 panel-mount base



Article number	Pieces / PU
75009653	1

Article numbers for single components

- H-BE 24 BS 10197000 (Page 468)
- H-B 24 SGR M25 19104000 (Page 568)

EPIC KIT H-BE 24 BS SGR M25



- EPIC® H-BE 24 screw termination female insert
- With wire protection
- EPIC® H-B 24 surface-mount base



Article number	Pieces / PU
75009654	1

Article numbers for single components

- H-BE 24 BS 10197000 (Page 468)
- H-B 24 TBF M25 19127000 (Page 571)

EPIC KIT H-BE 24 BS TBF M25



- EPIC® H-BE 24 screw termination female insert
- With wire protection
- EPIC® H-B 24 cable coupler hood



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Number of contacts

24 + PE



Info

- 4 power contacts + 2 signal contacts



New

EPIC® H-Q 4+2



New

EPIC® H-Q 8



New

EPIC® H-Q 17



Suitable housing:

- EPIC® Q Hood Plastic Page 594
- EPIC® H-Q Panel Base Plastic Page 594
- EPIC® H-Q Panel Base angled Plastic Page 594
- EPIC® H-Q Surface Mount Base Plastic Page 595
- EPIC® H-Q Cable Coupler Plastic Page 595
- EPIC® H-Q Hood Metal Page 595
- EPIC® H-Q Panel Base Metal Page 595

Suitable contacts:

- **EPIC® H-Q 4+2**
 - EPIC® H-Q Contacts Page 496
 - EPIC® H-D 1.6 machined contacts Page 487
- **EPIC® H-Q 8**
 - EPIC® H-BE 2.5 machined contacts Page 490
- **EPIC® H-Q 17**
 - EPIC® H-D 1.6 machined contacts Page 487

Benefits

- Insert suitable for plastic and metal housings
- Space-saving

Application range

- Servo and power drive systems
- Mechanical engineering
- Plant engineering

Technical data

Rated voltage (V)

- **EPIC® H-Q 4+2**
IEC: 400/690 V (H-Q contacts)
UL: 600 V (H-Q contacts)
CSA: 600 V (H-Q contacts)
- **EPIC® H-Q 8**
IEC: 500 V
UL: 600 V
CSA: 600 V
- **EPIC® H-Q 17**
IEC: 250 V
UL: 600 V
CSA: 600 V

Rated impulse voltage

- **EPIC® H-Q 4+2**
6kV (H-Q contacts)
4kV (H-D contacts)
- **EPIC® H-Q 8**
6 kV
- **EPIC® H-Q 17**
4 kV

Rated current (A)

- **EPIC® H-Q 4+2**
IEC: 40 A (H-Q contacts)
10 A (H-D contacts)
- **EPIC® H-Q 8**
IEC: 16 A
UL: 16 A
CSA: 16 A
- **EPIC® H-Q 17**
max. 10 A

Degree of soiling

- **EPIC® H-Q 4+2**
3
- **EPIC® H-Q 8**
3
- **EPIC® H-Q 17**
2

Contact resistance

- **EPIC® H-Q 4+2**
< 4 mOhm
- **EPIC® H-Q 8**
< 2 mOhm
- **EPIC® H-Q 17**
< 2 mOhm

Contacts

- **EPIC® H-Q 4+2**
Copper alloy, hard silver-plated
- **EPIC® H-Q 8**
Copper alloy, hard silver-plated
- **EPIC® H-Q 17**
Copper alloy, hard silver/gold-plated

Number of contacts

- **EPIC® H-Q 4+2**
4 + 2 + PE
- **EPIC® H-Q 8**
8 + PE
- **EPIC® H-Q 17**
17 + PE

Termination methods

- **EPIC® H-Q 4+2**
Crimp termination: 1.5 - 6.0 mm² (H-Q contacts)
0.14 - 2.5 mm² (H-D contacts)
- **EPIC® H-Q 8**
Crimp termination: 0.5 - 4.0 mm²
- **EPIC® H-Q 17**
Crimp termination: 0.14 - 2.5 mm²

Cycle of mechanical operation

500



- **Temperature range**
-40 °C to +125 °C

Article number	Article	Version	Article designation	Contacts	Pieces / PU
H-Q 4+2 crimp termination					
44420511	H-Q 4+2 SCM	male	machined	4 + 2	1
44420510	H-Q 4+2 BCM	female	machined	4 + 2	1
H-Q 8 crimp termination					
44420527	H-Q 8 SCM	male	machined	1 - 8	1
44420526	H-Q 8 BCM	female	machined	1 - 8	1
H-Q 17 crimp termination					
44420525	H-Q 17 SCM	male	machined	1 - 17	1
44420524	H-Q 17 BCM	female	machined	1 - 17	1

Photographs are not to scale and do not represent detailed images of the respective products.

For current information see: www.lappgroup.com

New

EPIC® Q Hood Plastic



New

EPIC® H-Q Panel Base Plastic



EPIC® H-Q Panel Base angled Plastic



Benefits

- Housing in plastic or metal version. For power supply in the smallest possible space
- Neck for cable gland integrated, use with special H-Q cable glands
- With metal housing EMC cable gland as an option

Application range

EPIC® Q Hood Plastic

- Plastic housings for standard applications
- Metal housings for increased environmental requirements

Technical data



Material
Housing: thermoplastic, grey
Lever: metal



Protection rating
IP 66



Temperature range
-40°C to +125°C

Article number	Article	M	Pieces / PU
H-Q housings – hoods (straight cable entry)			
44420530	H-Q.TG V16P	V16P	1
H-Q Housing Hood (Cable Entry side)			
44420531	H-Q.TS V16P	V16P	1
H-Q housings – panel-mount base housings			
44420528	H-Q.AG P		1
H-Q housings – angled panel-mount base housings			
44420529	H-Q.WAG P		1

Photographs are not to scale and do not represent detailed images of the respective products.

New

EPIC® H-Q Surface Mount Base Plastic



New

EPIC® H-Q Cable Coupler Plastic



Benefits

- Housing in plastic or metal version. For power supply in the smallest possible space
- Neck for cable gland integrated, use with special H-Q cable glands
- With metal housing EMC cable gland as an option

Technical data



Material
Housing: thermoplastic, grey
Lever: metal



Protection rating
IP 66



Temperature range
-40 °C to +125 °C

Article number	Article	M	Pieces / PU
H-Q housings – surface-mount bases (1 cable entry)			
44420532	H-Q SGR V16P	V16P	1
H-Q housings – cable coupler hoods (straight cable entry)			
44420533	H-Q KG V16P	V16P	1

Photographs are not to scale and do not represent detailed images of the respective products.

New

EPIC® H-Q Hood Metal



New

EPIC® H-Q Panel Base Metal



Benefits

- Housing in plastic or metal version. For power supply in the smallest possible space
- Neck for cable gland integrated, use with special H-Q cable glands
- With metal housing EMC cable gland as an option

Technical data



Material
Housing: zinc die-casting



Temperature range
-40 °C to +125 °C



Protection rating
IP 66

Article number	Article	M	Pieces / PU
H-Q Housing Hood (Cable Entry side)			
44420540	H-Q TS V21M	V21M	1
H-Q housings – hoods (straight cable entry)			
44420539	H-Q TG V21M	V21M	1
H-Q housings – panel-mount base housings			
44420538	H-Q AG M	V21M	1

Photographs are not to scale and do not represent detailed images of the respective products.

Rectangular connectors

EPIC® H-Q contacts, tools, accessories

New

EPIC® H-Q Contacts



New

EPIC® H-Q Cable Glands



New

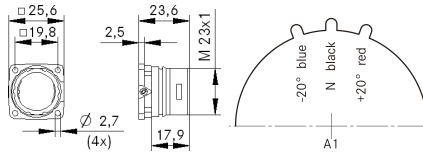
EPIC® H-Q Accessories



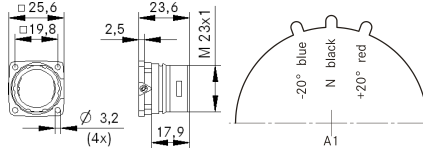
Article number	Article	Version	Version	Cross-section (mm ²)	Surface	Stripping length (mm)	Pieces / PU
Contacts							
44420512	EPIC H-Q 4.0 machined		male	1.5	Ag	8.0	25
44420513	EPIC H-Q 4.0 machined		male	2.5	Ag	8.0	25
44420514	EPIC H-Q 4.0 machined		male	4.0	Ag	8.0	25
44420515	EPIC H-Q 4.0 machined		male	6.0	Ag	8.0	25
44420516	EPIC H-Q 4.0 machined		female	1.5	Ag	8.0	25
44420517	EPIC H-Q 4.0 machined		female	2.5	Ag	8.0	25
44420518	EPIC H-Q 4.0 machined		female	4.0	Ag	8.0	25
44420519	EPIC H-Q 4.0 machined		female	6.0	Ag	8.0	25
H-Q cable glands for V16P housings (plastic housings)							
44420537	EPIC H-Q Cable gland	9-13mm					1
44420536	EPIC H-Q Cable gland	11.5 - 15.5mm					1
H-Q cable glands for V21M housings (metal housings)							
44420541	EPIC H-Q Cable gland	9-13mm					1
44420542	EPIC H-Q Cable gland	11.5 - 15.5mm					1
44420543	EPIC H-Q Cable gland	14 - 18mm					1
H-Q EMC cable gland for V21M housings (metal housings)							
44420544	EPIC H-Q cable gland EMC	11.5 - 15.5mm					1
44420545	EPIC H-Q cable gland EMC	14 - 18mm					1
44420534	EPIC H-Q dust cap	for housing H-Q with female insert					1
44420535	EPIC H-Q dust cap	for housing H-Q with male insert					1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



EPIC® M23 A1

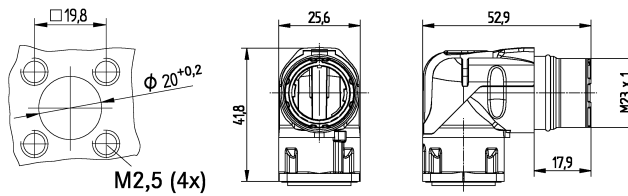


EPIC® M23 A1 D3,2



Info

- Range of rotation: 330° in 15° increments



EPIC® M23 A3



Benefits

- Housings are very flexible - cable connectors with wide clamping range, receptacle housings for assembling the inserts from the front and rear

Application range

- Plant engineering
- Servo drives and servo assemblies
- Measurement and control technology

Product features

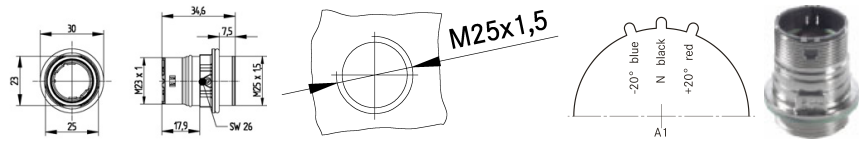
- EPIC® M23 A1**
 - Panel-mount base, straight entry
 - Front wall-mounting
- EPIC® M23 A1 D3,2**
 - Panel-mount base, straight entry
 - Front wall-mounting
- EPIC® M23 A3**
 - Panel-mount base, angled, rotatable
 - Front wall-mounting

Technical data

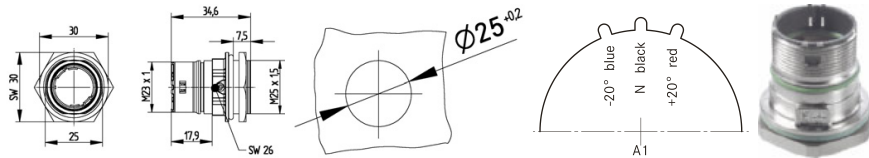
- Material**
Housing: nickel-plated zinc die-casting
Sealing: FPM
- IP**
Protection rating
IP68 (10h / 1m)
- Temperature range**
-25°C - +125°C
- VDE-tested**
EPIC® M23 A1
Certified production control: VDE-REG. no. 24
EPIC® M23 A1 D3,2
Certified production control: VDE-REG. no. 24

Article number	Article	Coding	Fastening type	Pieces / PU
Type M23 A1 panel-mount box, front wall mounting				
72004000	M23 A1	black (N)	Ø 2.7 mm (4x)	5
72004010	M23 A1	black (N)	Ø 2.7 mm (4x)	20
72004200	M23 A1	red (+20°)	Ø 2.7 mm (4x)	5
72004210	M23 A1	red (+20°)	Ø 2.7 mm (4x)	20
72004100	M23 A1	blue (-20°)	Ø 2.7 mm (4x)	5
72004110	M23 A1	blue (-20°)	Ø 2.7 mm (4x)	20
Type M23 A1 D3.2 panel-mount box, front wall mounting				
44420018	M23 A1 D3,2	black (N)	Ø 3.2 mm (4x)	5
44420017	M23 A1 D3,2	black (N)	Ø 3.2 mm (4x)	20
44420020	M23 A1 D3,2	red (+20°)	Ø 3.2 mm (4x)	5
44420019	M23 A1 D3,2	red (+20°)	Ø 3.2 mm (4x)	20
44420016	M23 A1 D3,2	blue (-20°)	Ø 3.2 mm (4x)	5
44420015	M23 A1 D3,2	blue (-20°)	Ø 3.2 mm (4x)	20
Type M23 A3 panel-mount connector, angled, rotatable, front wall mounting				
44420055	M23 A3	black (N)	Ø 2.7 mm (4x)	5
44420054	M23 A3	black (N)	Ø 2.7 mm (4x)	20

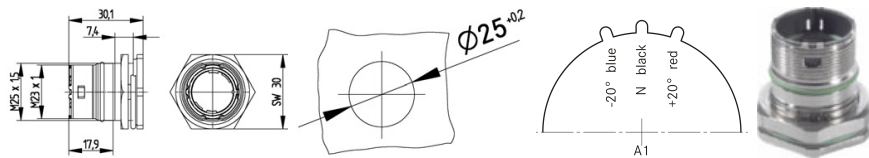
Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® M23 G4



EPIC® M23 G5



EPIC® M23 G6

Benefits

- Housings are very flexible - cable connectors with wide clamping range, receptacle housings for assembling the inserts from the front and rear

Application range

- Plant engineering
- Servo drives and servo assemblies
- Measurement and control technology

Product features

- EPIC® M23 G4**
 - Panel-mount connector
 - Front wall-mounting
- EPIC® M23 G5**
 - Panel-mount connector
 - Front wall-mounting
- EPIC® M23 G6**
 - Panel-mount connector
 - Rear wall-mounting

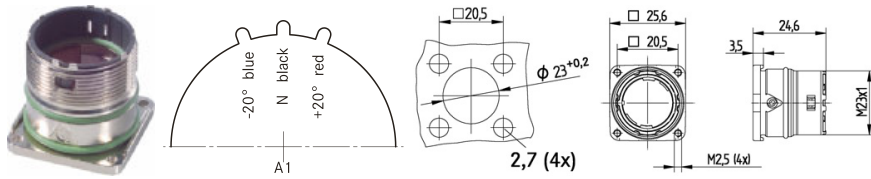
Technical data

- Material**
Housing: nickel-plated zinc die-casting
Sealing: FPM
- Protection rating**
IP68 (10h / 1m)
- Temperature range**
-25°C - +125°C

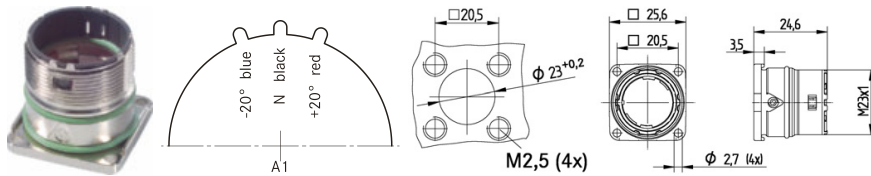
Article number	Article	Coding	Fastening type	Pieces / PU
Type M23 G4 panel-mount box, front wall mounting				
44420032	M23 G4	black (N)	M25 x 1.5	5
44420031	M23 G4	black (N)	M25 x 1.5	20
44420034	M23 G4	red (+20°)	M25 x 1.5	5
44420033	M23 G4	red (+20°)	M25 x 1.5	20
44420030	M23 G4	blue (-20°)	M25 x 1.5	5
44420029	M23 G4	blue (-20°)	M25 x 1.5	20
Type M23 G5 panel-mount box, front wall mounting				
44420046	M23 G5	black (N)	M25 x 1.5 (with nut)	5
44420045	M23 G5	black (N)	M25 x 1.5 (with nut)	20
44420048	M23 G5	red (+20°)	M25 x 1.5 (with nut)	5
44420047	M23 G5	red (+20°)	M25 x 1.5 (with nut)	20
44420044	M23 G5	blue (-20°)	M25 x 1.5 (with nut)	5
44420043	M23 G5	blue (-20°)	M25 x 1.5 (with nut)	20
Type M23 G6 panel-mount box, rear wall mounting				
44420071	M23 G6	black (N)	M25 x 1.5 (with nut)	5
44420073	M23 G6	black (N)	M25 x 1.5 (with nut)	20

Photographs are not to scale and do not represent detailed images of the respective products.

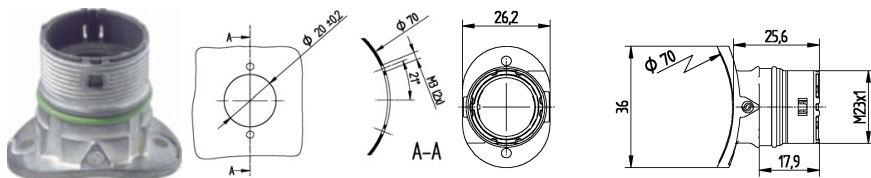
EPIC® M23 B1



EPIC® M23 B2



EPIC® M23 O1



Benefits

- Housings are very flexible - cable connectors with wide clamping range, receptacle housings for assembling the inserts from the front and rear

Application range

- Plant engineering
- Servo drives and servo assemblies
- Measurement and control technology

Product features

- EPIC® M23 B1**
 - Panel-mount connector
 - Rear wall-mounting
- EPIC® M23 B2**
 - Panel-mount connector
 - Rear wall-mounting
- EPIC® M23 O1**
 - Panel-mount base, straight entry
 - Front wall-mounting
 - For circular cases

Technical data

- Material**
Housing: nickel-plated zinc die-casting
Sealing: FPM
- IP** Protection rating
IP68 (10h / 1m)
- Temperature range**
-25°C - +125°C

Article number	Article	Coding	Fastening type	Pieces / PU
Type M23 B1 panel-mount box, rear wall mounting				
44420024	M23 B1	black (N)	M2.5 (4x)	5
44420023	M23 B1	black (N)	M2.5 (4x)	20
44420026	M23 B1	red (+20°)	M2.5 (4x)	5
44420025	M23 B1	red (+20°)	M2.5 (4x)	20
44420022	M23 B1	blue (-20°)	M2.5 (4x)	5
44420021	M23 B1	blue (-20°)	M2.5 (4x)	20
Type M23 B2 panel-mount box, rear wall mounting				
44420050	M23 B2	black (N)	Ø 2.7 mm (4x)	5
44420051	M23 B2	black (N)	Ø 2.7 mm (4x)	20
44420035	M23 B2	red (+20°)	Ø 2.7 mm (4x)	5
44420049	M23 B2	red (+20°)	Ø 2.7 mm (4x)	20
44420052	M23 B2	blue (-20°)	Ø 2.7 mm (4x)	5
44420053	M23 B2	blue (-20°)	Ø 2.7 mm (4x)	20
Type M23 O1 panel-mount box with radius, front wall mounting				
44420083	M23 O1	black (N)	Ø 3.2 mm (2x), mounting Ø 50 mm	5
44420082	M23 O1	black (N)	Ø 3.2 mm (2x), mounting Ø 50 mm	20
44420085	M23 O1	black (N)	Ø 3.2 mm (2x), mounting Ø 58 mm	5
44420084	M23 O1	black (N)	Ø 3.2 mm (2x), mounting Ø 58 mm	20
44420087	M23 O1	black (N)	Ø 3.2 mm (2x), mounting Ø 70 mm	5
44420086	M23 O1	black (N)	Ø 3.2 mm (2x), mounting Ø 70 mm	20
44420028	M23 O1	black (N)	Ø 3.2 mm (2x), mounting Ø 90 mm	5
44420027	M23 O1	black (N)	Ø 3.2 mm (2x), mounting Ø 90 mm	20

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® M23 C2



Benefits

- Quick and easy separation of connection from both sides of a wall
- For connecting two pre-assembled M23 D6 cable connectors

Application range

- Plant engineering
- Measurement and control technology

Product features

- Feed-through connector
- Panel thickness: up to 3 mm
- The inserts and contacts are already mounted onto the housing

Technical data

Material
 Housing: nickel-plated copper alloy
 Insert: thermoplastic
 Sealing: neoprene

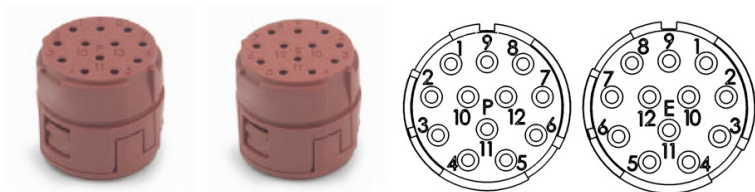
Protection rating
 IP 67

Temperature range
 -25°C - +125°C

Article number	Article	Version	Contacts included	Fastening type	Pin configuration	Pieces / PU
Type M23 C2 feed-through connector						
00010108	EPIC® M23 C2 12	black (N)	12	Ø 2.7 mm (4x)	12E male - 12P female	5
00010521	EPIC® M23 C2 17	black (N)	17	Ø 2.7 mm (4x)	17E male - 17P female	5

Photographs are not to scale and do not represent detailed images of the respective products.

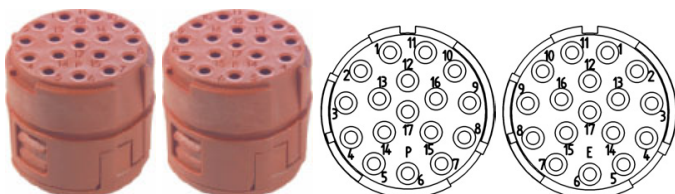
EPIC® M23 Inserts 12 pole D-Sub



Info

- For D-Sub ribbon contacts

EPIC® M23 Inserts 17 pole D-Sub



Info

- For D-Sub ribbon contacts

Suitable housing:

EPIC® M23 Inserts 12 pole D-Sub

- EPIC® M23 A1 Page 597
- EPIC® M23 A1 D3,2 Page 597
- EPIC® M23 A3 Page 597
- EPIC® M23 D6 Page 598
- EPIC® M23 F6 Page 598
- EPIC® M23 F7 Page 598
- EPIC® M23 G4 Page 599
- EPIC® M23 G5 Page 599
- EPIC® M23 G6 Page 599
- EPIC® M23 B1 Page 600
- EPIC® M23 B2 Page 600
- EPIC® M23 O1 Page 600

EPIC® M23 Inserts 17 pole D-Sub

- EPIC® M23 A1 Page 597
- EPIC® M23 A1 D3,2 Page 597
- EPIC® M23 A3 Page 597
- EPIC® M-D 1.0 D-Sub stamped contacts-on-reel Page 486
- EPIC® M23 D6 Page 598
- EPIC® M23 F6 Page 598
- EPIC® M23 F7 Page 598
- EPIC® M23 G4 Page 599
- EPIC® M23 G5 Page 599
- EPIC® M23 G6 Page 599
- EPIC® M23 B1 Page 600
- EPIC® M23 B2 Page 600
- EPIC® M23 O1 Page 600
- All inserts fit into all housings

Technical data

Rated voltage (V)	Contact resistance
EPIC® M23 Inserts 12 pole D-Sub 100 V	< 4 mOhm
EPIC® M23 Inserts 17 pole D-Sub 50 V	Contacts
Rated impulse voltage	Partly gold-plated brass
EPIC® M23 Inserts 12 pole D-Sub 1,5 kV	Number of contacts
EPIC® M23 Inserts 17 pole D-Sub 0,8 kV	EPIC® M23 Inserts 12 pole D-Sub 12
Rated current (A)	EPIC® M23 Inserts 17 pole D-Sub 17
4 A	Termination methods
Degree of soiling	Crimp termination: 0.08 - 0.56 mm²
3	Cycle of mechanical operation
	50
	Temperature range
	-25°C - +125°C



Suitable contacts:

- EPIC® M-D 1.0 D-Sub stamped contacts-on-reel Page 486

Benefits

- Efficient assembling due to the use of D-Sub contacts-on-reel

Application range

- Plant engineering
- Measurement and control technology
- Apparatus construction

Article number	Article	Inserts	Pin configuration	Pieces / PU
12-pin inserts, E-part = rotation to the right (clockwise)				
44420120	E-Part	Unpopulated, for male D-Sub crimp-contacts on reel	12	5
44420121	E-Part	Unpopulated, for male D-Sub crimp-contacts on reel	12	20
44420122	E-Part	Unpopulated, for female D-Sub crimp-contacts on reel	12	5
44420123	E-Part	Unpopulated, for female D-Sub crimp-contacts on reel	12	20
12-pin inserts, P-part = rotation to the left (anticlockwise)				
44420124	P-part	Unpopulated, for male D-Sub crimp-contacts on reel	12	5
44420125	P-part	Unpopulated, for male D-Sub crimp-contacts on reel	12	20
44420126	P-part	Unpopulated, for female D-Sub crimp-contacts on reel	12	5
44420127	P-part	Unpopulated, for female D-Sub crimp-contacts on reel	12	20
17-pin inserts, E-part = rotation to the right (clockwise)				
44420128	E-Part	Unpopulated, for male D-Sub crimp-contacts on reel	17	5
44420129	E-Part	Unpopulated, for male D-Sub crimp-contacts on reel	17	20
44420130	E-Part	Unpopulated, for female D-Sub crimp-contacts on reel	17	5
44420131	E-Part	Unpopulated, for female D-Sub crimp-contacts on reel	17	20
17-pin inserts, P-part = rotation to the left (anticlockwise)				
44420132	P-part	Unpopulated, for male D-Sub crimp-contacts on reel	17	5
44420133	P-part	Unpopulated, for male D-Sub crimp-contacts on reel	17	20
44420134	P-part	Unpopulated, for female D-Sub crimp-contacts on reel	17	5
44420135	P-part	Unpopulated, for female D-Sub crimp-contacts on reel	17	20

The inserts are suitable for both male and female contacts. For a complete connection, you will need one P-component and one E-component. P-component = left turning (anticlockwise), E-component = right turning (clockwise)

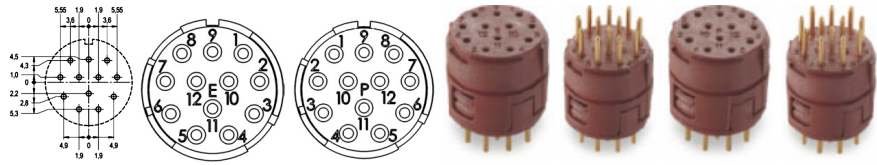
Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® M23 Inserts 12 pole PCB-soldering



Info

- With solder pins for PCB boards
- Only for housing type A1, B1, B2

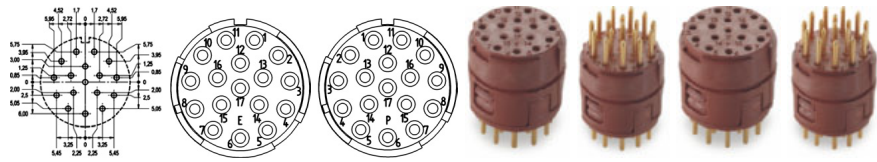


EPIC® M23 Inserts 17 pole PCB-soldering



Info

- With solder pins for PCB boards
- Only for housing type A1, B1, B2



Suitable housing:

- EPIC® M23 A1 Page 597
- EPIC® M23 A1 D3,2 Page 597
- EPIC® M23 B1 Page 600
- EPIC® M23 B2 Page 600
- Designed for housing type B1/B2

Benefits

- Inserts with solder pins at the connection side for soldering in PCB boards. Ideal in combination with M23 housings of type B1/ B2 for rear wall-mounting.

Application range

- Plant engineering
- Measurement and control technology
- Apparatus construction

Technical data

Rated voltage (V)

EPIC® M23 Inserts 12 pole PCB-soldering
100 V

EPIC® M23 Inserts 17 pole PCB-soldering
50 V

Rated impulse voltage

EPIC® M23 Inserts 12 pole PCB-soldering
1.5 kV

EPIC® M23 Inserts 17 pole PCB-soldering
0,8 kV

Rated current (A)

7 A

Degree of soiling

3

Contact resistance

< 4 mOhm

Contacts

Gold-plated brass

Number of contacts

EPIC® M23 Inserts 12 pole PCB-soldering
12

EPIC® M23 Inserts 17 pole PCB-soldering
17

Termination methods

Solder pins with Ø 1.0 mm for PCB soldering.
Pin length from rear edge of housing B1/B2:
4 mm

Cycle of mechanical operation

100

Temperature range

-25 °C - +125 °C



Article number	Article	Inserts	Contacts included	Pin configuration	Pieces / PU
12-pin inserts, P-part = rotation to the left (anticlockwise)					
44420107	P-part	+ male contacts, PCB solder	12	12	5
44420108	P-part	+ female contacts, PCB solder	12	12	5
12-pin inserts, E-part = rotation to the right (clockwise)					
44420066	E-Part	+ male contacts, PCB solder	12	12	5
44420106	E-Part	+ female contacts, PCB solder	12	12	5
17-pin inserts, P-part = rotation to the left (anticlockwise)					
44420160	P-part	+ male contacts, PCB solder	17	17	5
44420161	P-part	+ female contacts, PCB solder	17	17	5
17-pin inserts, E-part = rotation to the right (clockwise)					
44420162	E-Part	+ male contacts, PCB solder	17	17	5
44420163	E-Part	+ female contacts, PCB solder	17	17	5

The inserts are suitable for both male and female contacts. For a complete connection, you will need one P-component and one E-component. P-component = left turning (anticlockwise), E-component = right turning (clockwise)

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® M23 Inserts 6 pole



EPIC® M23 Inserts 7 pole



Suitable housing:

- EPIC® M23 A1 Page 597
- EPIC® M23 A1 D3,2 Page 597
- EPIC® M23 A3 Page 597
- EPIC® M23 D6 Page 598
- EPIC® M23 F6 Page 598
- EPIC® M23 F7 Page 598
- EPIC® M23 G4 Page 599
- EPIC® M23 G5 Page 599
- EPIC® M23 G6 Page 599
- EPIC® M23 B1 Page 600
- EPIC® M23 B2 Page 600
- EPIC® M23 O1 Page 600
- All inserts fit into all housings

Technical data

Rated voltage (V)
150 V

Rated impulse voltage
4 kV

Rated current (A)
18 A

Degree of soiling
3

Contact resistance
< 4 mOhm

Contacts
Gold-plated brass

Number of contacts
EPIC® M23 Inserts 6 pole

6
EPIC® M23 Inserts 7 pole

Termination methods
Crimp termination: 1.0 - 2.5 mm²
Solder termination: up to 2.5 mm²

Cycle of mechanical operation
100



Temperature range
-25°C - +125°C

Suitable contacts:

- EPIC® M23 Contacts male Page 608
- EPIC® M23 Contacts female Page 608
- Use 2 mm contacts

Benefits

- Universal further processing of the M23 inserts through different packaging units. Fully assembled with suitable solder contacts or unpopulated for individual assembly with crimp or solder contacts

Application range

- Plant engineering
- Measurement and control technology
- Apparatus construction

Article number	Article	Inserts	Contacts included	Pin configuration	Pieces / PU
6-pin inserts, P-part = rotation to the left (anticlockwise)					
73002760	P-part	without contacts		6	5
73002761	P-part	without contacts		6	20
73002762	P-part	+ male contacts, solder	6	6	5
73002763	P-part	+ male contacts, solder	6	6	20
73002764	P-part	+ female contacts, solder	6	6	5
73002765	P-part	+ female contacts, solder	6	6	20
6-pin Inserts, E-part = rotation to the right (clockwise)					
73002766	E-Part	without contacts		6	5
73002767	E-Part	without contacts		6	20
73002768	E-Part	+ male contacts, solder	6	6	5
73002769	E-Part	+ male contacts, solder	6	6	20
73002770	E-Part	+ female contacts, solder	6	6	5
73002771	E-Part	+ female contacts, solder	6	6	20
7-pin inserts, P-part = rotation to the left (anticlockwise)					
44420148	P-part	without contacts		7	5
44420149	P-part	without contacts		7	20
44420150	P-part	+ male contacts, solder	7	7	5
44420151	P-part	+ male contacts, solder	7	7	20
44420152	P-part	+ female contacts, solder	7	7	5
44420153	P-part	+ female contacts, solder	7	7	20
7-pin Inserts, E-part = rotation to the right (clockwise)					
44420154	E-Part	without contacts		7	5
44420155	E-Part	without contacts		7	20
44420156	E-Part	+ male contacts, solder	7	7	5
44420157	E-Part	+ male contacts, solder	7	7	20
44420158	E-Part	+ female contacts, solder	7	7	5
44420159	E-Part	+ female contacts, solder	7	7	20

The inserts are suitable for both male and female contacts. For a complete connection, you will need one P-component and one E-component. P-component = left turning (anticlockwise), E-component = right turning (clockwise)
Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® M23 Inserts 8+1 pole



EPIC® M23 Inserts 9 pole



Suitable housing:

- EPIC® M23 A1 Page 597
- EPIC® M23 A1 D3,2 Page 597
- EPIC® M23 A3 Page 597
- EPIC® M23 D6 Page 598
- EPIC® M23 F6 Page 598
- EPIC® M23 F7 Page 598
- EPIC® M23 G4 Page 599
- EPIC® M23 G5 Page 599
- EPIC® M23 G6 Page 599
- EPIC® M23 B1 Page 600
- EPIC® M23 B2 Page 600
- EPIC® M23 O1 Page 600
- All inserts fit into all housings

Suitable contacts:

- EPIC® M23 Contacts male Page 608
- EPIC® M23 Contacts female Page 608

EPIC® M23 Inserts 8+1 pole

- 8+1: 8*1 mm contact, 1*2 mm contact

EPIC® M23 Inserts 9 pole

- 9: 9*1 mm contact

Technical data

Rated voltage (V)
150 V

Rated impulse voltage
EPIC® M23 Inserts 8+1 pole
2.5 kV
EPIC® M23 Inserts 9 pole
1.5 kV

Rated current (A)
EPIC® M23 Inserts 8+1 pole
20 A (2 mm contact)
7 A (1 mm contacts)
EPIC® M23 Inserts 9 pole
7 A

Degree of soiling
3

Contact resistance
< 4 mOhm

Contacts
Gold-plated brass

Number of contacts
EPIC® M23 Inserts 8+1 pole
8 + 1
EPIC® M23 Inserts 9 pole
9

Termination methods
EPIC® M23 Inserts 8+1 pole
Crimp termination: 0.14 - 1.0 mm²
(1.0 - 2.5 mm² for 2-mm contact)
Solder termination: up to 1.0 mm²
(up to 2.5 mm² for 2-mm contact)
EPIC® M23 Inserts 9 pole
Crimp termination: 0.14 - 1.0 mm²
Solder termination: up to 1.0 mm²

Cycle of mechanical operation
100



Temperature range
-25 °C - +125 °C

Benefits

- Universal further processing of the M23 inserts through different packaging units. Fully assembled with suitable solder contacts or unpopulated for individual assembly with crimp or solder contacts

Application range

- Plant engineering
- Measurement and control technology
- Apparatus construction

Article number	Article	Inserts	Contacts included	Pin configuration	Pieces / PU
8+1-pin inserts, P-part = rotation to the left (anticlockwise)					
73002736	P-part	without contacts		8+1	5
73002737	P-part	without contacts		8+1	20
73002738	P-part	+ male contacts, solder	9	8+1	5
73002739	P-part	+ male contacts, solder	9	8+1	20
73002740	P-part	+ female contacts, solder	9	8+1	5
73002741	P-part	+ female contacts, solder	9	8+1	20
8+1-pin inserts, E-part = rotation to the right (clockwise)					
73002742	E-Part	without contacts		8+1	5
73002743	E-Part	without contacts		8+1	20
73002744	E-Part	+ male contacts, solder	9	8+1	5
73002745	E-Part	+ male contacts, solder	9	8+1	20
73002746	E-Part	+ female contacts, solder	9	8+1	5
73002747	E-Part	+ female contacts, solder	9	8+1	20
9-pin inserts, P-part = rotation to the left (anticlockwise)					
73002724	P-part	Unpopulated		9	5
73002725	P-part	Unpopulated		9	20
73002726	P-part	+ male contacts, solder	9	9	5
73002727	P-part	+ male contacts, solder	9	9	20
73002728	P-part	+ female contacts, solder	9	9	5
73002729	P-part	+ female contacts, solder	9	9	20
9-pin inserts, E-part = rotation to the right (clockwise)					
73002730	E-Part	Unpopulated		9	5
73002731	E-Part	Unpopulated		9	20
73002732	E-Part	+ male contacts, solder	9	9	5
73002733	E-Part	+ male contacts, solder	9	9	20
73002734	E-Part	+ female contacts, solder	9	9	5
73002735	E-Part	+ female contacts, solder	9	9	20

The inserts are suitable for both male and female contacts. For a complete connection, you will need one P-component and one E-component. P-component = left turning (anticlockwise), E-component = right turning (clockwise)

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® M23 Inserts 12 pole



EPIC® M23 Inserts 16 pole



Suitable housing:

- EPIC® M23 A1 Page 597
- EPIC® M23 A1 D3,2 Page 597
- EPIC® M23 A3 Page 597
- EPIC® M23 D6 Page 598
- EPIC® M23 F6 Page 598
- EPIC® M23 F7 Page 598
- EPIC® M23 G4 Page 599
- EPIC® M23 G5 Page 599
- EPIC® M23 G6 Page 599
- EPIC® M23 B1 Page 600
- EPIC® M23 B2 Page 600
- EPIC® M23 O1 Page 600
- All inserts fit into all housings

Technical data

Rated voltage (V)
100 V

Rated impulse voltage
1.5 kV

Rated current (A)
7 A

Degree of soiling
3

Contact resistance
< 4 mOhm

Contacts
Gold-plated brass

Number of contacts
EPIC® M23 Inserts 12 pole
12
EPIC® M23 Inserts 16 pole
16

Termination methods
Crimp termination: 0.14 - 1.0 mm²
Solder termination: up to 1.0 mm²

Cycle of mechanical operation
100

Temperature range
-25°C - +125°C

Suitable contacts:

- EPIC® M23 Contacts male Page 608
- EPIC® M23 Contacts female Page 608

Benefits

- Universal further processing of the M23 inserts through different packaging units. Fully assembled with suitable solder contacts or unpopulated for individual assembly with crimp or solder contacts

Application range

- Plant engineering
- Measurement and control technology
- Apparatus construction

Article number	Article	Inserts	Contacts included	Pin configuration	Pieces / PU
12-pin inserts, P-part = rotation to the left (anticlockwise)					
73002712	P-part	Unpopulated		12	5
73002713	P-part	Unpopulated		12	20
73002714	P-part	+ male contacts, solder	12	12	5
73002715	P-part	+ male contacts, solder	12	12	20
73002716	P-part	+ female contacts, solder	12	12	5
73002717	P-part	+ female contacts, solder	12	12	20
12-pin inserts, E-part = rotation to the right (clockwise)					
73002718	E-Part	Unpopulated		12	5
73002719	E-Part	Unpopulated		12	20
73002720	E-Part	+ male contacts, solder	12	12	5
73002721	E-Part	+ male contacts, solder	12	12	20
73002722	E-Part	+ female contacts, solder	12	12	5
73002723	E-Part	+ female contacts, solder	12	12	20
16-pin inserts, P-part = rotation to the left (anticlockwise)					
73002700	P-part	Unpopulated		16	5
73002701	P-part	Unpopulated		16	20
73002702	P-part	+ male contacts, solder	16	16	5
73002703	P-part	+ male contacts, solder	16	16	20
73002704	P-part	+ female contacts, solder	16	16	5
73002705	P-part	+ female contacts, solder	16	16	20
16-pin inserts, E-part = rotation to the right (clockwise)					
73002706	E-Part	Unpopulated		16	5
73002707	E-Part	Unpopulated		16	20
73002708	E-Part	+ male contacts, solder	16	16	5
73002709	E-Part	+ male contacts, solder	16	16	20
73002710	E-Part	+ female contacts, solder	16	16	5
73002711	E-Part	+ female contacts, solder	16	16	20

The inserts are suitable for both male and female contacts. For a complete connection, you will need one P-component and one E-component. P-component = left turning (anticlockwise), E-component = right turning (clockwise)

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® M23 Inserts 17 pole



Suitable housing:

- EPIC® M23 A1 Page 597
- EPIC® M23 A1 D3,2 Page 597
- EPIC® M23 A3 Page 597
- EPIC® M23 D6 Page 598
- EPIC® M23 F6 Page 598
- EPIC® M23 F7 Page 598
- EPIC® M23 G4 Page 599
- EPIC® M23 G5 Page 599
- EPIC® M23 G6 Page 599
- EPIC® M23 B1 Page 600
- EPIC® M23 B2 Page 600
- EPIC® M23 O1 Page 600
- All inserts fit into all housings

Technical data

Rated voltage (V)
50 V

Rated impulse voltage
0,8 kV

Rated current (A)
7 A

Degree of soiling
3

Contact resistance
< 4 mOhm

Contacts
Gold-plated brass

Number of contacts
17

Termination methods
Crimp termination: 0.14 - 1.0 mm²
Solder termination: up to 1.0 mm²

Cycle of mechanical operation
100



Temperature range
-25 °C - +125 °C

Suitable contacts:

- EPIC® M23 Contacts male Page 608
- EPIC® M23 Contacts female Page 608

Benefits

- Universal further processing of the M23 inserts through different packaging units. Fully assembled with suitable solder contacts or unpopulated for individual assembly with crimp or solder contacts

Application range

- Plant engineering
- Measurement and control technology
- Apparatus construction

Article number	Article	Inserts	Contacts included	Pin configuration	Pieces / PU
17-pin inserts, P-part = rotation to the left (anticlockwise)					
73008000	P-part	Unpopulated		17	5
73008010	P-part	Unpopulated		17	20
73028000	P-part	+ male contacts, solder	17	17	5
73028010	P-part	+ male contacts, solder	17	17	20
73018000	P-part	+ female contacts, solder	17	17	5
73018010	P-part	+ female contacts, solder	17	17	20
17-pin inserts, E-part = rotation to the right (clockwise)					
73008500	E-Part	Unpopulated		17	5
73008510	E-Part	Unpopulated		17	20
73028500	E-Part	+ male contacts, solder	17	17	5
73028510	E-Part	+ male contacts, solder	17	17	20
73018500	E-Part	+ female contacts, solder	17	17	5
73018510	E-Part	+ female contacts, solder	17	17	20

The inserts are suitable for both male and female contacts. For a complete connection, you will need one P-component and one E-component. P-component = left turning (anticlockwise), E-component = right turning (clockwise)

Photographs are not to scale and do not represent detailed images of the respective products.

Circular connectors

EPIC® CIRCON M23 Contacts, tools, accessories

EPIC® M23 Contacts male



EPIC® M23 Contacts female



Article number	Article designation	Version	For design	Pieces / PU
Male contacts				
72400001	EPIC® M23 SCEM 1 mm AU 0,14 - 1,0 (10)	1 mm male crimp	M23 inserts (not D-Sub)	10
72400000	EPIC® M23 SCEM 1 mm AU 0,14 - 1,0 (100)	1 mm male crimp	M23 inserts (not D-Sub)	100
72402001	EPIC® M23 SLEM 1 mm AU 1.0 (10)	1 mm male solder	M23 inserts (not D-Sub)	10
72402000	EPIC® M23 SLEM 1 mm AU 1.0 (100)	1 mm male solder	M23 inserts (not D-Sub)	100
72401000	EPIC® M23 SCEM 2 mm AU 1,0 - 2,5 (100)	2 mm male crimp	M23 inserts (not D-Sub)	100
72403100	EPIC® M23 SLEM 2 mm AU (10)	2 mm male solder	M23 inserts (not D-Sub)	10
72403000	EPIC® M23 SLEM 2 mm AU (100)	2 mm male solder	M23 inserts (not D-Sub)	100
Female contacts				
74020601	EPIC® M23 BCEMS 1 mm AU 0.14 - 1.0 (10)	1 mm female slot 0.14 - 1.0 mm ²	M23 inserts (not D-Sub), LS1 D6, A6	10
74200600	EPIC® M23 BCEMS 1 mm AU 0.14 - 1.0 (100)	1 mm female slot 0.14 - 1.0 mm ²	M23 inserts (not D-Sub), LS1 D6, A6	100
72402601	EPIC® M23 BLEMS 1 mm 1.0 AU (10)	1 mm female slot solder	M23 inserts (not D-Sub)	10
72402600	EPIC® M23 BLEMS 1 mm 1.0 AU (100)	1 mm female slot solder	M23 inserts (not D-Sub)	100
72401601	EPIC® M23 BCEMS 2 mm AU 1,0 - 2,5 (10)	2 mm female crimp	M23 inserts (not D-Sub)	10
72401600	EPIC® M23 BCEMS 2 mm AU 1,0 - 2,5 (100)	2 mm female crimp	M23 inserts (not D-Sub)	100
72404100	EPIC® M23 BLEMS 2 mm AU 1,0 - 2,5 (10)	2 mm female solder	M23 inserts (not D-Sub)	10
72404000	EPIC® M23 BLEMS 2 mm AU 1,0 - 2,5 (100)	2 mm female solder	M23 inserts (not D-Sub)	100
74034501	LS1 D BCEMS 1 mm AU 0.14 - 1.0 (10)	1 mm female hyperboloid 0.14 - 1.0 mm ²	M23 inserts (not D-Sub), LS1 D6, A6	10
74034500	LS1 D BCEMS 1 mm AU 0.14 - 1.0 (100)	1 mm female hyperboloid 0.14 - 1.0 mm ²	M23 inserts (not D-Sub), LS1 D6, A6	100

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® M23 Tools



Article number	Article	Inserts	Pieces / PU
Tools			
11148000	Crimping tool	In tool case, without locator	1
11148001	4-mandrel digital crimping tool	In tool case, without locator	1
11148002	Crimping machine	Pneumatic for 5 - 10 bar, locator not included	1
11148300	Locator for EPIC® CIRCON		1
44420078	M23 removal tool for inserts	For housing type A, B, G, O	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® M23 Accessories



Article number	Article	Inserts	Pieces / PU
Accessories			
75018310	LS1 A, G, F protection cap, plastic cord with cable lug	Metal cap for A1, F6, F7, G5	20
75007810	M23-LS1 A, B, F, G protective cap	Plastic cap for A1, F6	20
75007710	M23-LS1 D protective cap	Plastic cap for D6, A6	20
75018010	M23 A, B, F, G protective cap, plastic cord with cable lug	Metal cap for A1, F6	20
75018110	M23 A protective cap, plastic cord with grommet	Metal cap for A1	20
55001312	SILVYN ADAPTER M23/M20x1,5	For clamping range 8.5 - 11 mm and 10.5 - 15.5 mm	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® M23 Kits 12pole

■ EPIC® KIT M23 D6 12-POL FEMALE



- EPIC® M23 12-pin solder termination female insert
- Max. cross-section 1.0 mm²
- P-part, rotation to the left, anticlockwise
- D6 cable connector, clamping range 7.0 - 13.5 mm

Article number	Pieces / PU
75009702	1

■ Article numbers for single components

- P-part 73002716 (Page 606)
- M23 D6 44420037 (Page 598)



■ EPIC® KIT M23 A1 12-POL MALE

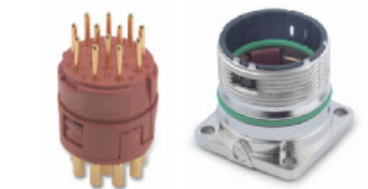


- EPIC® M23 12-pin solder-termination male insert
- Max. cross-section 1.0 mm²
- E-Part, rotation to the right, clockwise
- A1 panel-mount box, front wall mounting

Article number	Pieces / PU
75009703	1

■ Article numbers for single components

- E-Part 73002720 (Page 606)
- M23 A1 72004000 (Page 597)



■ EPIC® KIT M23 A3 12-POL MALE



- EPIC® M23 12-pin solder-termination male insert
- Max. cross-section 1.0 mm²
- E-Part, rotation to the right, clockwise
- A3 panel-mount box, angled and rotatable, front wall mounting

Article number	Pieces / PU
75009704	1

■ Article numbers for single components

- E-Part 73002720 (Page 606)
- M23 A3 44420055 (Page 597)



■ EPIC® KIT M23 F6 12-POL MALE



- EPIC® M23 12-pin solder-termination male insert
- Max. cross-section 1.0 mm²
- E-Part, rotation to the right, clockwise
- F6 cable coupler, clamping range 7.0 - 13.5 mm

Article number	Pieces / PU
75009705	1

■ Article numbers for single components

- E-Part 73002720 (Page 606)
- M23 F6 44420040 (Page 598)



Info

- Complete connectors - easy to order

■ Benefits

- Uncomplicated ordering
- No misplaced orders
- Pre-packed kits with compatible components

■ Technical data

Rated voltage (V)
100 V (1 mm contacts)

Rated current (A)
7 A (1 mm contacts)

Number of contacts
12

EPIC® M23 Kits 17pol.



Article number	Pieces / PU
75009706	1

Article numbers for single components

- P-part 73018000 (Page 607)
- M23 D6 44420037 (Page 598)

EPIC KIT M23 D6 17-POL FEMALE



- EPIC® M23 17-pin solder termination female insert
- Max. cross-section 1.0 mm²
- P-part, rotation to the left, anticlockwise
- D6 cable connector, clamping range 7.0 - 13.5 mm



Article number	Pieces / PU
75009707	1

Article numbers for single components

- E-Part 73028500 (Page 607)
- M23 A1 72004000 (Page 597)

EPIC KIT M23 A1 17-POL MALE



- EPIC® M23 17-pin solder-termination male insert
- Max. cross-section 1.0 mm²
- E-Part, rotation to the right, clockwise
- A1 panel-mount box, front wall mounting



Article number	Pieces / PU
75009708	1

Article numbers for single components

- E-Part 73028500 (Page 607)
- M23 A3 44420055 (Page 597)

EPIC KIT M23 A3 17-POL MALE



- EPIC® M23 17-pin solder-termination male insert
- Max. cross-section 1.0 mm²
- E-Part, rotation to the right, clockwise
- A3 panel-mount box, angled and rotatable, front wall mounting



Article number	Pieces / PU
75009709	1

Article numbers for single components

- E-Part 73028500 (Page 607)
- M23 F6 44420040 (Page 598)

EPIC KIT M23 F6 17-POL MALE



- EPIC® M23 17-pin solder-termination male insert
- Max. cross-section 1.0 mm²
- E-Part, rotation to the right, clockwise
- F6 cable coupler, clamping range 7.0 - 13.5 mm



Info

- Complete connectors - easy to order

Benefits

- Uncomplicated ordering
- No misplaced orders
- Pre-packed kits with compatible components

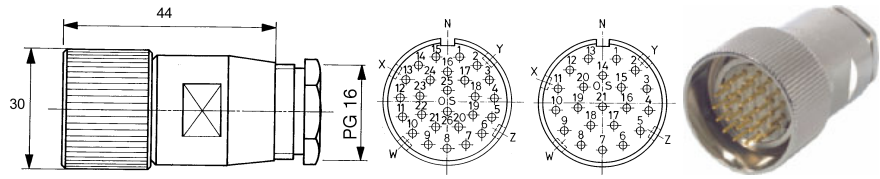
Technical data

Rated voltage (V)
50 V (1 mm contacts)

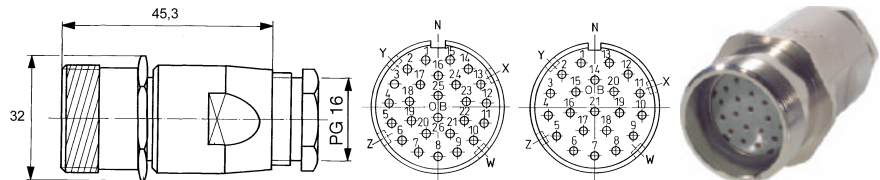
Rated current (A)
7 A (1 mm contacts)

Number of contacts
17

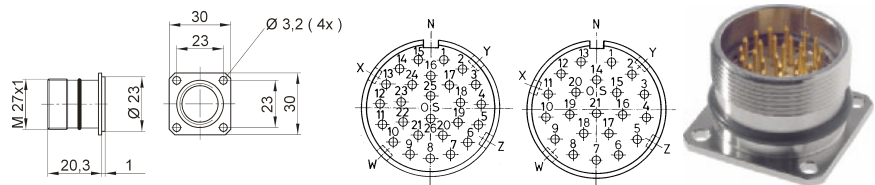
EPIC® ZYLIN R 3.0 D PG16



EPIC® ZYLIN R 3.0 F PG16



EPIC® ZYLIN R 3.0 A



Benefits

- For applications where circular connectors with a higher number of contacts are required

Application range

- Machine and equipment manufacturing
- Measurement and control technology

Product features

EPIC® ZYLIN R 3.0 D PG16

- Cable connector
- Equipped with male or female inserts

EPIC® ZYLIN R 3.0 F PG16

- Cable coupler
- Equipped with male or female inserts

EPIC® ZYLIN R 3.0 A

- Panel-mount base
- Front wall-mounting
- Equipped with male or female inserts

Technical data

Rated voltage (V)
24V AC / 60VDC

Rated impulse voltage
1.5 kV

Rated current (A)
7.5 A

Contact resistance
< 3 mOhm

Contacts
Copper alloy, gold-plated

Number of contacts
21-pin / 26-pin

Termination methods

Solder termination: up to 1.0 mm²



Material

Housing: nickel-plated copper alloy
Insert: thermoplastic
Sealing: neoprene



Protection rating

IP 67 (maximum, dependant on cable gland used)

Cycle of mechanical operation

500



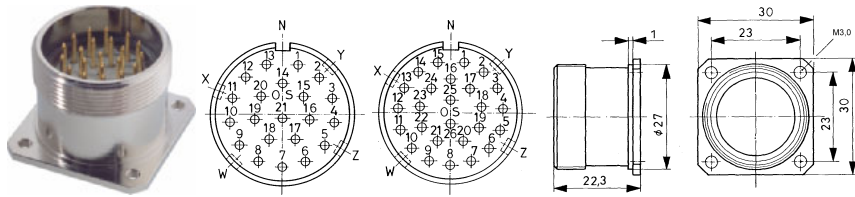
Temperature range

-40 °C to +100 °C, short-term up to +125 °C

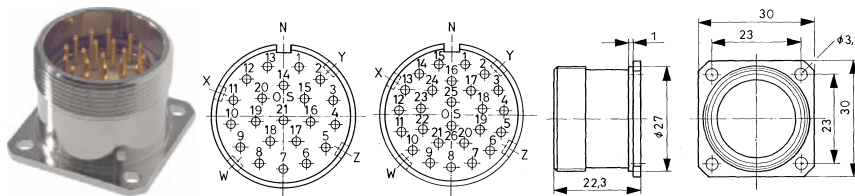
Article number	Article	Version	Contacts	Pin configuration	Coding	Cable clamping range	Fastening type	Pieces / PU
R 3.0 D PG16								
00009045	ZYLIN R 3.0 D	male	1 - 21	E-Part	N	6.5 - 16.0		5
00008899	ZYLIN R 3.0 D	male	1 - 26	E-Part	N	6.5 - 16.0		5
00008749	ZYLIN R 3.0 D	female	1 - 21	P-Part	N	6.5 - 16.0		5
00008829	ZYLIN R 3.0 D	female	1 - 26	P-Part	N	6.5 - 16.0		5
R 3.0 F PG16								
00008854	ZYLIN R 3.0 F	male	1 - 21	E-Part	N	6.5 - 16.0		5
00008822	ZYLIN R 3.0 F	male	1 - 26	E-Part	N	6.5 - 16.0		5
00008779	ZYLIN R 3.0 F	female	1 - 21	P-Part	N	6.5 - 16.0		5
00008979	ZYLIN R 3.0 F	female	1 - 26	P-Part	N	6.5 - 16.0		5
R 3.0 A								
00008747	ZYLIN R 3.0 A	male	1 - 21	E-Part	N		Ø 3.2 mm (4x)	5
00008825	ZYLIN R 3.0 A	male	1 - 26	E-Part	N		Ø 3.2 mm (4x)	5
00008867	ZYLIN R 3.0 A	female	1 - 21	P-Part	N		Ø 3.2 mm (4x)	5
00008746	ZYLIN R 3.0 A	female	1 - 26	P-Part	N		Ø 3.2 mm (4x)	5

The housing is available with male or female inserts. The contact photographs are not to scale and do not represent detailed images of the respective products.

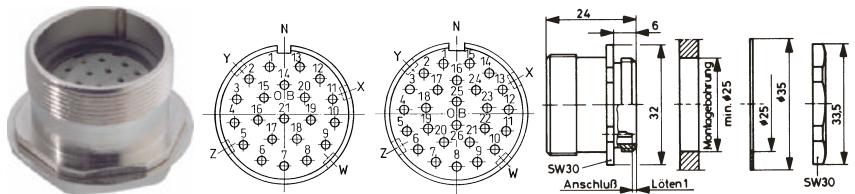
EPIC® ZYLIN R 3.0 B1



EPIC® ZYLIN R 3.0 B2



EPIC® ZYLIN R 3.0 G1



Benefits

- For applications where circular connectors with a higher number of contacts are required

Application range

- Machine and equipment manufacturing
- Measurement and control technology

Product features

EPIC® ZYLIN R 3.0 B1

- Panel-mount connector
- Rear wall-mounting
- Equipped with male or female inserts

EPIC® ZYLIN R 3.0 B2

- Panel-mount connector
- Rear wall-mounting
- Equipped with male or female inserts

EPIC® ZYLIN R 3.0 G1

- Panel-mount connector
- Front wall-mounting
- Equipped with male or female inserts

Technical data

Rated voltage (V)
24V AC / 60VDC

Rated impulse voltage
1.5 kV

Rated current (A)
7.5 A

Contact resistance
< 3 mOhm

Contacts
Copper alloy, gold-plated

Number of contacts
21-pin / 26-pin

Termination methods
Solder termination: up to 1.0 mm²



Material
Housing: nickel-plated copper alloy
Insert: thermoplastic
Sealing: neoprene



Protection rating
IP 67 (maximum, dependant on cable gland used)

Cycle of mechanical operation
500



Temperature range
-40 °C to +100 °C, short-term up to +125 °C

Article number	Article	Version	Contacts	Pin configuration	Coding	Fastening type	Pieces / PU
R 3.0 B1							
00009082	ZYLIN R 3.0 B1	male	1 - 21	E-Part	N	M3 (4x)	5
00009135	ZYLIN R 3.0 B1	female	1 - 21	P-Part	N	M3 (4x)	5
00008978	ZYLIN R 3.0 B1	female	1 - 26	P-Part	N	M3 (4x)	5
R 3.0 B2							
00008939	ZYLIN R 3.0 B2	male	1 - 26	E-Part	N	Ø 3.2 mm (4x)	5
00009470	ZYLIN R 3.0 B2	female	1 - 26	P-Part	N	Ø 3.2 mm (4x)	5
R 3.0 G1							
00009371	ZYLIN R 3.0 G1	male	1 - 21	E-Part	N	Ø 25 mm (1x)	5
00009894	ZYLIN R 3.0 G1	male	1 - 26	E-Part	N	Ø 25 mm (1x)	5
00009057	ZYLIN R 3.0 G1	female	1 - 21	P-Part	N	Ø 25 mm (1x)	5
00009005	ZYLIN R 3.0 G1	female	1 - 26	P-Part	N	Ø 25 mm (1x)	5

The housing is available with male or female inserts. The contact photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

EPIC® ZYLIN R 3.0 Tools



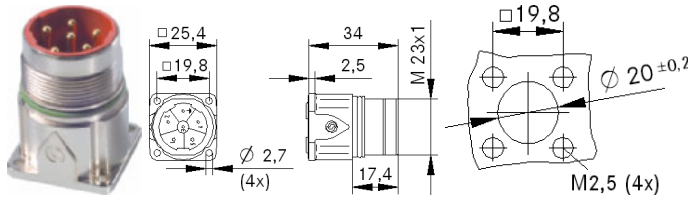
EPIC® ZYLIN R 3.0 Accessories



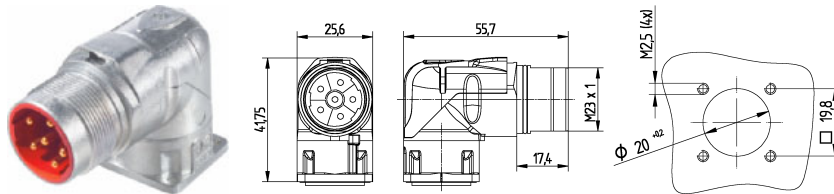
Article number	Article designation	For design	Pieces / PU
50200800	R3.0 assembly/disassembly tool	for type D, F	1
Flat gasket			
50201203	R3.0 A flat gasket	for type A1	5
50202203	R3.0 B flat gasket	for type B	5
Metal cap			
50201120	R3.0 A metal screw-cap	for type A1	5
50204121	R3.0 D metal screw-cap	for type D6	5

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® LS1 A1 6 contacts



EPIC® LS1 A3 6 contacts



Info

- Range of rotation: 330° in 15° increments

Suitable contacts:

- EPIC® LS1 Contacts male Page 622
- PU = 5 pieces: the contacts are included. 2 mm contact crimp range is 0.5 - 2.5 mm².
- PU = 20 pieces: the contacts must be ordered separately

Benefits

- The power connectors with the contact configurations of 5+PE and 3+PE+4 are designed for use in servomotors and servo assemblies.

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

EPIC® LS1 A1 6 contacts

- Panel-mount base, straight entry
- For male contacts crimp
- Housing with pre-assembled insulation

EPIC® LS1 A3 6 contacts

- Panel-mount base, angled, rotatable
- For male contacts crimp
- Housing with pre-assembled insulation

Technical data

Rated voltage (V)

630 V

Rated impulse voltage

6 kV

Rated current (A)

25 A

Degree of soiling

3

Contact resistance

< 4 mOhm

Contacts

Gold-plated brass

Number of contacts

5 + PE

Termination methods

Crimp termination: 0.5 - 2.5 mm²



Material

Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM



Protection rating

IP68 (10h / 1m)

Cycle of mechanical operation

500



Temperature range

-25°C - +125°C



VDE-tested

EPIC® LS1 A1 6 contacts

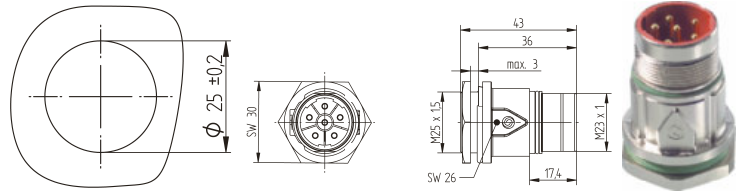
Certified production control: VDE-REG. no. 25

Article number	Article	Contacts included	Fastening type	Pin configuration	Pieces / PU
Type LS1 A1, 6-pin, for male contacts					
76003000	LS1 A1	6	Ø 2.7 mm (4x)	5 + PE	5
76003510	LS1 A1	6	Ø 2.7 mm (4x)	5 + PE	20
Type LS1 A3, angled, rotatable, 6-pin, for male contacts					
44420058	LS1 A3	6	Ø 2.7 mm (4x)	5 + PE	5
44420059	LS1 A3	6	Ø 2.7 mm (4x)	5 + PE	20

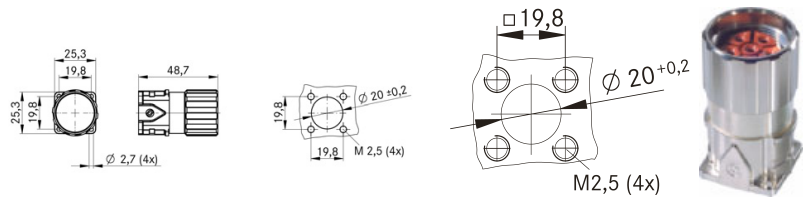
Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® LS1 G5 6 contacts



EPIC® LS1 A6 6 contacts



Suitable contacts:

EPIC® LS1 G5 6 contacts

- EPIC® LS1 Contacts male Page 622

EPIC® LS1 A6 6 contacts

- EPIC® LS1 Contacts female Page 622
- PU = 5 pieces: the contacts are included. 2 mm contact crimp range is 0.5 - 2.5 mm².
- PU = 20 pieces: the contacts must be ordered separately

Benefits

- The power connectors with the contact configurations of 5+PE and 3+PE+4 are designed for use in servomotors and servo assemblies.

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

EPIC® LS1 G5 6 contacts

- Panel-mount connector
- For male contacts crimp
- Housing with pre-assembled insulation

EPIC® LS1 A6 6 contacts

- Panel-mount base, straight entry
- For female contacts crimp
- Housing with pre-assembled insulation

Technical data

Rated voltage (V)
630 V

Rated impulse voltage
6 kV

Rated current (A)
25 A

Degree of soiling
3

Contact resistance
< 4 mOhm

Contacts
Gold-plated brass

Number of contacts
5 + PE

Termination methods

Crimp termination: 0.5 - 2.5 mm²



Material

Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM



Protection rating

IP68 (10h / 1m)

Cycle of mechanical operation

500



Temperature range

-25 °C - +125 °C



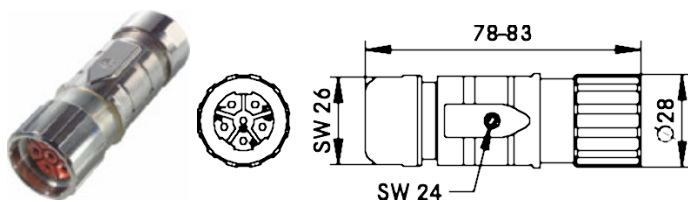
VDE-tested

Certified production control: VDE-REG. no. 25

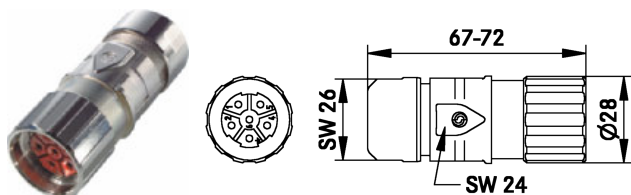
Article number	Article	Contacts included	Fastening type	Pin configuration	Pieces / PU
Type LS1 G5, 6-pin, for male contacts					
76153000	LS1 G5	6	M25 x 1.5 (with nut)	5 + PE	5
76153510	LS1 G5		M25 x 1.5 (with nut)	5 + PE	20
Type LS1 A6, 6-pin, for female contacts					
76083000	LS1 A6	6	Ø 2.7 mm (4x)	5 + PE	5
76083510	LS1 A6		Ø 2.7 mm (4x)	5 + PE	20

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® LS1 D6 6 contacts



EPIC® LS1 D6 6 contacts (short)



Suitable contacts:

- EPIC® LS1 Contacts female Page 622
- PU = 5 pieces: the contacts are included. 2 mm contact crimp range is 0.5 - 2.5 mm².
- PU = 20 pieces: the contacts must be ordered separately

Benefits

- The power connectors with the contact configurations of 5+PE and 3+PE+4 are designed for use in servomotors and servo assemblies.

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

EPIC® LS1 D6 6 contacts

- Cable connector, long type
- For female contacts crimp
- Housing with pre-assembled insulation
- Connectors with cable clamping range 14 - 17 mm for 2 mm contacts with cross-section of 4 mm²
- In PU5, parts with the cable clamping ranges 8.5-11/10.5-15.5/7.5-15.5 mm include the 2 mm contacts with a cross-section of 0.5-2.5 mm²

EPIC® LS1 D6 6 contacts (short)

- Cable connector, short type
- For female contacts crimp
- Housing with pre-assembled insulation

Technical data

Rated voltage (V)	630 V
Rated impulse voltage	6 kV
Rated current (A)	25 A
Degree of soiling	3
Contact resistance	< 4 mOhm
Contacts	Gold-plated brass
Number of contacts	5 + PE

Termination methods

Crimp termination: 0.5 - 4.0 mm²



Material

Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM



Protection rating

IP68 (10h / 1m)

Cycle of mechanical operation

500



Temperature range

-25°C - +125°C



VDE-tested

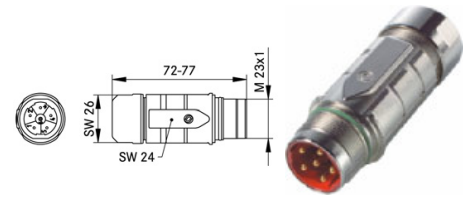
Certified production control: VDE-REG. no. 25

Article number	Article	Contacts included	Cable clamping range (mm)	Pin configuration	Pieces / PU
Type LS1 D6, 6-pin, for female contacts					
73000004	LS1 D6	6	8.5 - 11	5 + PE	5
73000006	LS1 D6		8.5 - 11	5 + PE	20
73000005	LS1 D6	6	10.5 - 15.5	5 + PE	5
73000007	LS1 D6		10.5 - 15.5	5 + PE	20
76123000	LS1 D6	6	7.5 - 15.5	5 + PE	5
76123510	LS1 D6		7.5 - 15.5	5 + PE	20
44420091	LS1 D6	6	14 - 17	5 + PE	5
44420090	LS1 D6		14 - 17	5 + PE	20
Type LS1 D6 short, 6-pin, for female contacts					
73000028	LS1 D6	6	8.5 - 11	5 + PE	5
73000030	LS1 D6		8.5 - 11	5 + PE	20
73000029	LS1 D6	6	10.5 - 15.5	5 + PE	5
73000031	LS1 D6		10.5 - 15.5	5 + PE	20
76123100	LS1 D6	6	7.5 - 15.5	5 + PE	5
76123610	LS1 D6		7.5 - 15.5	5 + PE	20

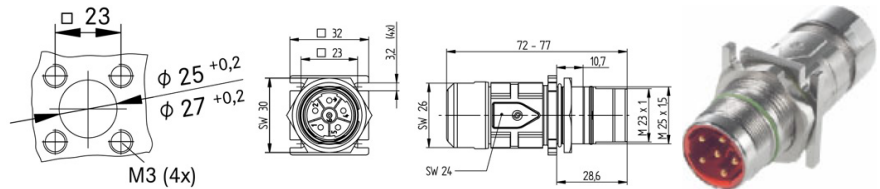
Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® LS1 F6 6 contacts



EPIC® LS1 F7 6 contacts



Suitable contacts:

- EPIC® LS1 Contacts male Page 622
- PU = 5 pieces: the contacts are included. 2 mm contact crimp range is 0.5 - 2.5 mm².
- PU = 20 pieces: the contacts must be ordered separately

Benefits

- The power connectors with the contact configurations of 5+PE and 3+PE+4 are designed for use in servomotors and servo assemblies.

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

EPIC® LS1 F6 6 contacts

- Cable coupler
- For male contacts crimp
- Connectors with cable clamping range 14 - 17 mm for 2 mm contacts with cross-section of 4 mm²
- Housing with pre-assembled insulation
- In PU5, parts with the cable clamping ranges 8.5-11/ 10.5-15.5/7.5-15.5 mm include the 2 mm contacts with a cross-section of 0.5-2.5 mm²

EPIC® LS1 F7 6 contacts

- Cable coupler with flange
- For male contacts crimp
- Housing with pre-assembled insulation

Technical data

Rated voltage (V)
630 V

Rated impulse voltage
6 kV

Rated current (A)
25 A

Degree of soiling
3

Contact resistance
< 4 mOhm

Contacts
Gold-plated brass

Number of contacts
5 + PE

Termination methods

Crimp termination: 0.5 - 4.0 mm²



Material

Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM



Protection rating

IP68 (10h / 1m)



Cycle of mechanical operation

500



Temperature range

-25 °C - +125 °C



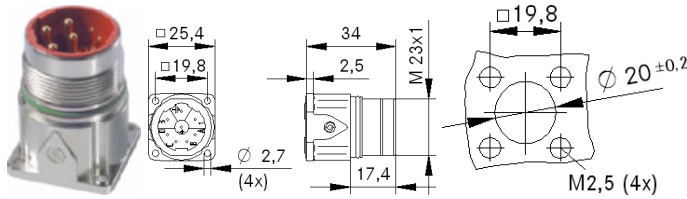
VDE-tested

Certified production control: VDE-REG. no. 25

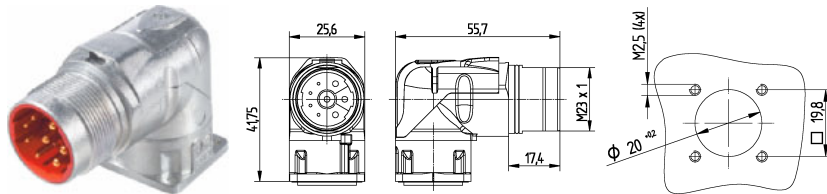
Article number	Article	Contacts included	Cable clamping range (mm)	Fastening type	Pin configuration	Pieces / PU
Type LS1 F6, 6-pin, for male contacts						
73000012	LS1 F6	6	8.5 - 11		5 + PE	5
73000014	LS1 F6		8.5 - 11		5 + PE	20
73000013	LS1 F6	6	10.5 - 15.5		5 + PE	5
73000015	LS1 F6		10.5 - 15.5		5 + PE	20
76133000	LS1 F6	6	7.5 - 15.5		5 + PE	5
76133510	LS1 F6		7.5 - 15.5		5 + PE	20
44420095	LS1 F6	6	14 - 17		5 + PE	5
44420094	LS1 F6		14 - 17		5 + PE	20
Type LS1 F7, 6-pin, for male contacts						
73000020	LS1 F7	6	8.5 - 11	Ø 3.2 mm (4x), M25 x 1.5 (with nut)	5 + PE	5
73000021	LS1 F7	6	10.5 - 15.5	Ø 3.2 mm (4x), M25 x 1.5 (with nut)	5 + PE	5
73000023	LS1 F7		10.5 - 15.5	Ø 3.2 mm (4x), M25 x 1.5 (with nut)	5 + PE	20
76143000	LS1 F7	6	7.5 - 15.5	Ø 3.2 mm (4x), M25 x 1.5 (with nut)	5 + PE	5

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® LS1 A1 8 contacts



EPIC® LS1 A3 8 contacts



Info

- Range of rotation: 330° in 15° increments

Suitable contacts:

- EPIC® LS1 Contacts male Page 622
- PU = 5 pieces: the contacts are included. 2 mm contact crimp range is 0.5 - 2.5 mm².
- PU = 20 pieces: the contacts must be ordered separately

Benefits

- The power connectors with the contact configurations of 5+PE and 3+PE+4 are designed for use in servomotors and servo assemblies.

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

EPIC® LS1 A1 8 contacts

- Panel-mount base, straight entry
- For male contacts crimp
- Housing with pre-assembled insulation

EPIC® LS1 A3 8 contacts

- Panel-mount base, angled, rotatable
- For male contacts crimp
- Housing with pre-assembled insulation

Technical data

Rated voltage (V)

630 V (2 mm contacts)
250 V (1 mm contacts)

Rated impulse voltage

6 kV (2 mm contacts)
4 kV (1 mm contacts)

Rated current (A)

26 A (2 mm contacts)
7 A (1 mm contacts)

Degree of soiling

3

Contact resistance

< 4 mOhm

Contacts

Gold-plated brass

Number of contacts

3 + PE + 4

Termination methods

Crimp termination: 0.5 - 2.5 mm² (2 mm contacts)
Crimp termination: 0.14 - 1.0 mm² (1 mm contacts)



Material

Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM



Protection rating

IP68 (10h / 1m)

Cycle of mechanical operation

500



Temperature range

-25°C - +125°C



VDE-tested

EPIC® LS1 A1 8 contacts

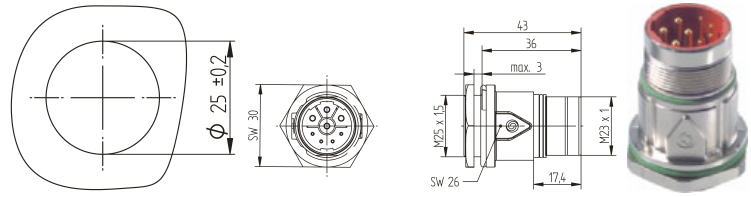
Certified production control: VDE-REG. no. 25

Article number	Article	Contacts included	Fastening type	Pin configuration	Pieces / PU
Type LS1 A1, 8-pin, for male contacts					
76004000	LS1 A1	8	Ø 2.7 mm (4x)	3 + PE + 4	5
76004510	LS1 A1		Ø 2.7 mm (4x)	3 + PE + 4	20
Type LS1 A3, angled, rotatable, 8-pin, for male contacts					
44420056	LS1 A3	8	Ø 2.7 mm (4x)	3 + PE + 4	5
44420057	LS1 A3		Ø 2.7 mm (4x)	3 + PE + 4	20

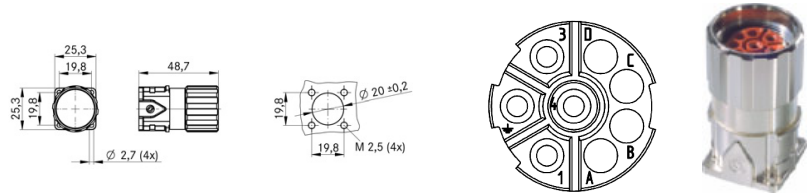
Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® LS1 G5 8 contacts



EPIC® LS1 A6 8 contacts



Suitable contacts:

EPIC® LS1 G5 8 contacts

- EPIC® LS1 Contacts male Page 622

EPIC® LS1 A6 8 contacts

- EPIC® LS1 Contacts female Page 622
- PU = 5 pieces: the contacts are included. 2 mm contact crimp range is 0.5 - 2.5 mm².
- PU = 20 pieces: the contacts must be ordered separately

Benefits

- The power connectors with the contact configurations of 5+PE and 3+PE+4 are designed for use in servomotors and servo assemblies.

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

EPIC® LS1 G5 8 contacts

- Panel-mount connector
- For male contacts crimp
- Housing with pre-assembled insulation

EPIC® LS1 A6 8 contacts

- Panel-mount base, straight entry
- For female contacts crimp
- Housing with pre-assembled insulation

Technical data

Rated voltage (V)

630 V (2 mm contacts)
250 V (1 mm contacts)

Rated impulse voltage

6 kV (2 mm contacts)
4 kV (1 mm contacts)

Rated current (A)

26 A (2 mm contacts)
7 A (1 mm contacts)

Degree of soiling

3

Contact resistance

< 4 mOhm

Contacts

Gold-plated brass

Number of contacts

3 + PE + 4

Termination methods

Crimp termination: 0.5 - 2.5 mm² (2 mm contacts)

Crimp termination: 0.14 - 1.0 mm² (1 mm contacts)



Material

Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM



Protection rating

IP68 (10h / 1m)

Cycle of mechanical operation

500



Temperature range

-25 °C - +125 °C



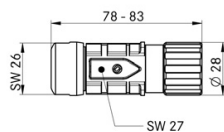
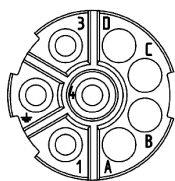
VDE-tested

Certified production control: VDE-REG. no. 25

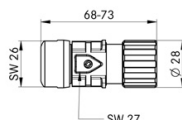
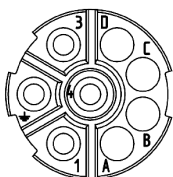
Article number	Article	Contacts included	Fastening type	Pin configuration	Pieces / PU
Type LS1 G5, 8-pin, for male contacts					
76154000	LS1 G5	8	M25 x 1.5 (with nut)	3 + PE + 4	5
76154510	LS1 G5		M25 x 1.5 (with nut)	3 + PE + 4	20
Type LS1 A6, 8-pin, for female contacts					
76084000	LS1 A6	8	Ø 2.7 mm (4x)	3 + PE + 4	5

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® LS1 D6 8 contacts



EPIC® LS1 D6 8 contacts (short)



Suitable contacts:

- EPIC® LS1 Contacts female Page 622
- PU = 5 pieces: the contacts are included. 2 mm contact crimp range is 0.5 - 2.5 mm².
- PU = 20 pieces: the contacts must be ordered separately

Benefits

- The power connectors with the contact configurations of 5+PE and 3+PE+4 are designed for use in servomotors and servo assemblies.

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

EPIC® LS1 D6 8 contacts

- Cable connector, long type
- For female contacts crimp
- Connectors with cable clamping range 14 - 17 mm for 2 mm contacts with cross-section of 4 mm²
- Housing with pre-assembled insulation
- In PU5, parts with the cable clamping ranges 8.5-11/10.5-15.5/7.5-15.5 mm include the 2 mm contacts with a cross-section of 0.5-2.5 mm²

EPIC® LS1 D6 8 contacts (short)

- Cable connector, short type
- For female contacts crimp
- Housing with pre-assembled insulation

Technical data

Rated voltage (V)

630 V (2 mm contacts)
250 V (1 mm contacts)

Rated impulse voltage

6 kV (2 mm contacts)
4 kV (1 mm contacts)

Rated current (A)

26 A (2 mm contacts)
7 A (1 mm contacts)

Degree of soiling

3

Contact resistance

< 4 mOhm

Contacts

Gold-plated brass

Number of contacts

3 + PE + 4

Termination methods

Crimp termination: 0.5 - 4.0 mm² (2 mm contacts)
Crimp termination: 0.14 - 1.0 mm² (1 mm contacts)



Material

Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM



Protection rating

IP68 (10h / 1m)

Cycle of mechanical operation

500



Temperature range

-25°C - +125°C



VDE-tested

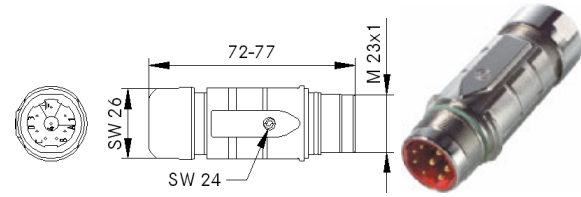
Certified production control: VDE-REG. no. 25

Article number	Article	Contacts included	Cable clamping range (mm)	Pin configuration	Pieces / PU
Type LS1 D6, 8-pin, for female contacts					
73000000	LS1 D6	8	8.5 - 11	3 + PE + 4	5
73000002	LS1 D6		8.5 - 11	3 + PE + 4	20
73000001	LS1 D6	8	10.5 - 15.5	3 + PE + 4	5
73000003	LS1 D6		10.5 - 15.5	3 + PE + 4	20
76124000	LS1 D6	8	7.5 - 15.5	3 + PE + 4	5
76124510	LS1 D6		7.5 - 15.5	3 + PE + 4	20
44420089	LS1 D6	8	14 - 17	3 + PE + 4	5
44420088	LS1 D6		14 - 17	3 + PE + 4	20
Type LS1 D6 short, 8-pin, for female contacts					
73000024	LS1 D6	8	8.5 - 11	3 + PE + 4	5
73000026	LS1 D6		8.5 - 11	3 + PE + 4	20
73000025	LS1 D6	8	10.5 - 15.5	3 + PE + 4	5
73000027	LS1 D6		10.5 - 15.5	3 + PE + 4	20
76124100	LS1 D6	8	7.5 - 15.5	3 + PE + 4	5
76124610	LS1 D6		7.5 - 15.5	3 + PE + 4	20

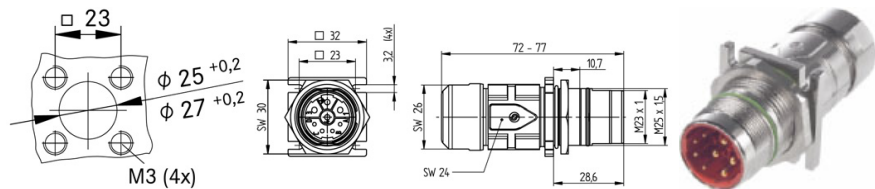
Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® LS1 F6 8 contacts



EPIC® LS1 F7 8 contacts



Suitable contacts:

- EPIC® LS1 Contacts male Page 622
- PU = 5 pieces: the contacts are included. 2 mm contact crimp range is 0.5 - 2.5 mm².
- PU = 20 pieces: the contacts must be ordered separately

Benefits

- The power connectors with the contact configurations of 5+PE and 3+PE+4 are designed for use in servomotors and servo assemblies.

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

EPIC® LS1 F6 8 contacts

- Cable coupler
- For male contacts crimp
- Connectors with cable clamping range 14 - 17 mm for 2 mm contacts with cross-section of 4 mm²
- Housing with pre-assembled insulation
- In PU5, parts with the cable clamping ranges 8.5-11/ 10.5-15.5/7.5-15.5 mm include the 2 mm contacts with a cross-section of 0.5-2.5 mm²

EPIC® LS1 F7 8 contacts

- Cable coupler with flange
- For male contacts crimp
- Housing with pre-assembled insulation

Technical data

Rated voltage (V)
630 V (2 mm contacts)
250 V (1 mm contacts)

Rated impulse voltage
6 kV (2 mm contacts)
4 kV (1 mm contacts)

Rated current (A)
26 A (2 mm contacts)
7 A (1 mm contacts)

Degree of soiling
3

Contact resistance
< 4 mOhm

Contacts
Gold-plated brass

Number of contacts
3 + PE + 4

Termination methods

Crimp termination: 0.5 - 4.0 mm² (2 mm contacts)
Crimp termination: 0.14 - 1.0 mm² (1 mm contacts)



Material

Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM



Protection rating

IP68 (10h / 1m)

Cycle of mechanical operation

500



Temperature range

-25 °C - +125 °C



VDE-tested

EPIC® LS1 F6 8 contacts

Certified production control: VDE-REG. no. 25

Article number	Article	Contacts included	Cable clamping range (mm)	Fastening type	Pin configuration	Pieces / PU
Type LS1 F6, 8-pin, for male contacts						
73000008	LS1 F6	8	8.5 - 11		3 + PE + 4	5
73000010	LS1 F6		8.5 - 11		3 + PE + 4	20
73000009	LS1 F6	8	10.5 - 15.5		3 + PE + 4	5
73000011	LS1 F6		10.5 - 15.5		3 + PE + 4	20
76134000	LS1 F6	8	7.5 - 15.5		3 + PE + 4	5
76134510	LS1 F6		7.5 - 15.5		3 + PE + 4	20
44420093	LS1 F6	8	14 - 17		3 + PE + 4	5
44420092	LS1 F6		14 - 17		3 + PE + 4	20
Type LS1 F7, 8-pin, for male contacts						
73000016	LS1 F7	8	8.5 - 11	Ø 3.2 mm (4x), M25 x 1.5 (with nut)	3 + PE + 4	5
73000017	LS1 F7	8	10.5 - 15.5	Ø 3.2 mm (4x), M25 x 1.5 (with nut)	3 + PE + 4	5
76144000	LS1 F7	8	7.5 - 15.5	Ø 3.2 mm (4x), M25 x 1.5 (with nut)	3 + PE + 4	5
76144510	LS1 F7		7.5 - 15.5	Ø 3.2 mm (4x), M25 x 1.5 (with nut)	3 + PE + 4	20

Photographs are not to scale and do not represent detailed images of the respective products.

Circular connectors

EPIC® CIRCON LS1 Contacts, tools, accessories

EPIC® LS1 Contacts male



EPIC® LS1 Contacts female



Article number	Article designation	Version	For design	Pieces / PU
Male contacts				
74033001	LS1 A SCEM 1 mm AU 0.14 - 1.0 (10)	1 mm male 0.14 - 1.0 mm ²	LSI A1, A3, G5	10
74033000	LS1 A SCEM 1 mm AU 0.14 - 1.0 (100)	1 mm male 0.14 - 1.0 mm ²	LSI A1, A3, G5	100
74034001	LS1 F SCEM 1 mm AU 0.14 - 1.0 (10)	1 mm male 0.14 - 1.0 mm ²	LS1 F6, F7	10
74034000	LS1 F SCEM 1 mm AU 0.14 - 1.0 (100)	1 mm male 0.14 - 1.0 mm ²	LS1 F6, F7	100
74033101	LS1 A SCEM 2 mm AU 0.5 - 2.5 (10)	2 mm male 0.5 - 2.5 mm ²	LSI A1, A3, G5	10
74033100	LS1 A SCEM 2 mm AU 0.5 - 2.5 (100)	2 mm male 0.5 - 2.5 mm ²	LSI A1, A3, G5	100
74034101	LS1 F SCEM 2 mm AU 0.5 - 2.5 (10)	2 mm male 0.5 - 2.5 mm ²	LS1 F6, F7	10
74034100	LS1 F SCEM 2 mm AU 0.5 - 2.5 (100)	2 mm male 0.5 - 2.5 mm ²	LS1 F6, F7	100
44420103	LS1 F SCEM 2 mm AU 4,0 (100)	2 mm male 4.0 mm ²	LS1 F6, F7	100
Female contacts				
74020601	EPIC® M23 BCEMS 1 mm AU 0.14 - 1.0 (10)	1 mm female slot 0.14 - 1.0 mm ²	M23 inserts (not D-Sub), LS1 D6, A6	10
74200600	EPIC® M23 BCEMS 1 mm AU 0.14 - 1.0 (100)	1 mm female slot 0.14 - 1.0 mm ²	M23 inserts (not D-Sub), LS1 D6, A6	100
74034501	LS1 D BCEMS 1 mm AU 0.14 - 1.0 (10)	1 mm female hyperboloid 0.14 - 1.0 mm ²	M23 inserts (not D-Sub), LS1 D6, A6	10
74034500	LS1 D BCEMS 1 mm AU 0.14 - 1.0 (100)	1 mm female hyperboloid 0.14 - 1.0 mm ²	M23 inserts (not D-Sub), LS1 D6, A6	100
74034601	LS1 D BCEMD 2 mm AU 0.5 - 2.5 (10)	2 mm female hyperboloid 0.5 - 2.5 mm ²	LS1 D6, A6	10
74034600	LS1 D BCEMD 2 mm AU 0.5 - 2.5 (100)	2 mm female hyperboloid 0.5 - 2.5 mm ²	LS1 D6, A6	100
44420104	LS1 D BCEMD 2 mm AU 4,0 (10)	2 mm female hyperboloid 4 mm ²	LS1 D6	10
44420105	LS1 D BCEMD 2 mm AU 4,0 (100)	2 mm female hyperboloid 4 mm ²	LS1 D6	100
44429001	EPIC CIRCON CCBG 2MM 1.0-2.5 (3000) RE	2 mm female crimp	LS1 D6, A6	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® LS1 Tools



Article number	Article	Version	Pieces / PU
Tools			
11148000	Crimping tool	In tool case, without locator	1
11148001	4-mandrel digital crimping tool	In tool case, without locator	1
11148002	Crimping machine	Pneumatic for 5 - 10 bar, locator not included	1
11148300	Locator for EPIC® CIRCON		1
75017400	LS1 removal tool for 1 mm contacts	For housing type A, G	1
75017500	LS1 removal tool for 2 mm contacts	For housing type A, G	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® LS1 Accessories



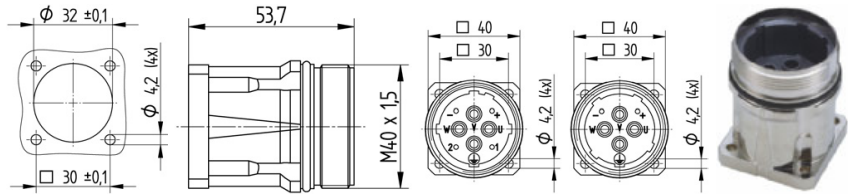
Article number	Article	Version	Pieces / PU
Accessories			
75018310	LS1 A, G, F protection cap, plastic cord with cable lug	Metal cap for A1, F6, F7, G5	20
75007810	M23-LS1 A, B, F, G protective cap	Plastic cap for A1, F6	20
75007710	M23-LS1 D protective cap	Plastic cap for D6, A6	20
75018010	M23 A, B, F, G protective cap, plastic cord with cable lug	Metal cap for A1, F6	20
75018110	M23 A protective cap, plastic cord with grommet	Metal cap for A1	20
55001310	SILVYN Adapter LS1/M25x1,5	For clamping range 8.5 - 11 mm and 10.5 - 15.5 mm	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

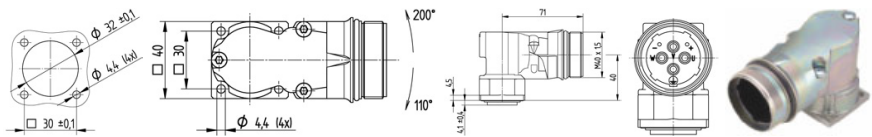
New

EPIC® LS1.5 A1



New

EPIC® LS1.5 A3



Suitable contacts:

- EPIC® LS1.5 Contacts male Page 626
- The contacts have to be ordered separately

Benefits

- The power connectors with the contact configurations of 3+PE+2 and 3+PE+4 are designed for use in servomotors and servo assemblies.
- Robust against mechanical impacts

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

EPIC® LS1.5 A1

- Panel-mount base, straight entry
- For male contacts crimp
- Housing with pre-assembled insulation

EPIC® LS1.5 A3

- Panel-mount base, angled, rotatable
- For male contacts crimp
- Housing with pre-assembled insulation

Suitable tools

- EPIC® LS1.5 Tools refer to page 626

Technical data

Rated voltage (V)

630 V (3.6 mm contacts)
250 V (2 mm contacts)

Rated impulse voltage

6 kV (3.6 mm contacts)
4 kV (2 mm contacts)

Rated current (A)

70 A (3.6-mm contacts) at 25 °C
30 A (2-mm contacts) at 25 °C

Degree of soiling
3

Contacts
Gold-plated brass

Number of contacts
3 + PE + 2
3 + PE + 4

Termination methods
Crimp termination: 0.75 - 10 mm² (3.6 mm contacts)
Crimp termination: 0.14 - 4.0 mm² (2 mm contacts)



Material
Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM



Protection rating
IP67

Cycle of mechanical operation
50



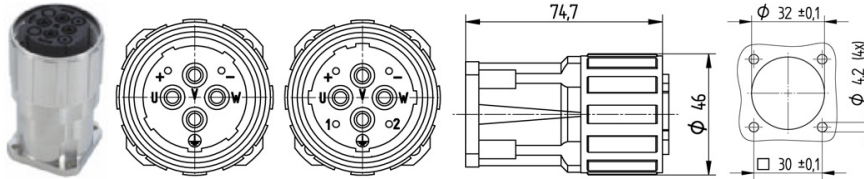
Temperature range
-20 °C to +125 °C

Article number	Article	Fastening type	Pin configuration	Pieces / PU
Type LS 1.5 A1 for male contacts				
44429308	EPIC® LS1.5 A1	Ø 4.2 mm (4x)	3 + PE + 2	1
44429309	EPIC® LS1.5 A1	Ø 4.2 mm (4x)	3 + PE + 4	1
Type LS 1.5 A3 for male contacts				
44429306	EPIC® LS1.5 A3	Ø 4.2 mm (4x)	3 + PE + 2	1
44429307	EPIC® LS1.5 A3	Ø 4.2 mm (4x)	3 + PE + 4	1

Photographs are not to scale and do not represent detailed images of the respective products.

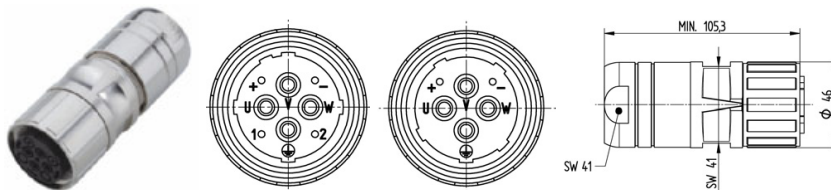
New

EPIC® LS1.5 A6



New

EPIC® LS1.5 D6



Info

- EMC protection

Suitable contacts:

- EPIC® LS1.5 Contacts female Page 626
- The contacts have to be ordered separately

Application range

- Plant engineering
- Servo drives and servo assemblies

Benefits

- EPIC® LS1.5 A6**
- The power connectors with the contact configurations of 3+PE+2 and 3+PE+4 are designed for use in servomotors and servo assemblies.
 - Robust against mechanical impacts

- EPIC® LS1.5 D6**
- The power connectors with the contact configurations of 3+PE+2 and 3+PE+4 are designed for use in servomotors and servo assemblies.
 - Faster, easier screen contact
 - Robust against mechanical impacts

Product features

- EPIC® LS1.5 A6**
- Panel-mount base, straight entry
 - For female contacts crimp
 - Housing with pre-assembled insulation
- EPIC® LS1.5 D6**
- Cable connector
 - For female contacts crimp
 - Housing with pre-assembled insulation

Suitable tools

- EPIC® LS1.5 Tools refer to page 626

Technical data

- Rated voltage (V)**
630 V (3.6 mm contacts)
250 V (2 mm contacts)
- Rated impulse voltage**
6 kV (3.6 mm contacts)
4 kV (2 mm contacts)
- Rated current (A)**
70 A (3.6-mm contacts) at 25 °C
30 A (2-mm contacts) at 25 °C

Degree of soiling
3

Contacts
Gold-plated brass

Number of contacts
3 + PE + 2
3 + PE + 4

Termination methods
Crimp termination: 0.75 - 16 mm² (3.6 mm contacts)
Crimp termination: 0.14 - 4.0 mm² (2 mm contacts)



Material
Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM



Protection rating
IP67

Cycle of mechanical operation
50



Temperature range
-20°C to +125°C

Article number	Article	Cable clamping range (mm)	Fastening type	Pin configuration	Pieces / PU
Type LS1.5 A6 for female contacts					
44429316	EPIC® LS1.5 A6		Ø 4.2 mm (4x)	3 + PE + 2	1
44429317	EPIC® LS1.5 A6		Ø 4.2 mm (4x)	3 + PE + 4	1
Type LS1.5 D6 for female contacts					
44429310	EPIC® LS1.5 D6	9 - 14		3 + PE + 2	1
44429311	EPIC® LS1.5 D6	14 - 20.5		3 + PE + 2	1
44429312	EPIC® LS1.5 D6	20.5 - 26.5		3 + PE + 2	1
44429313	EPIC® LS1.5 D6	9 - 14		3 + PE + 4	1
44429314	EPIC® LS1.5 D6	14 - 20.5		3 + PE + 4	1
44429315	EPIC® LS1.5 D6	20.5 - 26.5		3 + PE + 4	1

Photographs are not to scale and do not represent detailed images of the respective products.

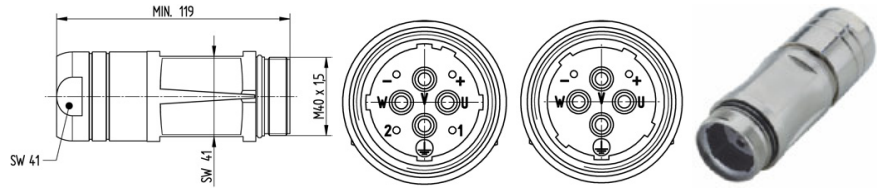
New

EPIC® LS1.5 F6



Info

- EMC protection



Suitable contacts:

- EPIC® LS1.5 Contacts male Page 626
- The contacts have to be ordered separately

Benefits

- The power connectors with the contact configurations of 3+PE+2 and 3+PE+4 are designed for use in servomotors and servo assemblies.
- Faster, easier screen contact
- Robust against mechanical impacts

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

- Cable coupler
- For male contacts crimp
- Housing with pre-assembled insulation

Suitable tools

- EPIC® LS1.5 Tools refer to page 626

Technical data

Rated voltage (V)

630 V (3.6 mm contacts)
250 V (2 mm contacts)

Rated impulse voltage

6 kV (3.6 mm contacts)
4 kV (2 mm contacts)

Rated current (A)

70 A (3.6-mm contacts) at 25 °C
30 A (2-mm contacts) at 25 °C

Degree of soiling

3

Contacts

Gold-plated brass

Number of contacts

3 + PE + 2
3 + PE + 4

Termination methods

Crimp termination: 0.75 - 16 mm² (3.6 mm contacts)
Crimp termination: 0.14 - 4.0 mm² (2 mm contacts)



Material

Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM



Protection rating

IP67

Cycle of mechanical operation

50



Temperature range

-20 °C to +125 °C

Article number	Article	Cable clamping range (mm)	Pin configuration	Pieces / PU
Type LS1.5 F6 for male contacts				
44429300	EPIC® LS1.5 F6	9 - 14	3 + PE + 2	1
44429301	EPIC® LS1.5 F6	14 - 20.5	3 + PE + 2	1
44429302	EPIC® LS1.5 F6	20.5 - 26.5	3 + PE + 2	1
44429303	EPIC® LS1.5 F6	9 - 14	3 + PE + 4	1
44429304	EPIC® LS1.5 F6	14 - 20.5	3 + PE + 4	1
44429305	EPIC® LS1.5 F6	20.5 - 26.5	3 + PE + 4	1

Photographs are not to scale and do not represent detailed images of the respective products.

Circular connectors

EPIC® LS1.5 Contacts, tools, accessories

New

EPIC® LS1.5 Contacts male



New

EPIC® LS1.5 Contacts female



New

EPIC® LS1.5 Tools



Suitable tools

EPIC® LS1.5 Contacts female

- Crimping tool for termination of 16 mm² wires are available upon request

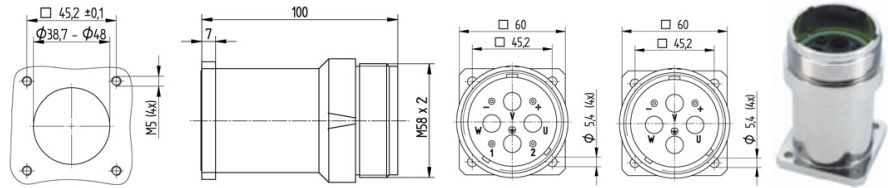
Article number	Article designation	Description	Version	For design	Pieces / PU
3.6 mm male contacts					
44429334	LS1.5 A SCEM 3,6MM AU 0,75-1,5		3.6 mm male 0.75 - 1.5	for type A1, A3	10
44429335	LS1.5 A SCEM 3,6MM AU 1,0-2,5		3.6 mm male 1.0 - 2.5 mm ²	for type A1, A3	10
44429336	LS1.5 A SCEM 3,6MM AU 1,0-4,0		3.6 mm male 1.0 - 4.0 mm ²	for type A1, A3	10
44429337	LS1.5 A SCEM 3,6MM AU 4,0-6,0		3.6 mm male 4.0 - 6.0 mm ²	for type A1, A3	10
44429338	LS1.5 A SCEM 3,6MM AU 6,0-10,0		3.6 mm male 6.0 - 10.0 mm ²	for type A1, A3	10
44429326	LS1.5 F SCEM 3,6MM AU 1,0-2,5		3.6 mm male 1.0 - 2.5 mm ²	for type F6	10
44429327	LS1.5 F SCEM 3,6MM AU 2,5-4,0		3.6 mm male 2.5 - 4.0 mm ²	for type F6	10
44429328	LS1.5 F SCEM 3,6MM AU 4,0-6,0		3.6 mm male 4.0 - 6.0 mm ²	for type F6	10
44429329	LS1.5 F SCEM 3,6MM AU 6,0-16,0		3.6 mm male 6.0 - 16.0 mm ²	for type F6	10
2 mm male contacts					
44429339	LS1.5 A SCEM 2MM AU 0,14-0,25		2 mm male 0.14 - 0.25 mm ²	for type A1, A3	10
44429340	LS1.5 A SCEM 2MM AU 0,25-1,0		2 mm male 0.25 - 1.0 mm ²	for type A1, A3	10
44429341	LS1.5 A SCEM 2MM AU 0,75-1,5		2 mm male 0.75 - 1.5 mm ²	for type A1, A3	10
44429342	LS1.5 A SCEM 2MM AU 1,0-2,5		2 mm male 1.0 - 2.5 mm ²	for type A1, A3	10
44429343	LS1.5 A SCEM 2MM AU 4,0		2 mm male 4.0 mm ²	for type A1, A3	10
44429330	LS1.5 F SCEM 2MM AU 0,25-1,0		2 mm male 0.25 - 1.0 mm ²	for type F6	10
44429331	LS1.5 F SCEM 2MM AU 0,75-1,5		2 mm male 0.75 - 1.5 mm ²	for type F6	10
44429332	LS1.5 F SCEM 2MM AU 1,0-2,5		2 mm male 1.0 - 2.5 mm ²	for type F6	10
44429333	LS1.5 F SCEM 2MM AU 4,0		2 mm male 4.0 mm ²	for type F6	10
3.6 mm female contacts					
44429318	LS1.5 D BCEM 3,6MM AU 1,0-2,5		3.6 mm female 1.0 - 2.5 mm ²	for type D6, A6	10
44429319	LS1.5 D BCEM 3,6MM AU 2,5-4,0		3.6 mm female 2.5 - 4.0 mm ²	for type D6, A6	10
44429320	LS1.5 D BCEM 3,6MM AU 4,0-6,0		3.6 mm female 4.0 - 6.0 mm ²	for type D6, A6	10
44429321	LS1.5 D BCEM 3,6MM AU 6,0-16,0		3.6 mm female 6.0 - 16.0 mm ²	for type D6, A6	10
2 mm female contacts					
44429322	LS1.5 D BCEM 2MM AU 0,25-1,0		2 mm female 0.25 - 1.0 mm ²	for type D6, A6	10
44429323	LS1.5 D BCEM 2MM AU 0,75-1,5		2 mm female 0.75 - 1.5 mm ²	for type D6, A6	10
44429324	LS1.5 D BCEM 2MM AU 1,0-2,5		2 mm female 1.0 - 2.5 mm ²	for type D6, A6	10
44429325	LS1.5 D BCEM 2MM AU 4,0		2 mm female 4.0 mm ²	for type D6, A6	10
Crimping tool					
44429367	LS1.5 CRIMPING TOOL 0.08 - 6.0	4-mandrel digital crimping tool including locator	0.14 - 6.0 mm ²	for LS1.5, LS3	1
44429368	LS1.5 CRIMPING TOOL 6.0 - 10.0	4-mandrel digital crimping tool including locator	6.0 - 10.0 mm ²	for LS1.5	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX

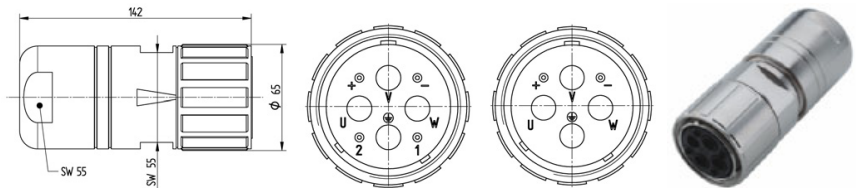
New

EPIC® LS3 A1



New

EPIC® LS3 D6



Suitable contacts:

EPIC® LS3 A1

- EPIC® LS3 Contacts male Page 629

EPIC® LS3 D6

- EPIC® LS3 Contacts female Page 629
- The contacts have to be ordered separately

Benefits

- The power connectors with the contact configurations of 3+PE+2 and 3+PE+4 are designed for use in servomotors and servo assemblies.
- Robust against mechanical impacts
- EMC protection

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

EPIC® LS3 A1

- Panel-mount base, straight entry
- For male contacts crimp
- Housing with pre-assembled insulation

EPIC® LS3 D6

- Cable connector
- For female contacts crimp
- Housing with pre-assembled insulation

Suitable tools

- EPIC® LS3 Tools refer to page 629

Technical data

Rated voltage (V)

630 V (10 mm contacts)
250 V (1.6 mm contacts)

Rated impulse voltage

6 kV (10 mm contacts)
4 kV (1.6 mm contacts)

Rated current (A)

150 A (10-mm contacts) at 25 °C
12 A (1.6-mm contacts) at 25 °C

Degree of soiling

3

Contacts

Silver-plated brass
Gold-plated brass

Number of contacts

3 + PE + 2
3 + PE + 4

Termination methods

Crimp termination 10 - 50 mm² (10 mm contacts)
Crimp termination 0.75 - 1.5 mm² (1.6 mm contacts)



Material

Housing: anodised aluminium
Insert: PA
Seal: FPM



Protection rating

IP 67

Cycle of mechanical operation

50



Temperature range

-20 °C - +120 °C

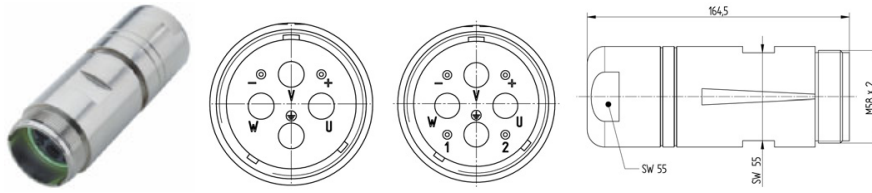
Article number	Article	Cable clamping range (mm)	Fastening type	Pin configuration	Pieces / PU
Type LS3 A1 for male contacts					
44429352	LS3 A1		Ø 4.2 mm (4x)	3 + PE + 2	1
44429353	LS3 A1		Ø 4.2 mm (4x)	3 + PE + 4	1
Type LS3 D6 for female contacts					
44429344	LS3 D6	17 - 25		3 + PE + 2	1
44429345	LS3 D6	25 - 36		3 + PE + 2	1
44429346	LS3 D6	17 - 25		3 + PE + 4	1
44429347	LS3 D6	25 - 36		3 + PE + 4	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

EPIC® LS3 F6



Suitable contacts:

- EPIC® LS3 Contacts male Page 629
- The contacts have to be ordered separately

Benefits

- The power connectors with the contact configurations of 3+PE+2 and 3+PE+4 are designed for use in servomotors and servo assemblies.
- Robust against mechanical impacts
- EMC protection

Application range

- Plant engineering
- Servo drives and servo assemblies

Product features

- Cable coupler
- For male contacts crimp
- Housing with pre-assembled insulation

Suitable tools

- EPIC® LS3 Tools refer to page 629

Technical data

Rated voltage (V)

630 V (10 mm contacts)
250 V (1.6 mm contacts)

Rated impulse voltage

6 kV (10 mm contacts)
4 kV (1.6 mm contacts)

Rated current (A)

150 A (10-mm contacts) at 25 °C
12 A (1.6-mm contacts) at 25 °C

Degree of soiling

3

Contacts

Silver-plated brass
Gold-plated brass

Number of contacts

3 + PE + 2
3 + PE + 4

Termination methods

Crimp termination 10 - 50 mm² (10 mm contacts)
Crimp termination 0.75 - 1.5 mm² (1.6 mm contacts)



Material

Housing: anodised aluminium
Insert: PA
Seal: FPM



Protection rating

IP 67

Cycle of mechanical operation

50



Temperature range

-20°C - +120°C

Article number	Article	Cable clamping range (mm)	Pin configuration	Pieces / PU
Type LS3 F6 for male contacts				
44429348	LS3 F6	17 - 25	3 + PE + 2	1
44429349	LS3 F6	25 - 36	3 + PE + 2	1
44429350	LS3 F6	17 - 25	3 + PE + 4	1
44429351	LS3 F6	25 - 36	3 + PE + 4	1

Photographs are not to scale and do not represent detailed images of the respective products.

New

EPIC® LS3 Contacts male

RoHS ✓



New

EPIC® LS3 Contacts female

RoHS ✓



New

EPIC® LS3 Tools

RoHS ✓



Article number	Article designation	Description	Version	For design	Pieces / PU
EPIC® LS3 male contacts					
44429360	LS3 A, F SCEM 10MM AG 10		10 mm male 10 mm ²	for type A1, F6	4
44429361	LS3 A, F SCEM 10MM AG 16		10 mm male 16 mm ²	for type A1, F6	4
44429362	LS3 A, F SCEM 10MM AG 25		10 mm male 25 mm ²	for type A1, F6	4
44429363	LS3 A, F SCEM 10MM AG 35		10 mm male 35 mm ²	for type A1, F6	4
44429364	LS3 A, F SCEM 10MM AG 50		10 mm male 50 mm ²	for type A1, F6	4
44429365	LS3 A, F SCEM 1.6MM AU 0.75-1.5		1.6 mm male 0.75 - 1.5 mm ²	for type A1, F6	4
EPIC® LS3 female contacts					
44429354	LS3 D BCEM 10MM AG 10		10 mm female 10 mm ²	for type D6	4
44429355	LS3 D BCEM 10MM AG 16		10 mm female 16 mm ²	for type D6	4
44429356	LS3 D BCEM 10MM AG 25		10 mm female 25 mm ²	for type D6	4
44429357	LS3 D BCEM 10MM AG 35		10 mm female 50 mm ²	for type D6	4
44429358	LS3 D BCEM 10MM AG 50		10 mm female 50 mm ²	for type D6	4
44429359	LS3 D BCEM 1.6MM AU 0.75-1.5		1.6 mm female 0.75 - 1.5 mm ²	for type D6	4
Crimping tool					
44429366	LS3 crimping tool 10.0 - 50.0	Electro-hydraulic crimping tool includes charging device, accumulator and crimping dies for 10 - 50 mm ²	10.0 - 50.0 mm ²	for LS3	1
44429367	LS1.5 CRIMPING TOOL 0.08 - 6.0	4-mandrel digital crimping tool including locator	0.14 - 6.0 mm ²	for LS1.5, LS3	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® LS1 Kits 6pole



Article number	Pieces / PU
75009690	1

Article numbers for single components

- LS1 D6 76123000 (Page 616)

EPIC KIT LS1 D6 6-POL FEMALE



- Pin configuration 5+PE, for female contacts 2 mm Ø
- Machined crimp contacts 0.5 - 2.5 mm² are included
- D6 cable connector, clamping range 7.5 - 15.5 mm



Article number	Pieces / PU
75009691	1

Article numbers for single components

- LS1 A1 76003000 (Page 614)

EPIC KIT LS1 A1 6-POL MALE



- Pin configuration 5+PE, for male contacts 2 mm Ø
- Machined crimp contacts 0.5 - 2.5 mm² are included
- A1 panel-mount box, front wall mounting



Article number	Pieces / PU
75009692	1

Article numbers for single components

- LS1 A3 44420058 (Page 614)

EPIC KIT LS1 A3 6-POL MALE



- Pin configuration 5+PE, for male contacts 2 mm Ø
- Machined crimp contacts 0.5 - 2.5 mm² are included
- A3 panel-mount box, angled and rotatable, front wall mounting



Article number	Pieces / PU
75009693	1

Article numbers for single components

- LS1 F6 76133000 (Page 617)

EPIC KIT LS1 F6 6-POL MALE



- Pin configuration 5+PE, for male contacts 2 mm Ø
- Machined crimp contacts 0.5 - 2.5 mm² are included
- F6 cable coupler, clamping range 7.5 - 15.5 mm



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Technical data

Rated voltage (V)
630 V (2 mm contacts)

Rated current (A)
26 A (2 mm contacts)

Number of contacts
5 + PE

EPIC KIT LS1 D6 8-POL FEMALE



- Pin configuration 3+PE+4, for female contacts 2 mm Ø + 1 mm Ø
- Machined crimp contacts 0.5 - 2.5 mm² and 0.14 - 1.0 mm² are included
- D6 cable connector, clamping range 7.5 - 15.5 mm

Article number	Pieces / PU
75009694	1

Article numbers for single components

- LS1 D6 76124000 (Page 620)

EPIC KIT LS1 A1 8-POL MALE



- Pin configuration 3+PE+4, for male contacts 2 mm Ø + 1 mm Ø
- Machined crimp contacts 0.5 - 2.5 mm² and 0.14 - 1.0 mm² are included
- A1 panel-mount box, front wall mounting

Article number	Pieces / PU
75009695	1

Article numbers for single components

- LS1 A1 76004000 (Page 618)

EPIC KIT LS1 A3 8-POL MALE



- Pin configuration 3+PE+4, for male contacts 2 mm Ø + 1 mm Ø
- Machined crimp contacts 0.5 - 2.5 mm² and 0.14 - 1.0 mm² are included
- A3 panel-mount box, angled and rotatable, front wall mounting

Article number	Pieces / PU
75009696	1

Article numbers for single components

- LS1 A3 44420056 (Page 618)

EPIC KIT LS1 F6 8-POL MALE



- Pin configuration 3+PE+4, for male contacts 2 mm Ø + 1 mm Ø
- Machined crimp contacts 0.5 - 2.5 mm² and 0.14 - 1.0 mm² are included
- F6 cable coupler, clamping range 7.5 - 15.5 mm

Article number	Pieces / PU
75009697	1

Article numbers for single components

- LS1 F6 76134000 (Page 621)



Info

- Complete connectors - easy to order

Benefits

- Uncomplicated ordering
- No misplaced orders
- Pre-packed kits with compatible components

Technical data

- Rated voltage (V)**
630 V (2 mm contacts)
250 V (1 mm contacts)
- Rated current (A)**
26 A (2 mm contacts)
7 A (1 mm contacts)
- Number of contacts**
3 + PE + 4

EPIC® LS1 Kits 8pole



New

EPIC® POWERLOCK A1 C



New

EPIC® POWERLOCK A6 C



Info

- Connector for unscreened single-core power cables

Suitable contacts:

- EPIC® POWERLOCK Crimp contacts Page 635
- Housing without contact, order contact separately

Benefits

- Resistant to mechanical influences in harsh environmental conditions
- Connectors in harmonised colours according to European standards
- Every colour has a different coding to prevent incorrect plugging
- USA colour-codes are available upon request

Application range

- For renewable energy plants e.g. wind power
- For mobile and stationary power distribution
- For the connection of motors, transformers and generators
- Light & sound technology

Product features

- Panel-mount base, straight entry
- Contact fixing by contact retention pin, each pin can only be used once
- Housing without contact, order contact separately

Technical data

Rated voltage (V)
1000 V

Rated impulse voltage
8 kV

Rated current (A)
Max. crimp 660 A

Degree of soiling
3

Contacts
Crimp termination: copper, silver-plated

Number of contacts
1

Termination methods
Crimp termination: 35 - 240 mm²



Material
Housing: PBT
Contact retention pin: PA



Protection rating
IP 67 (maximum, dependant on cable gland used)
IP 20 (unmated)

Cycle of mechanical operation
500



Temperature range
-25°C - +125°C

Article number	Article	Fastening type	Pin configuration	Pieces / PU
Type POWERLOCK A1, panel-mount box, drain for contact with M12 threaded post				
44420221	POWERLOCK A1 PE/GN	Ø 5.5 mm (4x)	PE, Green	1
44420222	POWERLOCK A1 N/BL	Ø 5.5 mm (4x)	N, Blue	1
44420223	POWERLOCK A1 L1/BN	Ø 5.5 mm (4x)	L1, Brown	1
44420224	POWERLOCK A1 L2/BK	Ø 5.5 mm (4x)	L2, Black	1
44420225	POWERLOCK A1 L3/GY	Ø 5.5 mm (4x)	L3, Grey	1
L1/red for direct current applications in conjunction with L2/black				
44420316	POWERLOCK A1 L1/RD	Ø 5.5 mm (4x)	L1, Red	1
Type POWERLOCK A6, panel-mount box, source for contact with M12 threaded post				
44420226	POWERLOCK A6 PE/GN	Ø 5.5 mm (4x)	PE, Green	1
44420227	POWERLOCK A6 N/BL	Ø 5.5 mm (4x)	N, Blue	1
44420228	POWERLOCK A6 L1/BN	Ø 5.5 mm (4x)	L1, Brown	1
44420229	POWERLOCK A6 L2/BK	Ø 5.5 mm (4x)	L2, Black	1
44420230	POWERLOCK A6 L3/GY	Ø 5.5 mm (4x)	L3, Grey	1
L1/red for direct current applications in conjunction with L2/black				
44420317	POWERLOCK A6 L1/RD	Ø 5.5 mm (4x)	L1, Red	1

Photographs are not to scale and do not represent detailed images of the respective products.

New

EPIC® POWERLOCK D6 C



New

EPIC® POWERLOCK F6 C



Info

- Connector for unscreened single-core power cables

Suitable contacts:

- EPIC® POWERLOCK Crimp contacts Page 635
- Housing without contact, order contact separately

Benefits

- Resistant to mechanical influences in harsh environmental conditions
- Connectors in harmonised colours according to European standards
- Every colour has a different coding to prevent incorrect plugging
- USA colour-codes are available upon request

Application range

- For renewable energy plants e.g. wind power
- For mobile and stationary power distribution
- For the connection of motors, transformers and generators
- Light & sound technology

Product features

- Straight connector with M40 thread
- Order SKINTOP® ST-M 40 or STR-M 40 separately
- Contact fixing by contact retention pin, each pin can only be used once
- Housing without contact, order contact separately

Technical data

Rated voltage (V)	1000 V
Rated impulse voltage	8 kV
Rated current (A)	Max. crimp 660 A
Degree of soiling	3
Contacts	Crimp termination: copper, silver-plated
Number of contacts	1
Termination methods	Crimp termination: 35 - 240 mm ²
Material	Housing: PBT Contact retention pin: PA
IP	Protection rating IP 67 (maximum, dependant on cable gland used) IP 20 (unmated)
Cycle of mechanical operation	500
Temperature range	-25 °C - +125 °C

Article number	Article	M	Pin configuration	Pieces / PU
Type POWERLOCK D6, cable connector, source for crimp contact				
44420216	POWERLOCK D6 PE/GN	40	PE, Green	1
44420217	POWERLOCK D6 N/BL	40	N, Blue	1
44420218	POWERLOCK D6 L1/BN	40	L1, Brown	1
44420219	POWERLOCK D6 L2/BK	40	L2, Black	1
44420220	POWERLOCK D6 L3/GY	40	L3, Grey	1
L1/red for direct current applications in conjunction with L2/black				
44420319	POWERLOCK A1 L1/RD	40	L1, Red	1
Type POWERLOCK F6, coupling connector, drain for crimp contact				
44420211	POWERLOCK F6 PE/GN	40	PE, Green	1
44420212	POWERLOCK F6 N/BL	40	N, Blue	1
44420213	POWERLOCK F6 L1/BN	40	L1, Brown	1
44420214	POWERLOCK F6 L2/BK	40	L2, Black	1
44420215	POWERLOCK F6 L3/GY	40	L3, Grey	1
L1/red for direct current applications in conjunction with L2/black				
44420318	POWERLOCK F6 L1/RD	40	L1, Red	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® ST-M refer to page 652

EPIC® POWERLOCK BOX C



Info

- Can be locked to prevent unauthorised disconnection

Benefits

- Guarantees the correct sequence is followed when connecting and disconnecting a set of connectors (PE, N, L1, L2, L3)
- Every colour has a different coding to prevent incorrect plugging
- IP 20 finger-protected
- Integrated micro-switch that can be connected to circuit breaker or alarm circuit
- For connecting to standard EPIC® POWERLOCK connectors

Application range

- Alternative energy installations
- For mobile and stationary power distribution
- For the connection of motors, transformers and generators
- Light & sound technology

Housings

- Sealed security lid is optional

Product features

- Included: Contacts with M12 threaded post
- Cable connector for microswitch optional
- 19" housing with height unit 2HE/2U

Technical data

Rated voltage (V)
1000 V

Rated current (A)
Max. crimp 660 A

Degree of soiling
3

Contacts
Crimp termination: copper, silver-plated

Number of contacts
4 + PE

Termination methods
Crimp termination: 35 - 240 mm²



Protection rating
IP 65 (latched)

Cycle of mechanical operation
500



Temperature range
-25°C - +85°C

Article number	Article	Fastening type	Pin configuration	Pieces / PU
POWERLOCK BOX A1, panel-mount base, drain with M12 threaded post				
44420288	POWERLOCK BOX A1 C	Ø 6.5 mm (4x)	4+PE	1
POWERLOCK BOX A1, panel-mount base with cover, drain with M12 threaded post				
44420289	POWERLOCK BOX A1 CD	Ø 6.5 mm (4x)	4+PE	1
POWERLOCK BOX A6, panel-mount base, source with M12 threaded post				
44420284	POWERLOCK BOX A6 C	Ø 6.5 mm (4x)	4+PE	1
POWERLOCK BOX A6, panel-mount base with cover, source with M12 threaded post				
44420285	POWERLOCK BOX A6 CD	Ø 6.5 mm (4x)	4+PE	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

EPIC® POWERLOCK Crimp contacts



Info

- Max. crimp 660 A
- Do not plug with screw-type (400 A)

Article number	Article designation	Version	PU
Drain - contact with M12 threaded post, for type POWERLOCK A1 C			
44420260	POWERLOCK SP M12	Contact Drain, M12 Thread for cable lugs	1
Source - contact with M12 threaded post for type POWERLOCK A6 C			
44420261	POWERLOCK QP M12	Lamella contact source, M12 thread for cable lug	1
Source - crimp contact for type POWERLOCK D6 C			
44420291	POWERLOCK QCM 50	50 mm ²	1
44420292	POWERLOCK QCM 70	70 mm ²	1
44420236	POWERLOCK QCM 95	95 mm ²	1
44420238	POWERLOCK QCM 120	120 mm ²	1
44420257	POWERLOCK QCM 150	150 mm ²	1
44420239	POWERLOCK QCM 185	185 mm ²	1
44420240	POWERLOCK QCM 240	240 mm ²	1
Drain - Crimp contact, for type POWERLOCK F6 C			
44420294	POWERLOCK SCM 50	50 mm ²	1
44420295	POWERLOCK SCM 70	70 mm ²	1
44420231	POWERLOCK SCM 95	95 mm ²	1
44420233	POWERLOCK SCM 120	120 mm ²	1
44420256	POWERLOCK SCM 150	150 mm ²	1
44420234	POWERLOCK SCM 185	185 mm ²	1
44420235	POWERLOCK SCM 240	240 mm ²	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® POWERLOCK Tools



Article number	Article	Version	PU
Tools			
44420243	POWERLOCK DISCONNECTION TOOL	for mated connection	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® POWERLOCK Accessories



Article number	Article	For design	Version	PU
Protective caps				
44420252	POWERLOCK PROTECTION CAP A1	for type A1	IP54	1
44420253	POWERLOCK PROTECTION CAP A6	for type A6	IP54	1
44420251	POWERLOCK PROTECTION CAP D6	for type D6	IP54	1
44420250	POWERLOCK PROTECTION CAP F6	for type F6	IP54	1
Spare contact retention pin				
44420259	POWERLOCK RETENTION PIN A1, A6	for type A1, A6		1
44420255	POWERLOCK RETENTION PIN D6	for type D6		1
44420254	POWERLOCK RETENTION PIN F6	for type F6		1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® POWERLOCK A1 S



EPIC® POWERLOCK A6 S



Info

- Connector for unscreened single-core power cables

Suitable contacts:

- EPIC® POWERLOCK Screw Contacts Page 639
- Housing without contact, order contact separately

Benefits

- Resistant to mechanical influences in harsh environmental conditions
- Connectors in harmonised colours according to European standards
- Every colour has a different coding to prevent incorrect plugging
- USA colour-codes are available upon request

Application range

- For renewable energy plants e.g. wind power
- For mobile and stationary power distribution
- For the connection of motors, transformers and generators
- Light & sound technology

Product features

- Panel-mount base, straight entry
- Contact fixing by contact retention pin, each pin can only be used once
- Housing without contact, order contact separately

Technical data

Rated voltage (V)
1000 V

Rated impulse voltage
8 kV

Rated current (A)
Screw max. 400 A

Degree of soiling
3

Contacts
Screw termination: silver-plated brass

Number of contacts
1

Termination methods
Screw termination: 50 - 120 mm²



Material
Housing: PBT
Contact retention pin: PA



Protection rating
IP 67 (maximum, dependant on cable gland used)
IP 20 (unmated)

Cycle of mechanical operation
500



Temperature range
-25°C - +125°C

Article number	Article	Fastening type	Pin configuration	Pieces / PU
Type POWERLOCK A1, panel-mount box, drain for contact with M 12 threaded post				
44420272	POWERLOCK A1 PE/GN	Ø 5.5 mm (4x)	PE, Green	1
44420273	POWERLOCK A1 N/BL	Ø 5.5 mm (4x)	N, Blue	1
44420274	POWERLOCK A1 L1/BN	Ø 5.5 mm (4x)	L1, Brown	1
44420275	POWERLOCK A1 L2/BK	Ø 5.5 mm (4x)	L2, Black	1
44420276	POWERLOCK A1 L3/GY	Ø 5.5 mm (4x)	L3, Grey	1
L1/red for direct current applications in conjunction with L2/black				
44420320	POWERLOCK A1 L1/RD	Ø 5.5 mm (4x)	L1, Red	1
Type POWERLOCK A6, panel-mount box, source for contact with M 12 threaded post				
44420277	POWERLOCK A6 PE/GN	Ø 5.5 mm (4x)	PE, Green	1
44420278	POWERLOCK A6 N/BL	Ø 5.5 mm (4x)	N, Blue	1
44420279	POWERLOCK A6 L1/BN	Ø 5.5 mm (4x)	L1, Brown	1
44420280	POWERLOCK A6 L2/BK	Ø 5.5 mm (4x)	L2, Black	1
44420281	POWERLOCK A6 L3/GY	Ø 5.5 mm (4x)	L3, Grey	1
POWERLOCK A6 L1/RD				
44420321	POWERLOCK A6 L1/BN	Ø 5.5 mm (4x)	L1, Red	1

Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® POWERLOCK D6 S



EPIC® POWERLOCK F6 S

Info

- Connector for unscreened single-core power cables

Suitable contacts:

- EPIC® POWERLOCK Screw Contacts Page 639
- Housing without contact, order contact separately

Benefits

- Resistant to mechanical influences in harsh environmental conditions
- Connectors in harmonised colours according to European standards
- Every colour has a different coding to prevent incorrect plugging
- USA colour-codes are available upon request

Application range

- For renewable energy plants e.g. wind power
- For mobile and stationary power distribution
- For the connection of motors, transformers and generators
- Light & sound technology

Product features

- Straight connector with M40 thread
- Order SKINTOP® ST-M 40 or STR-M 40 separately
- Contact fixing by contact retention pin, each pin can only be used once
- Housing without contact, order contact separately

Technical data

Rated voltage (V)	1000 V
Rated impulse voltage	8 kV
Rated current (A)	Screw max. 400 A
Degree of soiling	3
Contacts	Screw termination: silver-plated brass
Number of contacts	1
Termination methods	Screw termination: 50 - 120 mm²
Material	Housing: PBT Contact retention pin: PA
IP	Protection rating IP 67 (maximum, dependant on cable gland used) IP 20 (unmated)
Cycle of mechanical operation	500
Temperature range	-25°C - +125°C

Article number	Article	M	Pin configuration	Pieces / PU
Type POWERLOCK D6, cable connector, source for screw contact				
44420267	POWERLOCK D6 PE/GN	40	PE, Green	1
44420268	POWERLOCK D6 N/BL	40	N, Blue	1
44420269	POWERLOCK D6 L1/BN	40	L1, Brown	1
44420270	POWERLOCK D6 L2/BK	40	L2, Black	1
44420271	POWERLOCK D6 L3/GY	40	L3, Grey	1
L1/red for direct current applications in conjunction with L2/black				
44420305	POWERLOCK D6 L1/BN	40	L1, Red	1
Type POWERLOCK F6, coupling connector, drain for screw contact				
44420262	POWERLOCK F6 PE/GN	40	PE, Green	1
44420263	POWERLOCK F6 N/BL	40	N, Blue	1
44420264	POWERLOCK F6 L1/BN	40	L1, Brown	1
44420265	POWERLOCK F6 L2/BK	40	L2, Black	1
44420266	POWERLOCK F6 L3/GY	40	L3, Grey	1
L1/red for direct current applications in conjunction with L2/black				
44420301	POWERLOCK F6 L1/RD	40	L1, Red	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® ST-M refer to page 652

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

EPIC® POWERLOCK BOX S



Info

- Can be locked to prevent unauthorised disconnection

Benefits

- Guarantees the correct sequence is followed when connecting and disconnecting a set of connectors (PE, N, L1, L2, L3)
- Every colour has a different coding to prevent incorrect plugging
- IP 20 finger-protected
- Integrated micro-switch that can be connected to circuit breaker or alarm circuit
- For connecting to standard EPIC® POWERLOCK connectors

Application range

- Alternative energy installations
- For mobile and stationary power distribution
- For the connection of motors, transformers and generators
- Light & sound technology

Housings

- Sealed security lid is optional

Product features

- Included: Contacts with M12 threaded post
- Cable connector for microswitch optional
- 19" housing with height unit 2HE/2U

Technical data

Rated voltage (V)
1000 V

Rated current (A)
Screw max. 400 A

Degree of soiling
3

Contacts
Screw termination: silver-plated brass

Number of contacts
4 + PE

Termination methods
Screw termination: 50 - 120 mm²



Protection rating
IP 67

Cycle of mechanical operation
500



Temperature range
-20°C - +85°C

Article number	Article	Fastening type	Pin configuration	Pieces / PU
POWERLOCK BOX A1, panel-mount base, drain with M12 threaded post				
44420282	POWERLOCK BOX A1 S	Ø 6.5 mm (4x)	4+PE	1
POWERLOCK BOX A1, panel-mount base with cover, drain with M12 threaded post				
44420283	POWERLOCK BOX A1 SD	Ø 6.5 mm (4x)	4+PE	1
POWERLOCK BOX A6, panel-mount base, source with M12 threaded post				
44420286	POWERLOCK BOX A6 S	Ø 6.5 mm (4x)	4+PE	1
POWERLOCK BOX A6, panel-mount base with cover, source with M12 threaded post				
44420287	POWERLOCK BOX A6 SD	Ø 6.5 mm (4x)	4+PE	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® POWERLOCK Screw Contacts



Info

- Screw max. 400 A
- Do not plug with crimp-type (660 A)

Article number	Article designation	Version	For design	PU
Drain - contact with M 12 threaded post for type POWERLOCK A 1 S				
44420241	POWERLOCK SP M12	Contact Drain, M12 Thread for cable lugs	for type A1	1
Source - contact with M 12 threaded post for type POWERLOCK A6 S				
44420242	POWERLOCK OP M12	Lamella contact source, M12 thread for cable lug	for type A6	1
Source - screw contact for type POWERLOCK D6 S				
44420237	POWERLOCK QS 120	120 mm ²	for type D6	1
Drain - screw contact for type POWERLOCK F6 S				
44420232	POWERLOCK SS 120	120 mm ²	for type F6	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® POWERLOCK Tools



Article number	Article	Version	PU
Tools			
44420243	POWERLOCK DISCONNECTION TOOL	for mated connection	1

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® POWERLOCK Accessories



Article number	Article	For design	Version	PU
Protective caps				
44420252	POWERLOCK PROTECTION CAP A1	for type A1	IP54	1
44420253	POWERLOCK PROTECTION CAP A6	for type A6	IP54	1
44420251	POWERLOCK PROTECTION CAP D6	for type D6	IP54	1
44420250	POWERLOCK PROTECTION CAP F6	for type F6	IP54	1
Spare contact retention pin				
44420259	POWERLOCK RETENTION PIN A1, A6	for type A1, A6		1
44420255	POWERLOCK RETENTION PIN D6	for type D6		1
44420254	POWERLOCK RETENTION PIN F6	for type F6		1
Wire end sleeve for POWERLOCK screw contact				
44420244	POWERLOCK WIRE SLEEVE 120	Replacement for screw contact POWERLOCK 120 SS/BS	120mm ²	1
44420245	POWERLOCK WIRE SLEEVE 95	Reduction for screw contact POWERLOCK 120 SS/BS	95mm ²	1
44420246	POWERLOCK WIRE SLEEVE 70	Reduction for screw contact POWERLOCK 120 SS/BS	70mm ²	1
44420247	POWERLOCK WIRE SLEEVE 50	Reduction for screw contact POWERLOCK 120 SS/BS	50mm ²	1

Photographs are not to scale and do not represent detailed images of the respective products.

Solar connectors

EPIC® SOLAR 4 THIN

New

EPIC® SOLAR 4 Thin M pre-assembled



Info

- 4 mm connector system with double hook
- Non-resistant cable connection

New

EPIC® SOLAR 4 THIN F pre-assembled



Info

- 4 mm connector system with double hook
- Non-resistant cable connection

Benefits

- Non-resistant cable connection for efficient power transmission
- Innovative, patent-pending contact system, current leaves the connection cool
- High reliability and durability due to welded connections
- Extra-thin 12 mm for high packing density

Product features

- 4 mm connector system with double hook
- Pre-assembled with 100 % automatic control
- Wide range of conductor cross-sections from 1.5 mm² to 6 mm²
- EPIC® SOLAR 4 Thin is not compatible with EPIC® SOLAR
- UL pending

Application range

- Pre-assembled connection cables for weatherproof cabling of photovoltaic systems

Technical data

Rated voltage (V)	1000 V AC/DC
Rated impulse voltage	8 kV
Degree of soiling	3
Contact resistance	< 0.2 mOhm
IP Protection rating	IP68 (10h / 1m)
Protection class	II
Cycle of mechanical operation	100
Temperature range	-40 °C to +105 °C

Article number	Article designation	Cross-section (mm ²)	Rated current (A)	Length (m)	Copper index (kg/km)	Pieces / PU
EPIC® SOLAR 4 THIN male with cable ÖLFLEX® SOLAR XLR						
44428100	EPIC® SOLAR 4 THIN M XLR TF 1.5mm ² 1m	1.5	17.0	1.0	14.4	100
44428101	EPIC® SOLAR 4 THIN M XLR TF 2.5 mm ² 1 m	2.5	21.0	1.0	24.0	100
44428102	EPIC® SOLAR 4 THIN M XLR TF 4mm ² 1m	4	25.0	1.0	38.4	100
44428103	EPIC® SOLAR 4 THIN M XLR 6mm ² 1m	6	30.0	1.0	57.6	100
EPIC® SOLAR 4 THIN male with cable ÖLFLEX® SOLAR XL multi						
44428108	EPIC® SOLAR 4 THIN M XL multi 2.5 mm ² 1 m	2.5	21.0	1.0	24.0	100
44428109	EPIC® SOLAR 4 THIN M XL multi 4mm ² 1m	4	25.0	1.0	38.4	100
44428110	EPIC® SOLAR 4 THIN M XL multi 6mm ² 1m	6	30.0	1.0	57.6	100
EPIC® SOLAR 4 THIN female with cable ÖLFLEX® SOLAR XLR						
44428104	EPIC® SOLAR 4 THIN F XLR TF 1.5 mm ² 1 m	1.5	17.0	1.0	14.4	100
44428105	EPIC® SOLAR 4 THIN F XLR TF 2.5 mm ² 1 m	2.5	21.0	1.0	24.0	100
44428106	EPIC® SOLAR 4 THIN F XLR TF 4mm ² 1m	4	25.0	1.0	38.4	100
44428107	EPIC® SOLAR 4 THIN F XLR 6mm ² 1m	6	30.0	1.0	57.6	100
EPIC® SOLAR 4 THIN female with cable ÖLFLEX® SOLAR XL multi						
44428111	EPIC® SOLAR 4 THIN F XL multi 2.5 mm ² 1 m	2.5	21.0	1.0	24.0	100
44428112	EPIC® SOLAR 4 THIN F XL multi 4mm ² 1m	4	25.0	1.0	38.4	100
44428113	EPIC® SOLAR 4 THIN F XL multi 6mm ² 1m	6	30.0	1.0	57.6	100

Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges. Other lengths and cable terminations are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® SOLAR Module Box



EPIC® SOLAR Module Box with cables



Benefits

- Junction boxes for weatherproof cabling of photovoltaic systems

Application range

- The Module Box is bonded to the rear of the solar modules. The ribbon bands are terminated in the Module Box
- For further cabling, pre-assembled solar cables such as the EPIC® SOLAR 4 THIN are terminated at the module box

Product features

EPIC® SOLAR Module Box

- Rugged junction boxes for cabling the solar modules with solar cables such as ÖLFLEX® SOLAR
- Dimensions (WxHxD): 118 x 28.5 x 109 mm
- Housing material: PPO/PPS
- UL: pending

EPIC® SOLAR Module Box with cables

- These junction boxes are available with pre-assembled EPIC® SOLAR 4 THIN cables in various cross-sections
- Dimensions (WxHxD): 118 x 28.5 x 109 mm
- Cable length: 1 m
- UL: pending

Technical data

Rated voltage (V)
1000 V AC/DC

Rated current (A)
8 A

Contact resistance
< 5 mOhm

Contacts
Copper alloy, tinned

Number of contacts
2

Termination methods
Terminal clamp for ribbon bands: up to 7 mm wide (folded 10 mm)
Plug-in connection for solar cables with Multi-lam plug Ø 3 mm

IP **Protection rating**
IP 65

Protection class
II

Temperature range
-40 °C ... +85 °C

Cable clamping range
EPIC® SOLAR Module Box
Ø 3,7 mm - 7,1 mm

Article number	Article designation	Connection type	Cross-section (mm²)	Cable clamping range (mm)	Length (m)	Pieces / PU
EPIC® SOLAR Module Box						
44428043	EPIC® SOLAR ST200 3D	Equipped with 3 bypass diodes	max. 6	3,7 - 7,1		100
44428044	EPIC® SOLAR ST200 6D	Equipped with 6 bypass diodes	max. 6	3,7 - 7,1		100
EPIC® SOLAR module box with cable and plug EPIC® SOLAR 4 THIN						
44428062	EPIC® SOLAR ST200 4 THIN XLR TF 4mm² 1m	Pre-assembled with solar cables	4		1.0	100
44428063	EPIC® SOLAR ST200 4 THIN XLR 6mm² 1m	Pre-assembled with solar cables	6		1.0	100

Other designs and lengths are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.



SKINTOP® metric plastic cable glands	
SKINTOP® Standard	652
SKINTOP® CLICK System	654
SKINTOP® for photovoltaics	655
SKINTOP® halogen-free	656
SKINTOP® bending protection	657
SKINTOP® explosion-proof	660
SKINTOP® metric nickel-plated brass cable glands	
SKINTOP® MS-M/SKINTOP® MSR-M	662
SKINTOP® MS-M-XL/SKINTOP® MSR-M-XL	663
SKINTOP® COLD	664
SKINTOP® for industrial connectors	665
SKINTOP® explosion-proof	666
SKINTOP® EMC/Earthing	668
SKINTOP® metric cable gland accessories	
SKINDICHT® counter nuts	670
SKINTOP® multiple sealing inserts/dust protection	672
SKINTOP® explosion-proof	674
SKINTOP® multiple sealing inserts/dust protection	675
SKINTOP® cable bushing systems	
SKINTOP® cable bushing systems	676
SKINDICHT® metric plastic or metal cable glands	
SKINDICHT® standard metric cable gland	678
SKINDICHT® flat cable glands	680
SKINDICHT® strain relief/bending protection	682
SKINDICHT® EMC/earthing	686
SKINDICHT® special sealing cable glands	688
SKINDICHT® angle cable glands	691
SKINDICHT® metric cable gland accessories	
SKINDICHT® counter nuts	694
SKINDICHT® blind plugs	695
SKINDICHT® reducers	699
SKINDICHT® enlargers	701
SKINDICHT® Adapter	703
SKINDICHT® fittings	704
SKINDICHT® compression screws, washers	706
SKINDICHT® sealing rings/incised seals	707
SKINDICHT® ducts	709
SKINMATIC® mounting tools	
SKINMATIC® metric mounting tools	710
Cable glands - other thread types	
SKINTOP® NPT polyamide cable glands	712
SKINTOP® NPT nickel-plated brass cable glands	713
SKINTOP® EMC/Earthing	714
SKINTOP® PG polyamide cable glands	
SKINTOP® ST	715
SKINTOP® bending protection	716
SKINTOP® PG nickel-plated brass cable glands	
SKINTOP® MS	717
SKINTOP® EMV/Earthing	719
SKINDICHT® PG cable gland accessories	
SKINDICHT® counter nuts	720
SKINTOP® multiple sealing inserts/dust protection	721
SKINDICHT® plastic or metal PG cable glands	
SKINDICHT® standard PG/DIN cable gland	723
SKINDICHT® flat cable glands	724
SKINDICHT® strain relief/bending protection	727
SKINDICHT® EMC/earthing	733
SKINDICHT® special sealing cable glands	735
SKINDICHT® angle cable glands	738
SKINDICHT® PG cable gland accessories	
SKINDICHT® counter nuts	740
SKINDICHT® blind plugs	742
SKINDICHT® reducers	744
SKINDICHT® enlargers	746
SKINDICHT® Adapter	747
SKINDICHT® fittings	749
SKINDICHT® dust protection	750
SKINDICHT® sealing rings/incised seals	751
SKINDICHT® anti-kink sleeves/sealing cones	753



SKINTOP® metric plastic cable glands

Cable Glands at a glance	646
Cable Glands PG / metric	647
Cable Glands Optimized screening	649
Cable Glands Secured by a single turn of the hand	651

SKINTOP® Standard

SKINTOP® ST-M / SKINTOP® STR-M	New 652
--------------------------------	---------

SKINTOP® CLICK System

SKINTOP® CLICK / SKINTOP® CLICK-R	New 654
-----------------------------------	---------

SKINTOP® for photovoltaics

SKINTOP® SOLAR / SKINTOP® SOLAR plus	New 655
--------------------------------------	---------

SKINTOP® halogen-free

SKINTOP® ST-HF-M	New 656
------------------	---------

SKINTOP® bending protection

SKINTOP® BS-M	657
---------------	-----

SKINTOP® CLICK BS	New 658
-------------------	---------

SKINTOP® BT-M	659
---------------	-----

SKINTOP® explosion-proof

SKINTOP® K-M ATEX plus / SKINTOP® KR-M ATEX plus	New 660
--	---------

SKINTOP® K-M ATEX plus blue /	
-------------------------------	--

SKINTOP® KR-M ATEX plus blue	New 661
------------------------------	---------

SKINTOP® metric nickel-plated brass cable glands
SKINTOP® MS-M/SKINTOP® MSR-M

SKINTOP® MS-M / SKINTOP® MSR-M	New 662
--------------------------------	---------

SKINTOP® MS-M-XL/SKINTOP® MSR-M-XL

SKINTOP® MS-M-XL / SKINTOP® MSR-M-XL	663
--------------------------------------	-----

SKINTOP® COLD

SKINTOP® COLD / SKINTOP® COLD-R	New 664
---------------------------------	---------

SKINTOP® for industrial connectors

SKINTOP® MS-IS-M	665
------------------	-----

SKINTOP® explosion-proof

SKINTOP® MS-M ATEX / SKINTOP® MSR-M ATEX	666
--	-----

SKINTOP® MS-M ATEX BRUSH	New 667
--------------------------	---------

SKINTOP® EMC/Earthing

SKINTOP® MS-SC-M	668
------------------	-----

SKINTOP® MS-M BRUSH	669
---------------------	-----

SKINTOP® metric cable gland accessories
SKINDICHT® counter nuts

SKINTOP® GMP-GL-M	670
-------------------	-----

SKINTOP® GMP-HF-M	671
-------------------	-----

SKINTOP® multiple sealing inserts/dust protection

SKINTOP® DIX-M	672
----------------	-----

SKINTOP® DIX-M AUTOMATION	New 673
---------------------------	---------

SKINTOP® explosion-proof

SKINTOP® SDV-M ATEX / SKINTOP® SDVR-M ATEX	674
--	-----

SKINTOP® multiple sealing inserts/dust protection

SKINTOP® DIX-DV / SKINTOP® SD-M / SKINTOP® DV-M	675
---	-----

SKINTOP® cable bushing systems
SKINTOP® cable bushing systems

SKINTOP® CUBE	New 676
---------------	---------

Cablefix	677
----------	-----

SKINDICHT® metric plastic or metal cable glands
SKINDICHT® standard metric cable gland

SKINDICHT® SVRN-M / SKINDICHT® SVRE-M	678
---------------------------------------	-----

SKINDICHT® SVRX	679
-----------------	-----

SKINDICHT® flat cable glands

SKINDICHT® SVFK-M	680
-------------------	-----

SKINDICHT® SVF-M	681
------------------	-----

SKINDICHT® strain relief/bending protection

SKINDICHT® SKZ-M	682
------------------	-----

SKINDICHT® SHZ-M	683
------------------	-----

SKINDICHT® SR-M	684
-----------------	-----

SKINDICHT® SR-SV-M	685
--------------------	-----

SKINDICHT® EMC/earthing

SKINDICHT® SHVE-M	686
-------------------	-----

SKINDICHT® SRE-M	687
------------------	-----

SKINDICHT® special sealing cable glands

SKINDICHT® SHV-M	688
------------------	-----

SKINDICHT® SHV-M-VITON®	689
-------------------------	-----

SKINDICHT® MINI	689
-----------------	-----

SKINDICHT® CN-M	690
-----------------	-----

SKINDICHT® angle cable glands

SKINDICHT® KW-M	691
-----------------	-----

SKINDICHT® RWV-M	691
------------------	-----

SKINDICHT® RWV-M without E+D	692
------------------------------	-----

SKINDICHT® SE-M	692
-----------------	-----

SKINDICHT® SE-M without E+D	693
-----------------------------	-----

SKINDICHT® SE-M 220/320	693
-------------------------	-----

SKINDICHT® metric cable gland accessories
SKINDICHT® counter nuts

SKINDICHT® SM-M	694
-----------------	-----

SKINDICHT® SM-PE-M	694
--------------------	-----

SKINDICHT® blind plugs

SKINDICHT® BLK-M / SKINDICHT® BLK-GL-M	695
--	-----

SKINTOP® CLICK BLK	New 696
--------------------	---------

SKINDICHT® BL-M	697
-----------------	-----

SKINDICHT® BL-M hexagonal	698
---------------------------	-----

SKINDICHT® BL-M ATEX	698
----------------------	-----

SKINDICHT® reducers

SKINDICHT® KU-M	699
-----------------	-----

SKINDICHT® MR-M	699
-----------------	-----

SKINDICHT® MR-M hexagonal	New 700
---------------------------	---------

SKINDICHT® MR-M ATEX	700
----------------------	-----

SKINDICHT® enlargers

SKINDICHT® EKU-M	701
------------------	-----

SKINDICHT® ME-M	701
-----------------	-----

SKINDICHT® ME-M ATEX	702
----------------------	-----

SKINDICHT® Adapter

SKINDICHT® MA-M/NPT / SKINDICHT® MA-M/PG	703
--	-----

SKINDICHT® fittings

SKINDICHT® ZS-M	704
-----------------	-----

SKINDICHT® ZSE-M	705
------------------	-----

SKINDICHT® compression screws, washers

SKINDICHT® D-M	706
----------------	-----

SKINDICHT® U-M/U-PG	706
---------------------	-----

SKINDICHT® sealing rings/incised seals

SKINDICHT® E-M	707
----------------	-----

SKINDICHT® O-Ring Perbunan® metric	707
------------------------------------	-----

SKINDICHT® O-Ring VITON® metric	708
---------------------------------	-----

SKINDICHT® JT PTFE metric	708
---------------------------	-----

SKINDICHT® ducts

SKINDICHT® WN-M	709
-----------------	-----

SKINDICHT® DTN	709
----------------	-----

SKINDICHT® LA	709
---------------	-----

SKINMATIC® mounting tools
SKINMATIC® metric mounting tools

SKINMATIC® QUICK Set 1	New 710
------------------------	---------

SKINMATIC® MH Set	New 710
-------------------	---------

SKINMATIC® KB-M	711
-----------------	-----

SKINMATIC® SB-M	711
-----------------	-----

SKINMATIC® GB-M	711
-----------------	-----

SKINMATIC® RZ	711
---------------	-----

Cable glands - other thread types
SKINTOP® NPT polyamide cable glands

SKINTOP® NPT	712
--------------	-----

SKINTOP® NPT nickel-plated brass cable glands

SKINTOP® MS NPT	713
-----------------	-----

SKINTOP® EMC/Earthing

SKINTOP® MS-SC NPT	New 714
--------------------	---------

SKINTOP® MS-NPT BRUSH	New 714
-----------------------	---------

SKINTOP® PG polyamide cable glands
SKINTOP® ST

SKINTOP® ST / SKINTOP® STR	715
----------------------------	-----

SKINTOP® bending protection

SKINTOP® BS	716
-------------	-----

SKINTOP® BT	716
-------------	-----

SKINTOP® PG nickel-plated brass cable glands
SKINTOP® MS

SKINTOP® MS / SKINTOP® MSR	717
----------------------------	-----

SKINTOP® MS-XL / SKINTOP® MSR-XL	718
----------------------------------	-----

SKINTOP® EMV/Earthing

SKINTOP® MS-SC	719
----------------	-----

SKINDICHT® PG cable gland accessories
SKINDICHT® counter nuts

SKINTOP® GMP-GL	720
-----------------	-----

SKINTOP® multiple sealing inserts/dust protection

SKINTOP® DIX	721	SKINDICHT® PG cable gland accessories	
SKINTOP® DIX-AUTOMATION	721	SKINDICHT® counter nuts	
SKINTOP® metric cable gland accessories		SKINDICHT® GMK	740
SKINTOP® DIX-DV / SKINTOP® SD / SKINTOP® DV	722	SKINDICHT® SM / SKINDICHT® SM-PE	741
SKINDICHT® plastic or metal PG cable glands		SKINDICHT® blind plugs	
SKINDICHT® standard PG/DIN cable gland		SKINDICHT® BLK / BLK-GL	742
SKINDICHT® SVRN / SKINDICHT® SVRE	723	SKINDICHT® BL	743
SKINDICHT® flat cable glands		SKINDICHT® reducers	
SKINDICHT® SVFK	724	SKINDICHT® KU, KUS, KUK	744
SKINDICHT® SVF	725	SKINDICHT® MR	745
SKINDICHT® FL	726	SKINDICHT® enlargers	
SKINDICHT® strain relief/bending protection		SKINDICHT® EKU	746
SKINDICHT® SH	727	SKINDICHT® ME	746
SKINDICHT® SHZ	728	SKINDICHT® Adapter	
SKINDICHT® SK	729	SKINDICHT® A-PG/M	747
SKINDICHT® SKZ	730	SKINDICHT® MA-PG/M	748
SKINDICHT® SR	731	SKINDICHT® fittings	
SKINDICHT® SR-SV	732	SKINDICHT® ZS/ZS-XL	749
SKINDICHT® EMC/earthing		SKINDICHT® dust protection	
SKINDICHT® SHVE	733	SKINDICHT® STK	750
SKINDICHT® SRE	734	SKINDICHT® E	750
SKINDICHT® special sealing cable glands		SKINDICHT® sealing rings/incised seals	
SKINDICHT® SHV	735	SKINDICHT® EV	751
SKINDICHT® SHV VITON®	736	SKINDICHT® O-Ring Perbunan® PG	751
SKINDICHT® CN	737	SKINDICHT® O-Ring VITON® PG	751
SKINDICHT® angle cable glands		SKINDICHT® JT PTFE PG	752
SKINDICHT® RWV	738	SKINDICHT® EH	752
SKINDICHT® SE	739	SKINDICHT® anti-kink sleeves/sealing cones	
		SKINDICHT® SHV cone seal	753
		SKINDICHT® SNR	754

ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

SILVYN®

FLEXIMARK®

ACCESSORIES

APPENDIX

At a glance

Cable glands	Characteristics														Approvals	
	Protection class IP/NEMA	Connection thread metric	Connection thread PG	Connection thread NPT	for round cables	for flat cables	Metal	Plastic	Angle	Strain relief	Vibration protection	Antikink protection	Screen connection	Use for hazardous areas		Halogen free
SKINTOP® ST-M/STR-M/ST(R) M ISO	68/69K	●			●			●		●	●					cULus, cURus, TÜV, VDE, DNV
SKINTOP® CLICK/CLICK-R	68				●			●		●	●					VDE, cULus, cURus, DNV
SKINTOP® CLICK BS	68				●		●			●	●	●				VDE, cULus, cURus, DNV
SKINTOP® COLD/COLD-R	68	●			●		●			●	●					VDE
SKINTOP® CUBE	64/ NEMA 12				●			●		●	●					
SKINTOP® ST and STR	68		●		●			●		●	●					UL, UR, CSA, TÜV
SKINTOP® ST (NPT) and STR (NPT)	68			●	●			●		●	●					UL, UR, CSA
SKINTOP® ST-HF-M	68	●			●			●		●	●			●		VDE
SKINTOP® SOLAR (plus)	68	●			●			●		●	●					cULus, cURus
SKINTOP® BS-M/BS M ISO	68	●			●			●		●	●	●				cULus, cURus, VDE, DNV
SKINTOP® BS	68		●		●			●		●	●	●				UL, UR, CSA
SKINTOP® BS (NPT)	68			●	●			●		●	●	●				
SKINTOP® BT and BT-M	68	●	●		●			●		●	●	●				
SKINTOP® MS-M and MSR-M/MS-M-XL and MSR-M-XL	68/69K NEMA 4x/6	●			●		●			●						cULus, cURus, VDE, DNV
SKINTOP® MS and MSR	68		●		●		●			●						
SKINTOP® MS (NPT) and MSR (NPT)	68			●	●		●			●						UL, UR, CSA
SKINTOP® MS-IS-M	68	●			●		●			●						
SKINTOP® MS-SC-M	68	●			●		●			●			●			cULus, cURus, DNV
SKINTOP® MS-M BRUSH/BRUSH plus	68/69K	●			●		●			●			●			VDE, cULus, DNV
SKINTOP® MS-SC/MS-SC NPT	68		●	●	●		●			●			●			
SKINTOP® MS-NPT BRUSH	68		●	●	●		●			●			●			cULus
SKINTOP® K-M ATEX plus/plus blue	68	●			●		●	●		●	●			●		DNV, ATEX
SKINTOP® KR-M ATEX plus/plus blue	68	●			●		●	●		●	●			●		DNV, ATEX
SKINTOP® MS-M ATEX/MS-M-XL ATEX	68	●			●		●			●				●		cULus, cURus, DNV, ATEX
SKINTOP® MSR-M ATEX	68	●			●		●			●				●		cULus, cURus, DNV, ATEX
SKINTOP® MS-M BRUSH ATEX/SKINDICHT® SHVE-M ATEX	68	●			●		●			●			●	●		ATEX, DNV
SKINDICHT® MINI	68	●			●		●			●						
SKINDICHT® CN and CN-M	68	●	●		●		●			●						
SKINDICHT® SHV-M	68	●			●		●			●						
SKINDICHT® SHV	68	●			●		●			●						
SKINDICHT® SHV-M-Viton®	68	●			●		●			●						
SKINDICHT® SHV-Viton®	68	●			●		●			●						
SKINDICHT® SHVE-M	68	●			●		●			●			●			
SKINDICHT® SHVE	68	●			●		●			●			●			
SKINDICHT® SR-SV-M	65	●			●		●			●		●				
SKINDICHT® SR-SV	65		●		●		●			●		●				
SKINDICHT® FL	65				●		●			●						
SKINDICHT® SRE-M	65	●			●		●			●		●	●			
SKINDICHT® SRE	65		●		●		●			●		●	●			
SKINDICHT® SR-M	65	●			●		●			●		●				
SKINDICHT® SR	65		●		●		●			●		●				
SKINDICHT® KW-M	55	●			●		●	●	●							
SKINDICHT® SE and SE-M	55	●	●		●		●			●						
SKINDICHT® SE-M 220/320	55	●	●		●		●			●						
SKINDICHT® RWV-M	55	●			●		●			●						
SKINDICHT® RWV	55		●		●		●			●						
SKINDICHT® SKZ-M	55	●			●		●			●						
SKINDICHT® SKZ	55		●		●		●			●						
SKINDICHT® SHZ-M	55	●			●		●			●						
SKINDICHT® SHZ	55		●		●		●			●						
SKINDICHT® SVF and SVF-M	54	●	●		●	●	●			●						
SKINDICHT® SVFK	54		●		●	●	●	●		●						
SKINDICHT® SVRE-M	54	●			●		●			●						
SKINDICHT® SVRE	54		●		●		●			●						
SKINDICHT® SVRN-M	54	●			●		●			●						
SKINDICHT® SVRN	54		●		●		●			●						
SKINDICHT® SVRX-W	54	●			●		●			●						
SKINDICHT® SVRX-Z	54	●			●		●			●			●			
SKINDICHT® SK	20		●		●		●			●						
SKINDICHT® SH	20		●		●		●			●						

VITON® is a registered trademark of DuPont de Nemour

Getting the link to the future – now!

At the turn of the Millennium, the old, familiar PG thread was replaced by the metric thread. On 31 December 1999, the DIN 46320 standard for PG thread connections was withdrawn.

It was replaced by the European Standard EN 50262 for metric threads – means that with the year 2000, only cable glands with metric connection threads have to be used.

The changeover affects not only cable glands, but also all housing systems and appliances into which cables must be inserted.

Sizes PG 7 to PG 48 were replaced by metric sizes M 12 to M 63. Additional sizes have been adopted into the European Standard, covering a range M 6 to M 110.

The ZVEI (Zentralverband Elektrotechnik und Elektroindustrie e. V. – the German Federation of Electrotechnical and Electrical Industries) draws attention to the fact that the European safety standard EN 50262 must be applied as from March 2001 at the latest; furthermore, the present test standard VDE 0619 for glands with PG thread will be withdrawn in March 2001.

EN 50262 is a safety standard, and no longer a construction standard with the function of defining dimensions, like DIN 46319 or DIN 46320. This means that the functions required by a cable gland can be realised without restrictions applied by prescribed forms.

With our cable glands SKINTOP® and SKINDICHT®, we have transposed the

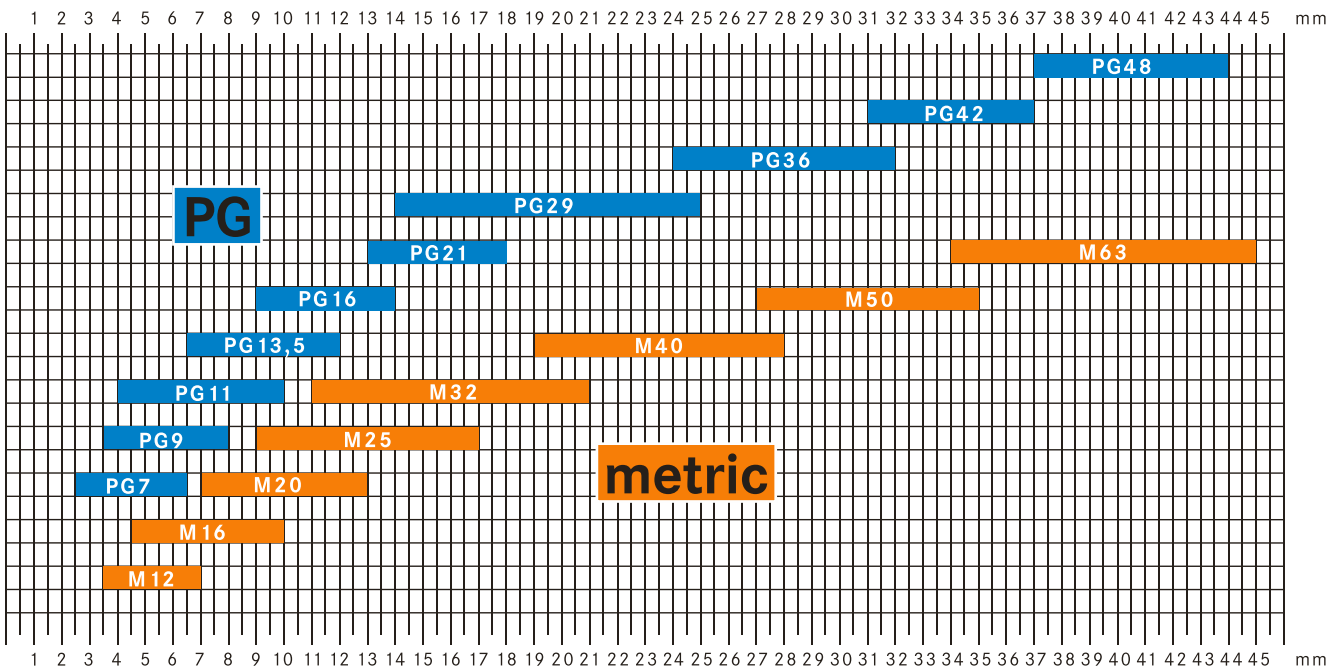
requirements of EN 50262. Our metric SKINTOP® glands combine all the features of the proven SKINTOP® series: easy, fast, permanent installation, optimal strain relief, protection against vibration, variable clamping range and sealing according to Protection Class IP 68.

Naturally, we can also supply you with the corresponding supplementary components, such as:

- SKINTOP® GMP-GL-M counter nuts
 - SKINDICHT® SM-M counter nuts
 - SKINTOP® SD-M dust seal
 - SKINTOP® DV-M sealing plugs
 - plugs made of metal or plastic material;
 - O-rings
 - adapters
- and many more.

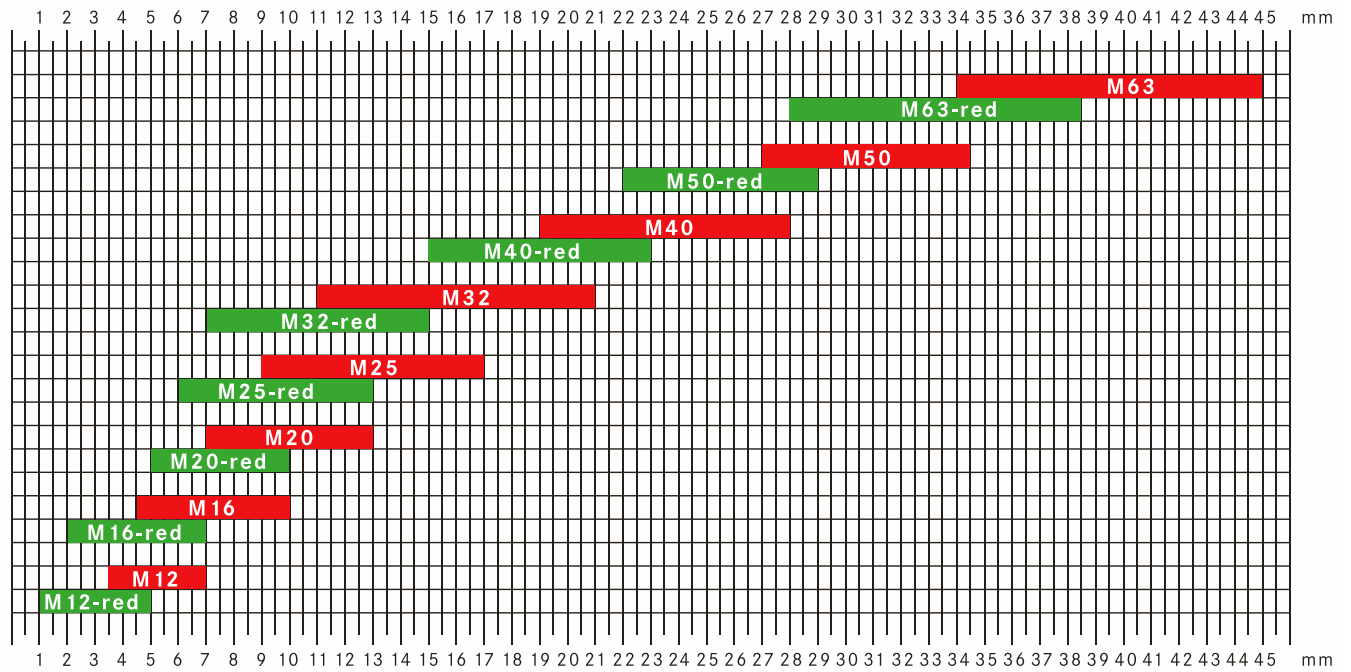
Table of clamping ranges PG/metric

SKINTOP® ST and SKINTOP® ST-M

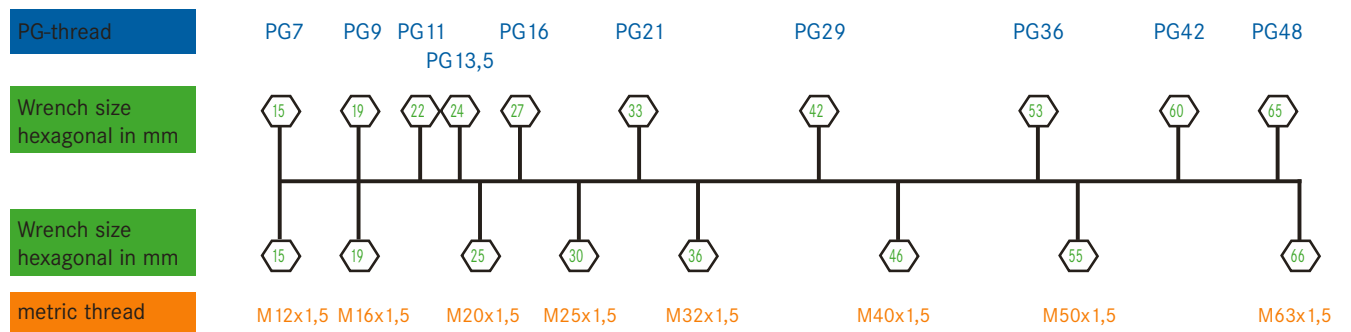


Clamping ranges SKINTOP® metric

SKINTOP® ST-M and SKINTOP® STR-M



SKINTOP® ST / SKINTOP® ST-M
Comparison and classification
of cable glands spanner size PG/metric



In industrial environments, motors, controls and automatic welding machines can seriously impair electromagnetic compatibility (EMC). Particular problems are caused in industrial installations by long cable runs for power supply or data transmission between individual components; appropriate preventive measures are therefore essential.

Due to the antenna radiation effect of such cables, radio interference can be picked up and the useful signal (for example, temperature sensor or shaft encoder) blanketed. Result: functional disturbances of the connected equipment – from undetected false readings to the breakdown of an entire production line. Conversely, cables can function as transmitters causing radio interference. Installation of electronic components in an earthed switch cabinet and the simultaneous use of screened cables has proved to be an effective countermeasure. In practice, however, the location of the cable duct frequently constitutes a weak point in the switch cabinet. Insufficient contact between the cable screening and the metal housing often destroys the desired screening effect. It is here that the SKINTOP® and SKINDICHT® cable glands from Lapp prove their worth. The newly developed SKINTOP® MS-SC-M and SKINTOP® MS-M BRUSH in particular are distinguished by their excellent EMC characteristics in addition to ease of handling. It enables the use of various different cable designs within a large diameter range.

Screening concepts

With the interference phenomena typically found in the industrial environment, we must distinguish principally between cable-linked and field-linked interference. Field-linked interference emissions which, for example, are radiated directly from a circuit board or, conversely, exercise an effect upon it, can be effectively checked by installing electrical or electronic assemblies in closed metal housings such as switch cabinets. If the housing does not have any particularly large apertures, a Faraday shield is produced which affords efficient protection against electromagnetic interferences. In practice, this type of screening is generally extremely expensive and is hardly practicable in the case of moving machine components. An alternative solution is provided by cables with screening braid. In this case, the quality of the screen effect depends to a great extent on the texture and thickness of the braiding. In addition, optimum attachment

of the the cable screening to the housing must be ensured by suitable mechanical elements in order to prevent penetration of the interference conducted on the cable screening. Of decisive importance is the derivation resistance, i.e. the resistance which a guide wave „sees” upon the cable screening when it meets the point of intersection cable / housing.

Practical requirements

Thus, in terms of EMC, we have a series of practical requirements for optimum contact:

- The connection between the cable screening and the housing potential must be of low impedance. To ensure this, the contact surfaces must be as large as possible. Under ideal conditions the cable screening, together with the housing wall, constitute a closed connection and form a continuation of the housing, without permitting any openings to be formed.
- The connection must be of low induction. This means that the cable screening must be led to the housing wall via the shortest possible path and with the widest possible cross-section. Preferably a type of contact should be chosen which completely surrounds the internal conductor. The procedure frequently practised, namely first leading the cable into the housing and placing the screening somewhere inside the housing, whereby the screen braiding is often extended by means of a thin cable strand, makes effective screening almost impossible.
- For practical application, simplicity of handling and installation are desirable.

An electrician must be able to carry out installation without difficulty.

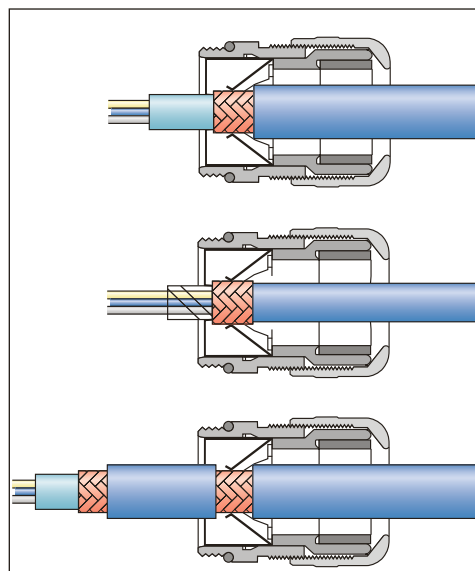
SKINTOP® and SKINDICHT®

The cable glands SKINTOP® and SKINDICHT® guarantee, in addition to perfect mechanical contact, the necessary low impedance and low induction connection. These glands, which are simple to install, are available in different versions and sizes. With SKINDICHT® SHVE-M, the cable screen is pressed between an earthing sleeve and a conical seal, thus permitting 360° contact over a wide area. In the case of SKINTOP® MS-SC-M, the contact is produced by means of cylindrically arranged contact springs, the SKINTOP® MS-M BRUSH offers a 360° contact with a EMC BRUSH. Only the cable sheathing in the area of the contact springs must be removed, and it is not necessary to open the screen braiding.

For the sake of clarity, this article focuses upon the cable gland SKINTOP® MS-SC-M. In a number of tests, excellent screening properties were demonstrated. Since the appropriate standard for cable glands does not define a particular set-up of test equipment, two possible measuring procedures and their evaluation are described below:

Derivation impedance,

derivation attenuation: as a characteristic quantity for evaluating the quality of a cable connection to the wall of the housing (reference potential), the derivation resistance RA is documented via the frequency. This provides information as to what extent charges on the cable screening can be derived against the potential of the housing. To determine the screen



Optimized screening

Article by Dr.-Ing. U. Bochler and Dipl.-Ing. M. Jacobsen EMC problems with the use of cable glands

	Triaxial Method	Measurement of the derivation impedance
Application	Pairs of connectors and screened cables	Cable glands
Measurement	Screen attenuation mass from which the interaction impedance is calculated	Derivation impedance is determined directly
Reference to later application	Description of the screening efficiency: how effectively is the re-radiation of irradiation suppressed by field-linked interferences.	Description of how effectively interferences on the screening can be derived to an earthing mass (e.g. wall of switch cabinet)

attenuation factor of a cable, the derivation attenuation is calculated: the potential at the derivation resistance is related to the maximum available potential in a 50 W reference system. The derivation attenuation is obtained as follows:
 $aA \text{ (in dB)} = 20 \log (2RA / (2RA + 50 W))$.

Triaxial Method: In the Triaxial Method, measurement is carried out in accordance with the German Defence Equipment Standard VG 95373 Pt 40 or 41. These set-ups, using a coaxial structure in a graduated tube (hence the term triaxial), are designed for a male / female socket pair, or employ a piece of cable of defined length for the purpose of qualifying a cable. The values of the screen attenuation mass aS and the coupling impedance ZK are determined for evaluation of the screening effect of the connectors depending upon their material characteristics and their construction, according to the formula: $AS = 20 \log(50 W / ZK)$.

A precondition for measurement according to these standards is a solid sheathing of the supply cable used (generally by means of a tube). However, this results in screen attenuation values of almost 100 dB; for practical applications on a switch cabinet wall, depending upon the conditions, these can be achieved only with difficulty or not at all.

Comparison of both methods: In order to provide by means of the measured values a description of practical use of the a/m products, the measurement procedure of the derivation impedance and conversion into screen attenuation have been used (see Table)

Measurement Results
 Measurements were made upon glands of type SKINTOP® MS-SC-M in various sizes with screened cables ÖLFLEX® CY in diameters of 6 – 22 mm, by both methods, in order to test and compare the validity

of the results for cable glands obtained by each method.

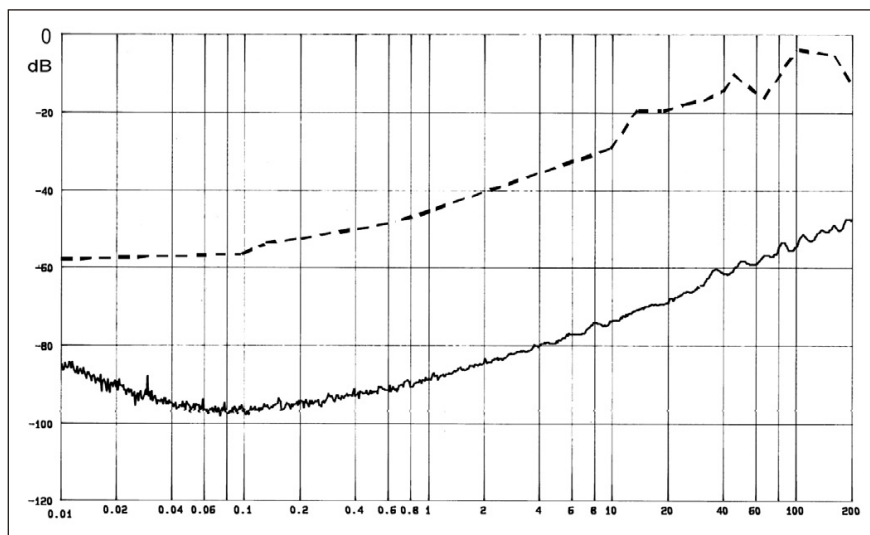
Measuring the derivation impedance: in order to determine the derivation impedance, the cable glands were in each case connected to a piece of cable of approx. 10 cm length. At frequencies up to 10 MHz, all glands reveal a derivation impedance of <1W. This results in attenuation values of 30 – 50 dB (assuming a 50 W reference system). The amplitudes of high-frequency spurious components which are located in this frequency range are thus reduced at least by the factor 30, maximum by the factor 300. Only at frequencies above 3 – 4 MHz does the achievable attenuation sink to values <40 db (factor 100). At higher frequencies (100 MHz), derivation impedance values in the range of 5 – 10 W are obtained. The measurement values confirm the assumed favourable EMC characteristics. Even up to high frequencies, low derivation impedance – or high derivation attenuation values can be obtained. Thus together with effective cable screening, optimum protection against cable-conducted interference signals can be achieved.

Triaxial measurement: Measurements

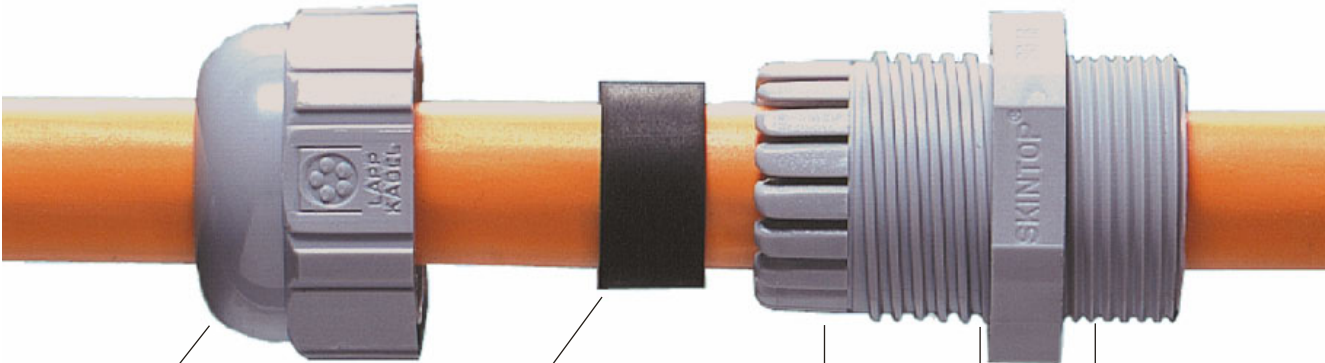
were performed as described above, in accordance with the German Defence Equipment Standard VG 95373, Procedure KS 01 B. The DC resistance of the glands equals 1 mW; this produces screening attenuation values which, depending upon the size and type of the gland, can amount to > 100 dB.

Comparison of results: The results reveal a clear difference between derivation attenuation and the screening attenuation in a system with identical components cable / gland. The curve for derivation attenuation is shifted upwards by approx. 40 dB almost parallel to the screening attenuation curve, i.e. shifted to lower attenuation values. Nevertheless, these values are more meaningful with regard to cable-conducted interference, because in reality, attenuation values of between 80 and 100 dB can hardly be achieved.

Conclusion
 The different measurement methods give different values for the attenuation rate and, with these values, different characteristics are expressed. On the one hand, the value „screening attenuation” expresses how effectively the re-radiation or the irradiation is suppressed by field-linked interferences (Triaxial Method); the value „derivation attenuation”, on the other hand, expresses how effectively interferences on the screening can be derived to an earthing mass (measurement of derivation impedance). This means that attenuation values cannot be simply compared without reservation. It can however be assumed that values for „derivation attenuation” are more meaningful for glands, because the results of the Triaxial Method (screen attenuation) are dependent on the screening of the supply cable used.



Secured by a single turn of the hand



Cap nut with ergonomically designed gripping grooves. The gripping surfaces are generously dimensioned for spanners. Integral locking feature for vibration-resistant assembly.

Neoprene® sealing for a hermetic seal (IP 68 -5 bar/IP 69 K). Every SKINTOP® version is available with reducing seal insert for smaller cable diameters.

Lamellar design for optimum strain relief and protection of the cable. Widely variable clamping range, therefore only a few gland sizes are necessary.

Integral sealing ridges for a watertight junction with the housing.

Multiple trapezoidal thread for secure and instant assembly.

Shown here are the carefully matched components of the SKINTOP® cable glands. It is precisely these parts which guarantee optimum reliability.

■ Even more

With SKINTOP® you can fix the cable in an instant. Just feed it in, turn till tight - ready. So your cable is fixed, centered, hermetically sealed and completely strainrelieved with a turn of the hand. If you do not wish to use your hands, you can of course work with a spanner. Either way, with SKINTOP® you can achieve maximum reliability. To ensure that this remains so, SKINTOP® quality is continuously monitored. A quality which has brought us a great many international approvals.

■ Resistance properties



Thermal SKINTOP® ST-M
static: -40°C up to +100°C
dynamic: -20°C up to +100°C

Chemical

- Alcohols
- Aromatic hydrocarbons
- Ethers
- Benzene
- ☑ Chlorinated hydrocarbons
- Esters
- Grease, animal-vegetable
- Fluorinated hydrocarbons
- Ketones
- Motor fuels

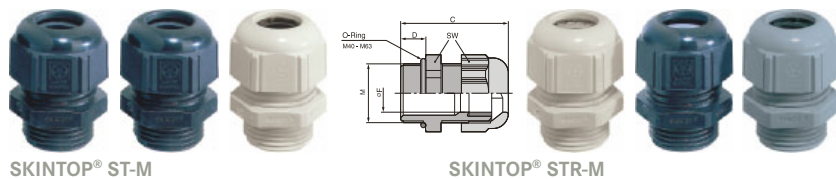
- = resistant
- ☑ = limited resistance
- = non-resistant

For other aggressive media we recommend a test in our laboratory.

Neoprene® is a registered trademark of DuPont de Nemours.

New

SKINTOP® ST-M / SKINTOP® STR-M



SKINTOP® ST-M

SKINTOP® STR-M

Benefits

SKINTOP® ST-M

- High oil-resistance for maximum reliability
- Permanent vibration protection
- Wide, variable clamping ranges
- Optimum strain relief
- Various accessories (e.g. multiple sealing inserts)

SKINTOP® STR-M

- For the benefits, refer to SKINTOP® ST-M

Application range

SKINTOP® ST-M

- Used in areas where cables and wires need to be safely inserted into housings
- Machine and equipment manufacturing
- Photovoltaic
- Automation technology
- Offshore platforms, equipment and shipyards

SKINTOP® STR-M

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals



- UL File Nr. E79903

Design

- Metric connection thread acc. to EN 50262

Note

SKINTOP® ST-M

- Refer to SKINTOP® metric accessories for suitable accessories
- Counter nut to be used: SKINTOP® GMP-GL-M
- SKINTOP® ST M ISO types have an extra-long connection thread
- SKINTOP® ST M ISO versions with extra-long connection thread, see table, no DNV approval

SKINTOP® STR-M

- Refer to SKINTOP® metric accessories for suitable accessories
- Counter nut to be used: SKINTOP® GMP-GL-M
- SKINTOP® STR M ISO types have an extra-long connection thread
- SKINTOP® STR M ISO versions with extra-long connection thread, see table, no DNV approval

Suitable cables

- The following cables are recommended for IP 69 K applications:
ÖLFLEX® ROBUST 200
H07RN8-F
H07RN-F

Suitable tools

SKINTOP® ST-M

- SKINMATIC® QUICK Set 1 refer to page 710
- SKINMATIC® RZ refer to page 711
- SKINMATIC® TORQUE WRENCH refer to page 710



Info

- Now with IP 69 K approval! Proven to withstand the most demanding cleaning procedures for industrial machinery with high-pressure cleaners and hot water!

Technical data



Caution

Refer to Appendix T21 for the installation dimensions and torques



Colour delivered

Silver grey (RAL 7001)
Light grey (RAL 7035)
Black (RAL 9005), UV-resistant



Material

Body: Polyamide
Seal: CR

Tests

GGVS: TÜ.EGG.020-95



Protection rating

IP 68 - 5 bar
IP 69 K



Temperature range

Fixed: -40°C to +100°C
Dynamic: -20°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® ST-M silver grey						
53111000	ST-M 12 x 1,5	3,5-7	15	30,0	8,0	100
53111010	ST-M 16 x 1,5	4,5-10	19	34,0	8,0	100
53111020	ST-M 20 x 1,5	7-13	25	37,0	9,0	100
53111030	ST-M 25 x 1,5	9-17	30	40,0	10,0	50
53111040	ST-M 32 x 1,5	11-21	36	47,0	10,0	25
53111050	ST-M 40 x 1,5	19-28	46	52,0	10,0	10
53111060	ST-M 50 x 1,5	27-35	55	62,0	12,0	5
53111070	ST-M 63 x 1,5	34-45	66	71,0	12,0	5
SKINTOP® ST-M black						
53111200	ST-M 12 x 1,5	3,5-7	15	30,0	8,0	100
53111210	ST-M 16 x 1,5	4,5-10	19	34,0	8,0	100
53111220	ST-M 20 x 1,5	7-13	25	37,0	9,0	100
53111230	ST-M 25 x 1,5	9-17	30	40,0	10,0	50
53111240	ST-M 32 x 1,5	11-21	36	47,0	10,0	25
53111250	ST-M 40 x 1,5	19-28	46	52,0	10,0	10
53111260	ST-M 50 x 1,5	27-35	55	62,0	12,0	5
53111270	ST-M 63 x 1,5	34-45	66	71,0	12,0	5
SKINTOP® ST-M light grey						
53111400	ST-M 12 x 1,5	3,5-7	15	30,0	8,0	100
53111410	ST-M 16 x 1,5	4,5-10	19	34,0	8,0	100
53111420	ST-M 20 x 1,5	7-13	25	37,0	9,0	100
53111430	ST-M 25 x 1,5	9-17	30	40,0	10,0	50
53111440	ST-M 32 x 1,5	11-21	36	47,0	10,0	25
53111450	ST-M 40 x 1,5	19-28	46	52,0	10,0	10
53111460	ST-M 50 x 1,5	27-35	55	62,0	12,0	5
53111470	ST-M 63 x 1,5	34-45	66	71,0	12,0	5
SKINTOP® ST M ISO silver-grey (with long metric connecting thread)						
53017010	ST M 16 x 1,5	3,5-8	19	40,0	12,0	100
53017030	ST M 20 x 1,5	5-12	24	45,0	100	100
53017040	ST M 25 x 1,5	9-14	27	47,0	13,0	50

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® ST M ISO black (with long metric connecting thread)						
53017210	ST M 16 x 1,5	3,5-8	19	40.0	12.0	100
53017230	ST M 20 x 1,5	5-12	24	45.0	13.0	100
53017240	ST M 25 x 1,5	9-14	27	47.0	13.0	50
SKINTOP® STR-M silver grey						
53111100	STR-M 12 x 1,5	1-5	15	30.0	8.0	100
53111110	STR-M 16 x 1,5	2-7	19	34.0	8.0	100
53111120	STR-M 20 x 1,5	5-10	25	37.0	9.0	100
53111130	STR-M 25 x 1,5	6-13	30	40.0	10.0	50
53111140	STR-M 32 x 1,5	7-15	36	47.0	10.0	25
53111150	STR-M 40 x 1,5	15-23	46	52.0	10.0	10
53111160	STR-M 50 x 1,5	22-29	55	62.0	12.0	5
53111170	STR-M 63 x 1,5	28-39	66	71.0	12.0	5
SKINTOP® STR-M black						
53111300	STR-M 12 x 1,5	1-5	15	30.0	8.0	100
53111310	STR-M 16 x 1,5	2-7	19	34.0	8.0	100
53111320	STR-M 20 x 1,5	5-10	25	37.0	9.0	100
53111330	STR-M 25 x 1,5	6-13	30	40.0	10.0	50
53111340	STR-M 32 x 1,5	7-15	36	47.0	10.0	25
53111350	STR-M 40 x 1,5	15-23	46	52.0	10.0	10
53111360	STR-M 50 x 1,5	22-29	55	62.0	12.0	5
53111370	STR-M 63 x 1,5	28-39	66	71.0	12.0	5
SKINTOP® STR-M light grey						
53111500	STR-M 12 x 1,5	1-5	15	30.0	8.0	100
53111510	STR-M 16 x 1,5	2-7	19	34.0	8.0	100
53111520	STR-M 20 x 1,5	5-10	25	37.0	9.0	100
53111530	STR-M 25 x 1,5	6-13	30	40.0	10.0	50
53111540	STR-M 32 x 1,5	7-15	36	47.0	10.0	25
53111550	STR-M 40 x 1,5	15-23	46	52.0	10.0	10
53111560	STR-M 50 x 1,5	22-29	55	62.0	12.0	5
53111570	STR-M 63 x 1,5	28-39	66	71.0	12.0	5
SKINTOP® STR M ISO silver-grey (with long metric connecting thread)						
53017110	STR M 16 x 1,5	2-6	19	40.0	12.0	100
53017130	STR M 20 x 1,5	4-9	24	45.0	13.0	100
53017140	STR M 25 x 1,5	6-12	27	47.0	13.0	50
SKINTOP® STR M ISO black (with long metric connecting thread)						
53017310	STR M 16 x 1,5	2-6	19	40.0	12.0	100
53017330	STR M 20 x 1,5	4-9	24	45.0	13.0	100
53017340	STR M 25 x 1,5	6-12	27	47.0	13.0	50

Photographs are not to scale and do not represent detailed images of the respective products.

■ Accessories

SKINTOP® ST-M

- SKINTOP® DIX-M refer to page 672
- SKINTOP® GMP-GL-M refer to page 670
- SKINTOP® DIX-M AUTOMATION refer to page 673
- SKINTOP® SDV-M ATEX refer to page 674
- SKINTOP® SD-M refer to page 675
- SKINTOP® DV-M refer to page 675

SKINTOP® STR-M

- SKINTOP® GMP-GL-M refer to page 670
- SKINTOP® SDVR-M ATEX refer to page 674
- SKINTOP® SD-M refer to page 675

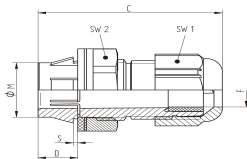
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

SKINTOP® CLICK / SKINTOP® CLICK-R



SKINTOP® CLICK



Info

- The most innovative cable insertion system in the market for a fast and highly flexible assembly. Simply click in - turn to the left - turn to the right - finished. The result: fixed, centred, strain-relieved fitting and maximum protection class in a few seconds.

Benefits

SKINTOP® CLICK

- Fewer parts, counter nut no longer needed
- Save up to 70% of the time with the innovative CLICK system
- Simple, free assembly in any position
- Vibration protection
- No thread required

SKINTOP® CLICK-R

- For the benefits, refer to SKINTOP® CLICK

Application range

SKINTOP® CLICK

- Automation technology
- Solar applications
- Control cabinet manufacturing
- Measurement, control and electrical applications
- Air-conditioning technology

SKINTOP® CLICK-R

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals



- UL File Nr. E79903

Included

- Included: disassembly tool

Technical data

RAL Colour delivered
 Silver grey (RAL 7001)
 Light grey (RAL 7035)
 Black (RAL 9005), UV-resistant

Material
 Body: special polyamide
 Seal: special elastomer

IP Protection rating
SKINTOP® CLICK
 IP 68 - 4 bar (M12)
 IP 68 - 5 bar (M16 - M32)

Temperature range
 Dynamic: -20°C to +100°C
 Fixed: -40°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	M (hole in mm)	SW 1/SW 2 mm	Overall length, C (mm)	Thread length, D (mm)	Wall thickness, S (mm)	Pieces / PU
SKINTOP® CLICK light grey								
53112692	CLICK 12	3.5 - 7	12.3 (-0.2)	15 / 18	40.0	8.0	1.0 - 4.0	50
53112686	CLICK 16	5 - 9	16.3 (-0.2)	19 / 22	42.0	8.0	1.0 - 4.0	50
53112687	CLICK 20	7 - 13	20.3 (-0.2)	25 / 27	45.5	8.0	1.0 - 4.0	25
53112688	CLICK 25	9 - 17	25.3 (-0.2)	30 / 34	48.5	8.0	1.0 - 4.0	25
53112694	CLICK 32	11 - 21	32.3 (-0.2)	36 / 40	55.0	8.0	1.0 - 4.0	25
SKINTOP® CLICK silver grey								
53112921	CLICK 12	3.5 - 7	12.3 (-0.2)	15 / 18	40.0	8.0	1.0 - 4.0	50
53112876	CLICK 16	5 - 9	16.3 (-0.2)	19 / 22	42.0	8.0	1.0 - 4.0	50
53112877	CLICK 20	7 - 13	20.3 (-0.2)	25 / 27	45.5	8.0	1.0 - 4.0	25
53112878	CLICK 25	9 - 17	25.3 (-0.2)	30 / 34	48.5	8.0	1.0 - 4.0	25
53112922	CLICK 32	11 - 21	32.3 (-0.2)	36 / 40	55.0	8.0	1.0 - 4.0	25
SKINTOP® CLICK black								
53112923	CLICK 12	3.5 - 7	12.3 (-0.2)	15 / 18	40.0	8.0	1.0 - 4.0	50
53112882	CLICK 16	5 - 9	16.3 (-0.2)	19 / 22	42.0	8.0	1.0 - 4.0	50
53112883	CLICK 20	7 - 13	20.3 (-0.2)	25 / 27	45.5	8.0	1.0 - 4.0	25
53112884	CLICK 25	9 - 17	25.3 (-0.2)	30 / 34	48.5	8.0	1.0 - 4.0	25
53112924	CLICK 32	11 - 21	32.3 (-0.2)	36 / 40	55.0	8.0	1.0 - 4.0	25
SKINTOP® CLICK-R light grey								
53112925	CLICK-R 12	1 - 5	12.3 (-0.2)	15 / 18	40.0	8.0	1.0 - 4.0	50
53112689	CLICK-R 16	4 - 7	16.3 (-0.2)	19 / 22	42.0	8.0	1.0 - 4.0	50
53112690	CLICK-R 20	5 - 10	20.3 (-0.2)	25 / 27	45.5	8.0	1.0 - 4.0	25
53112691	CLICK-R 25	6 - 13	25.3 (-0.2)	30 / 34	48.5	8.0	1.0 - 4.0	25
53112926	CLICK-R 32	7 - 15	32.3 (-0.2)	36 / 40	55.0	8.0	1.0 - 4.0	25
SKINTOP® CLICK-R silver grey								
53112927	CLICK-R 12	1 - 5	12.3 (-0.2)	15 / 18	40.0	8.0	1.0 - 4.0	50
53112879	CLICK-R 16	4 - 7	16.3 (-0.2)	19 / 22	42.0	8.0	1.0 - 4.0	50
53112880	CLICK-R 20	5 - 10	20.3 (-0.2)	25 / 27	45.5	8.0	1.0 - 4.0	25
53112881	CLICK-R 25	6 - 13	25.3 (-0.2)	30 / 34	48.5	8.0	1.0 - 4.0	25
53112928	CLICK-R 32	7 - 15	32.3 (-0.2)	36 / 40	55.0	8.0	1.0 - 4.0	25
SKINTOP® CLICK-R black								
53112929	CLICK-R 12	1 - 5	12.3 (-0.2)	15 / 18	40.0	8.0	1.0 - 4.0	50
53112885	CLICK-R 16	4 - 7	16.3 (-0.2)	19 / 22	42.0	8.0	1.0 - 4.0	50
53112886	CLICK-R 20	5 - 10	20.3 (-0.2)	25 / 27	45.5	8.0	1.0 - 4.0	25
53112887	CLICK-R 25	6 - 13	25.3 (-0.2)	30 / 34	48.5	8.0	1.0 - 4.0	25
53112931	CLICK-R 32	7 - 15	32.3 (-0.2)	36 / 40	55.0	8.0	1.0 - 4.0	25

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

SKINTOP® CLICK

- SKINTOP® DIX-M refer to page 672
- SKINTOP® DIX-M AUTOMATION refer to page 673
- SKINTOP® SDV-M ATEX refer to page 674
- SKINTOP® SD-M refer to page 675
- SKINTOP® DV-M refer to page 675

SKINTOP® CLICK-R

- SKINTOP® SDVR-M ATEX refer to page 674

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

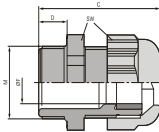
New

SKINTOP® SOLAR / SKINTOP® SOLAR plus
SKINTOP® for photovoltaics

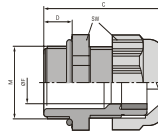


Info

- Cable gland for photovoltaic applications, based on EN 50262, EN 50548 and UL 1703.



SKINTOP® SOLAR



SKINTOP® SOLAR plus



Benefits

- UV and ozone-resistant
- UL 746 C - UL F1 outdoor use
- High strain relief
- Permanent vibration protection
- Extremely flame-retardant according to UL 94V-0 / 94-5VA

Application range

- Photovoltaic plants and solar parks

Approvals



- UL File Nr. E79903

Design

- Metric connection thread acc. to EN 50262

Note

- Counter nut to be used: SKINDICHT® SM-M
- Counter nut to be used: SKINTOP® GMP-GL-M

Suitable cables

- ÖLFLEX® SOLAR

Suitable tools

- SKINMATIC® RZ
- SKINMATIC® QUICK SET 1

Technical data



Caution

Refer to Appendix T21 for the installation dimensions and torques



Colour delivered
SKINTOP® SOLAR

Black (RAL 9005)

SKINTOP® SOLAR plus

RAL 9005 black/UV-resistant



Material

SKINTOP® SOLAR

Body: Polycarbonate

Seal: CR

SKINTOP® SOLAR plus

Body: Polycarbonate

Seal: Silicone

O-Ring: Silicone

Tests

Cold impact test according to UL 1703/UL 746 C



Protection rating

IP 68 - 5 bar



Temperature range

SKINTOP® SOLAR

-40 °C to +100 °C

SKINTOP® SOLAR plus

-40 °C to +125 °C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® SOLAR						
53113300	SOLAR M12x1,5	3,5-7	15	36.0	15.0	100
53113310	SOLAR M16x1,5	7-9	19	34.0	8.0	100
SKINTOP® SOLAR plus						
53113321	SOLAR plus M12x1,5	3,5-7	15	36.0	15.0	100
53113331	SOLAR plus M16x1,5	7-9	19	34.0	8.0	100

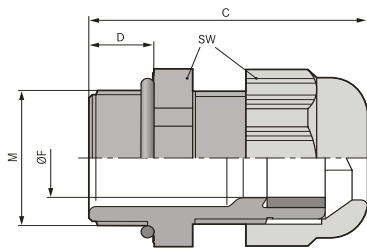
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

SKINTOP® ST-HF-M

SKINTOP® halogen-free



SKINTOP® ST-HF-M

■ **Benefits**

- Maximum reliability
- Extremely flame-retardant according to UL 94V-0
- Completely halogen-free (including sealing material)
- Self-extinguishing, no dripping
- Permanent vibration protection

■ **Application range**

- When the protection of people and property is a priority.
- Public buildings
- Ventilation systems
- Tunnel construction
- Underground railways and trains

■ **Approvals**



■ **Design**

- Metric connection thread acc. to EN 50262

■ **Technical data**

Caution
Refer to Appendix T21 for the installation dimensions and torques

RAL Colour delivered
Light grey (RAL 7035)

Material
Polyamide UL 94V-0 - halogen-free
Sealing ring: LSE 1 - halogen-free
O-ring: LSE 1 - halogen-free

Tests
Filament wire test
EN 60695-2-1/1
+960°C

IP Protection rating
IP 68 - 5 bar

Temperature range
-20°C to +100°C

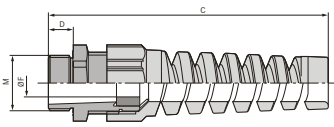
Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® ST-HF-M						
53111407	ST-HF-M 12 x 1,5	4-5,5	15	30,0	8,0	100
53111417	ST-HF-M 16 x 1,5	4,5-9	19	34,0	8,0	100
53111427	ST-HF-M 20 x 1,5	7-13	25	37,0	9,0	100
53111437	ST-HF-M 25 x 1,5	9-17	30	40,0	10,0	50
53111447	ST-HF-M 32 x 1,5	11-21	36	47,0	10,0	25
53111457	ST-HF-M 40 x 1,5	19-28	46	52,0	10,0	10
53111467	ST-HF-M 50 x 1,5	27-35	55	62,0	12,0	5
53111477	ST-HF-M 63 x 1,5	34-45	66	71,0	12,0	5

Photographs are not to scale and do not represent detailed images of the respective products.

■ **Accessories**

- SKINTOP® GMP-HF-M refer to page 671

SKINTOP® BS-M



SKINTOP® BS-M

Benefits

- Reliable bending and anti-kink protection
- Cable conservation
- Functional reliability
- To protect flexible cables

Application range

- Cables for electrical appliances and machinery that are moved under normal use must be protected against excessive bending as required in accordance with VDE 0730.
- Handheld device
- Robotics industry
- Light and sound applications
- Moving machine parts

Approvals



- UL File Nr. E79903

Design

- Metric connection thread acc. to EN 50262

Note

- Refer to SKINTOP® metric accessories for suitable accessories
- Counter nut to be used: SKINTOP® GMP-GL-M
- Version with reducing insert to seal smaller cable cross-sections SKINTOP® BSR-M on request
- SKINTOP® BS M ISO versions with extra-long connection thread, see table, no DNV approval

Technical data

- Caution**
Refer to Appendix T21 for the installation dimensions and torques
- Upon request**
with reducing sealing ring
- Colour delivered**
Silver grey (RAL 7001)
Light grey (RAL 7035)
Black (RAL 9005), UV-resistant
- Material**
Body: Polyamide
Seal: CR
- Protection rating**
IP 68 - 5 bar
IP 69 K pending
- Temperature range**
-20°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® BS-M silver grey						
53111600	BS-M 12x1,5	3,5-7	15	64.0	8.0	100
53111610	BS-M 16x1,5	4,5-10	19	86.0	8.0	100
53111620	BS-M 20x1,5	7-13	25	101.0	8.0	50
53111630	BS-M 25x1,5	9-17	30	125.0	9.0	25
53111640	BS-M 32x1,5	11-21	36	149.0	10.0	25
SKINTOP® BS-M black						
53111700	BS-M 12x1,5	3,5-7	15	64.0	8.0	100
53111710	BS-M 16x1,5	4,5-10	19	86.0	8.0	100
53111720	BS-M 20x1,5	7-13	25	101.0	8.0	50
53111730	BS-M 25x1,5	9-17	30	125.0	9.0	25
53111740	BS-M 32x1,5	11-21	36	149.0	10.0	25
SKINTOP® BS-M light grey						
53111800	BS-M 12x1,5	3,5-7	15	64.0	8.0	100
53111810	BS-M 16x1,5	4,5-10	19	86.0	8.0	100
53111820	BS-M 20x1,5	7-13	25	101.0	8.0	50
53111830	BS-M 25x1,5	9-17	30	125.0	9.0	25
53111840	BS-M 32x1,5	11-21	36	149.0	10.0	25
SKINTOP® BS M ISO silver-grey (with long metric connecting thread)						
53017610	BS M16 x 1,5 PG 9	3,5-8	19	77.5	12.0	100
53017630	BS M 20 x 1,5 PG 13,5	5-12	24	102.0	13.0	50
53017640	BS M 25 x 1,5 PG 16	9-14	27	114.5	13.0	50
SKINTOP® BS M ISO black (with long metric connecting thread)						
53017810	BS M 16 x 1,5 PG 9	3,5-8	19	77.5	12.0	100
53017830	BS M 20 x 1,5 PG 13,5	5-12	24	102.0	13.0	50
53017840	BS M 25 x 1,5 PG 16	9-14	27	114.5	13.0	50

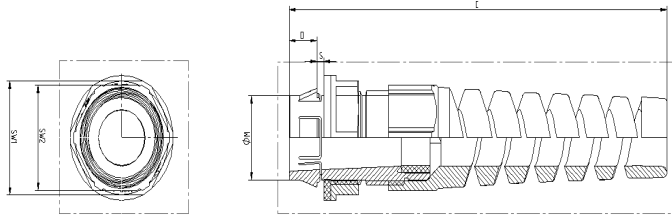
Photographs are not to scale and do not represent detailed images of the respective products.

New

SKINTOP® CLICK BS



SKINTOP® CLICK BS



Info

- The most innovative cable insertion system in the market for a fast and highly flexible assembly. Simply click in - turn to the left - turn to the right - finished. The result: fixed, centred, strain-relieved fitting and maximum protection class in a few seconds.

Benefits

- Reliable bending protection for cable conservation and functional reliability
- Save up to 70% of the time with the innovative CLICK system
- No thread required
- To protect flexible cables
- Fewer parts, counter nut no longer needed

Application range

- Cables for electrical appliances and machinery that are moved under normal use must be protected against excessive bending as required in accordance with VDE 0730.
- Robotics industry
- Moving machine parts
- Apparatus construction
- Light and sound applications

Approvals



- UL File Nr. E79903

Included

- Included: disassembly tool

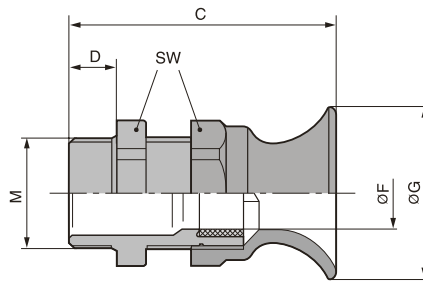
Technical data

RAL	Colour delivered Silver grey (RAL 7001) Light grey (RAL 7035) Black (RAL 9005), UV-resistant
	Material Body: special polyamide Seal: special elastomer
IP	Protection rating IP 68 - 4 bar (M12) IP 68 - 5 bar (M16 - M32)
	Temperature range -20°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	M (hole in mm)	SW 1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Wall thickness, S (mm)	Pieces / PU
SKINTOP® CLICK BS light grey								
53112932	CLICK BS 12	3,5-7	12,3 (-0,2)	15 / 18	74,0	8,0	1,0 - 4,0	50
53112888	CLICK BS 16	5-9	16,3 (-0,2)	19 / 22	94,0	8,0	1,0 - 4,0	50
53112889	CLICK BS 20	7-13	20,3 (-0,2)	19 / 22	108,0	8,0	1,0 - 4,0	25
53112890	CLICK BS 25	9-17	25,3 (-0,2)	30 / 34	127,0	8,0	1,0 - 4,0	25
53112933	CLICK BS 32	11-21	32,3 (-0,2)	36 / 40	155,0	8,0	1,0 - 4,0	25
SKINTOP® CLICK BS silver grey								
53112934	CLICK BS 12	3,5-7	12,3 (-0,2)	15 / 18	74,0	8,0	1,0 - 4,0	50
53112906	CLICK BS 16	5-9	16,3 (-0,2)	19 / 22	94,0	8,0	1,0 - 4,0	50
53112907	CLICK BS 20	7-13	20,3 (-0,2)	19 / 22	108,0	8,0	1,0 - 4,0	25
53112908	CLICK BS 25	9-17	25,3 (-0,2)	30 / 34	127,0	8,0	1,0 - 4,0	25
53112935	CLICK BS 32	11-21	32,3 (-0,2)	36 / 40	155,0	8,0	1,0 - 4,0	25
SKINTOP® CLICK BS black								
53112936	CLICK BS 12	3,5-7	12,3 (-0,2)	15 / 18	74,0	8,0	1,0 - 4,0	50
53112909	CLICK BS 16	5-9	16,3 (-0,2)	19 / 22	94,0	8,0	1,0 - 4,0	50
53112911	CLICK BS 20	7-13	20,3 (-0,2)	19 / 22	108,0	8,0	1,0 - 4,0	25
53112912	CLICK BS 25	9-17	25,3 (-0,2)	30 / 34	127,0	8,0	1,0 - 4,0	25
53112937	CLICK BS 32	11-21	32,3 (-0,2)	36 / 40	155,0	8,0	1,0 - 4,0	25

Photographs are not to scale and do not represent detailed images of the respective products.

SKINTOP® BT-M



SKINTOP® BT-M

Benefits

- Reliable bending and anti-kink protection
- Cable conservation
- Functional reliability
- To protect flexible cables

Application range

- Cables for electrical appliances and machinery that are moved under normal use must be protected against excessive bending as required in accordance with VDE 0730.
- Handheld device
- Apparatus construction
- Light and sound applications
- Moving machine parts

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- Refer to SKINTOP® PG accessories for suitable accessories
- Counter nut to be used: SKINTOP® GMP-GL-M

Technical data

- Caution**
Refer to Appendix T21 for the installation dimensions and torques
- Colour delivered**
Silver grey (RAL 7001)
- Material**
Body: Polyamide
Seal: CR
- Protection rating**
IP 68 - 5 bar
- Temperature range**
-20°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® BT-M						
53017420	16 x 1,5	3,5-8	19	45,0	12,0	100
53017430	20 x 1,5	5-12	24	54,0	13,0	50
53017440	25 x 1,5	9-14	27	57,0	13,0	50

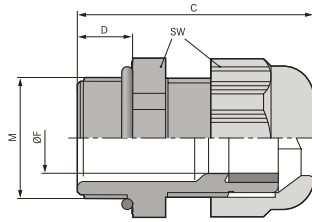
Photographs are not to scale and do not represent detailed images of the respective products.

New

SKINTOP® K-M ATEX plus / SKINTOP® KR-M ATEX plus



SKINTOP® K-M ATEX plus



SKINTOP® KR-M ATEX plus

Benefits

SKINTOP® K-M ATEX plus

- High degree of protection
- Cold impact resistance
- High strain relief
- Wide, variable clamping ranges
- Permanent vibration protection

SKINTOP® KR-M ATEX plus

- For the benefits, refer to SKINTOP® K-M ATEX plus

Application range

SKINTOP® K-M ATEX plus

- Devices, machines and apparatus of enhanced safety protection type "e"
- Equipment group II / Category 2G+ 1D
- For mobile applications in offshore and marine industries
- Chemical and petrochemical industry

SKINTOP® KR-M ATEX plus

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals



Design

- Metric connection thread acc. to EN 50262

Technical data

Caution
Refer to the instruction leaflet for the installation dimensions and torques

Approvals
IBExU08ATEX 1063 X
Ex II 1D Ex tD A20 IP 6x
Ex II 2G Ex e II

Colour delivered
RAL 9005 schwarz/UV-beständig

Material
Body: special polyamide
Seal: special elastomer
O-ring: CR

Tests
DIN EN 60079-0
DIN EN 60079-7

Protection rating
IP 68 - 10 bar

Temperature range
-20°C to +80°C

Article number	Article designation / size	Clamping range ØF (mm)	Thread M	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® K-M ATEX plus							
54115200	K-M 12 ATEX plus	3-5,5	12 x 1.5	15	26.5 - 30.0	8.0	50
54115210	K-M 16 ATEX plus	7-9	16 x 1.5	19	29.0 - 34.0	8.0	50
54115220	K-M 20 ATEX plus	7-13	20 x 1.5	25	34.0 - 37.0	9.0	50
54115230	K-M 25 ATEX plus	11-17	25 x 1.5	30	35.0 - 40.0	10.0	25
54115240	K-M 32 ATEX plus	12-21	32 x 1.5	36	39.0 - 47.0	10.0	25
54115250	K-M 40 ATEX plus	19-28	40 x 1.5	46	43.0 - 52.0	10.0	10
54115260	K-M 50 ATEX plus	27-35	50 x 1.5	55	54.0 - 62.0	12.0	5
54115270	K-M 63 ATEX plus	36-45	63 x 1.5	66	59.0 - 71.0	12.0	5
SKINTOP® KR-M ATEX plus							
54115205	KR-M 12 ATEX plus	2-4	12 x 1.5	15	26.5 - 30.0	8.0	50
54115215	KR-M 16 ATEX plus	4-6	16 x 1.5	19	29.0 - 34.0	8.0	50
54115225	KR-M 20 ATEX plus	5-10	20 x 1.5	25	34.0 - 37.0	9.0	50
54115235	KR-M 25 ATEX plus	6-13	25 x 1.5	30	35.0 - 40.0	10.0	25
54115245	KR-M 32 ATEX plus	9-15	32 x 1.5	36	39.0 - 47.0	10.0	25
54115255	KR-M 40 ATEX plus	16-23	40 x 1.5	46	43.0 - 52.0	10.0	10
54115265	KR-M 50 ATEX plus	22-29	50 x 1.5	55	54.0 - 62.0	12.0	5
54115275	KR-M 63 ATEX plus	29-39	63 x 1.5	66	59.0 - 71.0	12.0	5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

SKINTOP® K-M ATEX plus

- SKINTOP® SDV-M ATEX refer to page 674

SKINTOP® KR-M ATEX plus

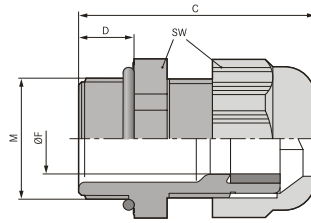
- SKINTOP® SDVR-M ATEX refer to page 674

New

SKINTOP® K-M ATEX plus blue / SKINTOP® KR-M ATEX plus blue



SKINTOP® KR-M ATEX plus blue



SKINTOP® K-M ATEX plus blue

Benefits

SKINTOP® K-M ATEX plus blue

- High degree of protection
- Cold impact resistance
- High strain relief
- Wide, variable clamping ranges
- Permanent vibration protection

SKINTOP® KR-M ATEX plus blue

- For the benefits, refer to SKINTOP® K-M ATEX plus blue

Application range

SKINTOP® K-M ATEX plus blue

- Intrinsically safe circuits (class “i”) as well as in housings and devices that require class “e” safety.
- Equipment group II / Category 2G+1D
- For mobile applications in offshore and marine industries
- Chemical and petrochemical industry

SKINTOP® KR-M ATEX plus blue

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals



Design

- Metric connection thread acc. to EN 50262

Technical data



Caution
Refer to the instruction leaflet for the installation dimensions and torques



Approvals
IBExU08ATEX 1063 X
Ex II 1D Ex tD A20 IP 6x
Ex II 2G Ex e II



Colour delivered
Blue (RAL 5015)



Material
Body: special polyamide
Seal: special elastomer
O-ring: CR

Tests
DIN EN 60079-0
DIN EN 60079-7



Protection rating
IP 68 - 10 bar



Temperature range
-20 °C to +80 °C

Article number	Article designation / size	Clamping range ØF (mm)	Thread M	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® K-M ATEX plus blue							
54115400	K-M 12 ATEX plus blue	3-5,5	12 x 1.5	15	26.5 - 30.0	8.0	50
54115410	K-M 16 ATEX plus blue	7-9	16 x 1.5	19	29.0 - 34.0	8.0	50
54115420	K-M 20 ATEX plus blue	7-13	20 x 1.5	25	34.0 - 37.0	9.0	50
54115430	K-M 25 ATEX plus blue	11-17	25 x 1.5	30	35.0 - 40.0	10.0	25
54115440	K-M 32 ATEX plus blue	12-21	32 x 1.5	36	39.0 - 47.0	10.0	25
54115450	K-M 40 ATEX plus blue	19-28	40 x 1.5	46	43.0 - 52.0	10.0	10
54115460	K-M 50 ATEX plus blue	27-35	50 x 1.5	55	54.0 - 62.0	12.0	5
54115470	K-M 63 ATEX plus blue	36-45	63 x 1.5	66	59.0 - 71.0	12.0	5
SKINTOP® KR-M ATEX plus blue							
54115405	KR-M 12 ATEX plus blue	2-4	12 x 1.5	15	26.5 - 30.0	8.0	50
54115415	KR-M 16 ATEX plus blue	4-6	16 x 1.5	19	29.0 - 34.0	8.0	50
54115425	KR-M 20 ATEX plus blue	5-10	20 x 1.5	25	34.0 - 37.0	9.0	50
54115435	KR-M 25 ATEX plus blue	6-13	25 x 1.5	30	35.0 - 40.0	10.0	25
54115445	KR-M 32 ATEX plus blue	9-15	32 x 1.5	36	39.0 - 47.0	10.0	25
54115455	KR-M 40 ATEX plus blue	16-23	40 x 1.5	46	43.0 - 52.0	10.0	10
54115465	KR-M 50 ATEX plus blue	22-29	50 x 1.5	55	54.0 - 62.0	12.0	5
54115475	KR-M 63 ATEX plus blue	29-39	63 x 1.5	66	59.0 - 71.0	12.0	5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

SKINTOP® K-M ATEX plus blue

- SKINTOP® SDV-M ATEX refer to page 674

SKINTOP® KR-M ATEX plus blue

- SKINTOP® SDVR-M ATEX refer to page 674

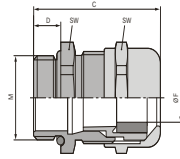
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

SKINTOP® MS-M / SKINTOP® MSR-M



SKINTOP® MS-M



SKINTOP® MSR-M



Info

- SKINTOP® MS-M sizes 75 x 1.5 to 110 x 2 with innovative double lamella gasket for easier assembling of cables with large diameters.
- Now with IP 69 K approval! Proven to withstand the most demanding cleaning procedures for industrial machinery with high-pressure cleaners and hot water!

Benefits

SKINTOP® MS-M

- Maximum reliability
- Optimum strain relief
- Wide, variable clamping ranges
- For cable diameters up to 98 mm

SKINTOP® MSR-M

- For the benefits, refer to SKINTOP® MS-M

Application range

SKINTOP® MS-M

- In areas where mechanical and chemical stability are critical
- Machine and equipment manufacturing
- Measurement and control technology
- Machine and equipment manufacturing
- Plant engineering

SKINTOP® MSR-M

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals



- UL File Nr. E79903

Design

- Metric connection thread acc. to EN 50262

Note

- Counter nut to be used: SKINDICHT® SM-M
- Refer to SKINTOP® metric accessories for suitable accessories

Suitable cables

SKINTOP® MS-M

- The following cables are recommended for IP 69 K applications:
ÖLFLEX® ROBUST 200
H07RN8-F
H07RN-F

Technical data



Caution

Refer to Appendix T21 for the installation dimensions and torques



Approvals

IP 69 K approval from size M75 x 1.5 pending. UL, CSA, DNV and VDE approval for sizes M90 x 2 to M110 x 2 pending.



Material

Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR



Protection rating

IP 68
IP 69 K



Temperature range

Dynamic: -30 °C to +100 °C
Fixed: -40 °C to +100 °C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-M/SKINTOP® MSR-M						
53112000	12 x 1,5	3-7	16	26,5	6,5	100
53112010	16 x 1,5	4,5-10	20	32,0	7,0	100
53112020	20 x 1,5	7-13	24	35,5	8,0	50
53112030	25 x 1,5	9-17	29	37,5	8,0	25
53112040	32 x 1,5	11-21	36	42,2	9,0	25
53112050	40 x 1,5	19-28	45	49,5	9,0	10
53112060	50 x 1,5	27-35	54	52,0	10,0	5
53112070	63 x 1,5	34-45	67	61,3	15,0	5
53112080	63 x 1,5 plus	44-55	75	65,5	15,0	5
53112510	75 x 1,5	58-68	95	105,0	15,0	1
53112512	90 x 2	66-78	115	136,0	20,0	1
53112514	110 x 2	86-98	135	154,0	25,0	1
SKINTOP® MSR-M						
53112100	12 x 1,5	1-5	16	26,5	6,5	100
53112110	16 x 1,5	2-7	20	32,0	7,0	100
53112120	20 x 1,5	5-10	24	35,5	8,0	50
53112130	25 x 1,5	6-13	29	37,5	8,0	25
53112140	32 x 1,5	7-15	36	42,2	9,0	25
53112150	40 x 1,5	15-23	45	49,5	9,0	10
53112160	50 x 1,5	22-29	54	52,0	10,0	5
53112170	63 x 1,5	28-39	67	61,3	15,0	5
53112511	75 x 1,5	53-63	95	105,0	15,0	1
53112515	110 x 2	76-88	135	154,0	25,0	1

Photographs are not to scale and do not represent detailed images of the respective products.

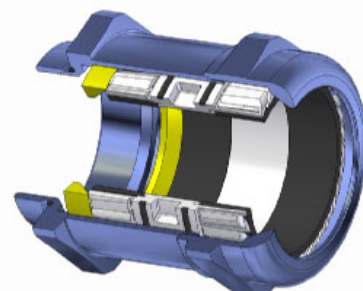
Accessories

SKINTOP® MS-M

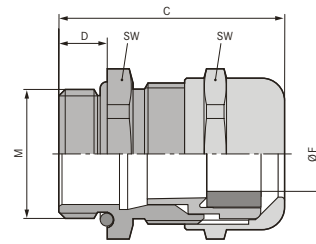
- SKINDICHT® SM-M refer to page 694
- SKINTOP® DIX-M refer to page 672
- SKINMATIC® MH Set refer to page 710
- SKINTOP® DIX-M AUTOMATION refer to page 673
- SKINTOP® SDV-M ATEX refer to page 674
- SKINTOP® SD-M refer to page 675
- SKINTOP® DV-M refer to page 675

SKINTOP® MSR-M

- SKINDICHT® SM-M refer to page 694
- SKINTOP® SDVR-M ATEX refer to page 674
- SKINTOP® SD-M refer to page 675



SKINTOP® MS-M-XL / SKINTOP® MSR-M-XL



Benefits

SKINTOP® MS-M-XL

- Especially for thick walls
- Maximum reliability
- Optimum strain relief
- Wide, variable clamping ranges

SKINTOP® MSR-M-XL

- For the benefits, refer to SKINTOP® MS-M-XL

Application range

SKINTOP® MS-M-XL

- With long connection thread for applications involving a thicker wall.

SKINTOP® MSR-M-XL

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals



- UL File Nr. E79903

Design

- Metric connection thread acc. to EN 50262

Note

- Counter nut to be used: SKINDICHT® SM-M
- Refer to SKINTOP® metric accessories for suitable accessories

Technical data

- Caution**
Refer to Appendix T21 for the installation dimensions and torques
- Material**
Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR
- Protection rating**
IP 68 - 10 bar
IP 69 K
- Temperature range**
Dynamic: -30 °C to +100 °C
Fixed: -40 °C to +100 °C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-M-XL						
53112005	12 x 1,5	3-7	16	32.8	12.0	100
53112015	16 x 1,5	4,5-10	20	37.0	12.0	50
53112025	20 x 1,5	7-13	24	39.5	12.0	50
53112035	25 x 1,5	9-17	29	41.5	12.0	25
53112045	32 x 1,5	11-21	36	48.2	15.0	25
53112055	40 x 1,5	19-28	45	53.5	15.0	10
53112065	50 x 1,5	27-35	54	57.0	15.0	5
SKINTOP® MSR-M-XL						
53112105	12 x 1,5	1-5	16	32.8	12.0	100
53112115	16 x 1,5	2-7	20	37.0	12.0	50
53112125	20 x 1,5	5-10	24	39.5	12.0	50
53112135	25 x 1,5	6-13	29	41.5	12.0	25
53112145	32 x 1,5	7-15	36	48.2	15.0	25
53112155	40 x 1,5	15-23	45	53.5	15.0	10
53112165	50 x 1,5	22-29	54	57.0	15.0	5

Photographs are not to scale and do not represent detailed images of the respective products.

New

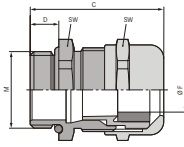
SKINTOP® COLD / SKINTOP® COLD-R



SKINTOP® COLD



SKINTOP® COLD-R



Info

- For extreme sub-zero temperatures

Benefits

SKINTOP® COLD

- High cold-resistance
- Cold impact resistance
- High mechanical stability
- Optimum strain relief
- Wide, variable clamping ranges

SKINTOP® COLD-R

- For the benefits, refer to SKINTOP® COLD

Application range

SKINTOP® COLD

- In areas where mechanical stability and high cold-resistance are critical
- Air-conditioning technology
- Freezing plants, cold storage
- Offshore sector
- Plant engineering

SKINTOP® COLD-R

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- Counter nut to be used: SKINDICHT® SM-M
- Refer to SKINTOP® metric accessories for suitable accessories

Technical data



Caution

Refer to Appendix T21 for the installation dimensions and torques



Material

Body: nickel-plated brass
Insert: special polyamide
Sealing ring: silicone
O-ring: silicone



Protection rating

IP 68 - 10 bar (M12 x 1.5 - M20 x 1.5)
IP 68 - 5 bar (M25 x 1.5 - M63 x 1.5)



Temperature range

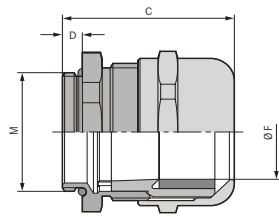
-70°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® COLD						
53113500	12 x 1,5	3-7	16	26,5	6,5	100
53113510	16 x 1,5	4,5-10	20	32,0	7,0	100
53113520	20 x 1,5	7-13	24	35,5	8,0	50
53113530	25 x 1,5	9-17	29	37,5	8,0	25
53113540	32 x 1,5	11-21	36	42,2	9,0	25
53113550	40 x 1,5	19-28	45	49,5	9,0	10
53113560	50 x 1,5	27-35	54	52,0	10,0	5
53113570	63 x 1,5	34-45	67	61,3	15,0	5
SKINTOP® COLD-R						
53113600	12 x 1,5	1-5	16	26,5	6,5	100
53113610	16 x 1,5	2-7	20	32,0	7,0	100
53113620	20 x 1,5	5-10	24	35,5	8,0	50
53113630	25 x 1,5	6-13	29	37,5	8,0	25
53113640	32 x 1,5	7-15	36	42,2	9,0	25
53113650	40 x 1,5	15-23	45	49,5	9,0	10
53113660	50 x 1,5	22-29	54	52,0	10,0	5
53113670	63 x 1,5	28-39	67	61,3	15,0	5

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SKINTOP® MS-IS-M



Benefits

- Short connection thread for more space inside the industrial connectors
- Wide, variable clamping ranges
- Optimum strain relief

Application range

- Specially designed for use on industrial connectors.

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- For suitable multiple seal inserts please see SKINTOP® DIX PG 21 (25 x 1.5) and DIX PG 29 (32 x 1.5)

Technical data

- Caution**
Refer to Appendix T21 for the installation dimensions and torques
- Material**
Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR
- Protection rating**
IP 68 - 5 bar
- Temperature range**
-30 °C to +100 °C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-IS-M						
53112780	25 x 1,5	11-18	30	37,0	5,0	25
53112790	32 x 1,5	16-25	40	43,0	5,0	25

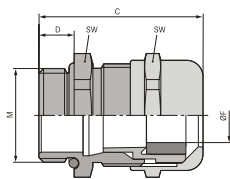
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

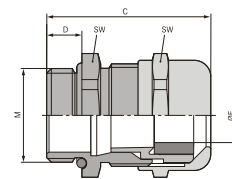
SKINTOP® MS-M ATEX / SKINTOP® MSR-M ATEX



SKINTOP® MS-M ATEX



SKINTOP® MSR-M ATEX



■ **Benefits**

SKINTOP® MS-M ATEX

- Cold impact resistance
- High strain relief
- Wide, variable clamping ranges
- Anti-static
- Maximum reliability

SKINTOP® MSR-M ATEX

- For the benefits, refer to SKINTOP® MS-M ATEX

■ **Application range**

SKINTOP® MS-M ATEX

- Devices, machines and apparatus of enhanced safety protection type "e"
- Equipment group II / Category 2G+1D
- For mobile applications in offshore and marine industries
- Chemical and petrochemical industry

SKINTOP® MSR-M ATEX

- With reducing seal insert, to seal cables with smaller outer diameters.

■ **Product features**

SKINTOP® MS-M ATEX

- SKINTOP® MS-M-XL ATEX is similar to the SKINTOP® MS-M ATEX, but has an extended connection thread for thick walls

■ **Approvals**



SKINTOP® MS-M ATEX

- UL File Nr. E79903

■ **Design**

- Metric connection thread acc. to EN 50262

■ **Note**

SKINTOP® MS-M ATEX

- Refer to SKINTOP® SDV-M ATEX for suitable accessories

SKINTOP® MSR-M ATEX

- Refer to SKINTOP® SDVR-M ATEX for suitable accessories

■ **Technical data**

Caution
Refer to the instruction leaflet for the installation dimensions and torques

Approvals
SKINTOP® MS-M ATEX
IBExU01ATEX1041 X
Ex II 2G Ex e II
Ex II 1D tD A20 IP6X

Material
Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR

Tests
DIN EN 60079-0
DIN EN 60079-7

Protection rating
IP 68 - 10 bar

Temperature range
-30°C to +90°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-M ATEX						
53112700	12 x 1,5	3 - 7	16	26.5	6.5	100
53112710	16 x 1,5	4.5 - 10	20	33.0	7.0	100
53112720	20 x 1,5	7 - 13	24	37.0	8.0	50
53112730	25 x 1,5	9 - 17	29	38.5	8.0	25
53112740	32 x 1,5	11 - 21	36	45.5	9.0	25
53112750	40 x 1,5	19 - 28	45	48.0	9.0	10
53112760	50 x 1,5	26 - 35	54	55.5	10.0	5
53112770	63 x 1,5	34 - 45	67	67.0	15.0	5
53112779	63 x 1,5 plus	44 - 55	75	65.5	15.0	1
SKINTOP® MS-M-XL ATEX						
53112800	12 x 1,5	3 - 7	16	32.8	12.0	100
53112810	16 x 1,5	4.5 - 10	20	37.0	12.0	100
53112820	20 x 1,5	7 - 13	24	39.5	12.0	50
53112830	25 x 1,5	9 - 17	29	41.5	12.0	25
53112840	32 x 1,5	11 - 21	36	48.2	15.0	25
53112850	40 x 1,5	19 - 28	45	53.5	15.0	10
53112860	50 x 1,5	26 - 35	54	57.5	15.0	5
SKINTOP® MSR-M ATEX						
53112705	12 x 1,5	2 - 5	16	26.5	6.5	100
53112715	16 x 1,5	4 - 7	20	33.0	7.0	100
53112725	20 x 1,5	5 - 10	24	37.0	8.0	50
53112735	25 x 1,5	6 - 13	29	38.5	8.0	25
53112745	32 x 1,5	7 - 15	36	45.5	9.0	25
53112755	40 x 1,5	16 - 23	45	48.0	9.0	10
53112765	50 x 1,5	19 - 29	54	55.5	10.0	5
53112775	63 x 1,5	32 - 39	67	67.0	15.0	5

Photographs are not to scale and do not represent detailed images of the respective products.

■ **Accessories**

SKINTOP® MS-M ATEX

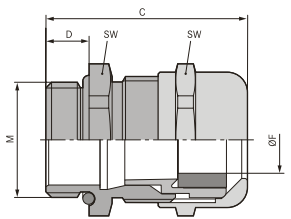
- SKINTOP® SDV-M ATEX refer to page 674

SKINTOP® MSR-M ATEX

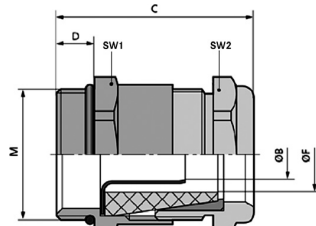
- SKINTOP® SDVR-M ATEX refer to page 674

New

SKINTOP® MS-M ATEX BRUSH



SKINTOP® MS-M ATEX BRUSH



SKINTOP® SHVE-M ATEX



SKINTOP® MS-M ATEX BRUSH

Benefits

- Faster and less complicated assembling than any other system
- Optimum, F8480 low-resistance 360° screen contact
- Simple cable adjustment
- Easy to uninstall
- Anti-static, safe, and impact-resistant at cold temperatures

Application range

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath
- Chemical and petrochemical industry
- Plant engineering
- Equipment group II / Category 2G+1D
- Devices, machines and apparatus of enhanced safety protection type “e”

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- SKINDICHT® SHVE-M 20 x 1.5 ATEX design with EMC earthing sleeve to cover smaller cable clamping ranges

Technical data

Caution
Refer to the instruction leaflet for the installation dimensions and torques

Approvals
DIN VDE for SKINDICHT® SHVE-M ATEX pending

Note
SKINDICHT® SHVE-M ATEX
IBExU08ATEX1161 X
Ex II 2G Ex e II
Ex II 1D Ex tD A20 IP 6X
SKINTOP® MS-M ATEX BRUSH
IBExU01ATEX1041 X
Ex II 2G Ex e II
Ex II 1D tD A20 IP6X

Material
SKINTOP® MS-M ATEX BRUSH
Body: nickel plated brass
Insert: special polyamide
EMV-Brush: brass
Seal: special elastomer
O-Ring: special elastomer
SKINDICHT® SHVE-M ATEX
Body: nickel plated brass
Earthing sleeve: brass
Seal: special elastomer
O-Ring: special elastomer

Tests
DIN EN 60079-0
DIN EN 60079-7

IP Protection rating
IP 68 - 10 bar

Temperature range
SKINTOP® MS-M ATEX BRUSH
-30 °C to +90 °C
SKINDICHT® SHVE-M ATEX
-20 °C to +80 °C

Article number	Article designation / size	Outer Ø (mm), from - to	Minimum Ø above braiding (mm)	SW (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SHVE-M ATEX						
52107102	20 x 1,5	6,9-8,9	5.0	24	6.0	10
SKINTOP® MS-M ATEX BRUSH						
52110023	25 x 1,5	9.0-17.0	6.0	29	8.0	10
52110024	32 x 1,5	11.0-21.0	8.0	36	9.0	1
52110025	40 x 1,5	19.0-28.0	10.0	45	9.0	1
52110026	50 x 1,5	27.0-35.0	14.0	54	10.0	1
52110027	63 x 1,5	34.0-45.0	20.0	67	15.0	1
52110028	63 x 1,5 plus	44.0-55.0	25.0	75	15.0	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SKINTOP® MS-SC-M



Benefits

- Suitable for cables with and without inner sheath
- Also suitable for continuing the cable screen to another connection
- Low-resistance screen contact, optimum EMC protection
- Highly conductive, flexible EMC contact for clamping various screen diameters
- Few operation steps, easy to assemble

Application range

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath
- Telecommunication
- Industrial machinery and plant engineering
- Measurement and control technology
- Automation technology

Approvals



- UL File Nr. E79903

Design

- Metric connection thread acc. to EN 50262

Note

- SKINDICHT® SM-PE-M counter nut should be used to ensure optimum contact with painted, anodised or powder-coated housings
- Refer to SKINTOP® metric accessories for suitable accessories
- As an alternative for thick-walled housings, we recommend SKINTOP® MS-SC-M-XL with long connection thread in the sizes M16 to M50

Technical data

Caution
Refer to Appendix T21 for the installation dimensions and torques

Material
Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR

Protection rating
IP 68 - 10 bar

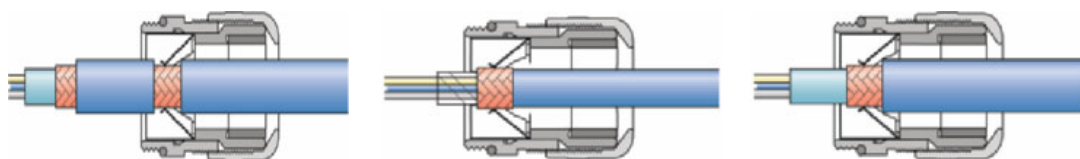
Temperature range
-30°C to +100°C

Article number	Article designation / size	Outer Ø (mm), from - to	Minimum Ø above braiding (mm)	SW (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-SC-M						
53112610	12 x 1,5	3,5-7,0	2,0	16	6,5	50
53112620	16 x 1,5	4,5-9,0	4,0	20	7,0	50
53112630	20 x 1,5	7,0-12,5	5,0	24	8,0	25
53112640	25 x 1,5	9,0-16,5	7,5	29	8,0	25
53112650	32 x 1,5	11,0-21,0	9,0	36	9,0	25
53112660	40 x 1,5	19,0-28,0	15,0	45	9,0	10
53112670	50 x 1,5	27,0-35,0	21,0	54	10,0	5
SKINTOP® MS-SC-M-XL						
53112625	16 x 1,5	4,5-9,0	4,0	20	12,0	50
53112635	20 x 1,5	7,0-12,5	5,0	24	12,0	25
53112645	25 x 1,5	9,0-16,5	7,5	29	12,0	25
53112655	32 x 1,5	11,0-21,0	9,0	36	15,0	25
53112665	40 x 1,5	19,0-28,0	15,0	45	15,0	10
53112675	50 x 1,5	27,0-35,0	21,0	54	15,0	5

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINDICHT® SM-PE-M refer to page 694



ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

SKINTOP® MS-M BRUSH

Benefits

- Faster, easier screen contact
- Optimum, F8480 low-resistance 360° screen contact
- Faster than any other comparable system
- Uncomplicated and reliable
- Maximum assembly freedom during adjustment

Application range

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath
- Automation systems
- High-power drives
- Frequency converters
- Conveyor and transport systems

Approvals

- UL File Nr. E79903

Design

- Metric connection thread acc. to EN 50262

Note

- SKINDICHT® SM-PE-M counter nut should be used to ensure optimum contact with painted, anodised or powder-coated housings



Info

- SKINTOP® MS-M BRUSH sizes 75 x 1.5 to 110 x 2 with innovative double lamella gasket for easier assembling of cables with large diameters.
- Former product name: SKINTOP® MS-SC-M BRUSH

Technical data



Caution
Refer to Appendix T21 for the installation dimensions and torques



Approvals
VDE, UL, CSA, DNV approval for size M90 x 2 and 110 x 2 pending
SKINTOP® MSR-M BRUSH 25 x 1.5 approvals pending



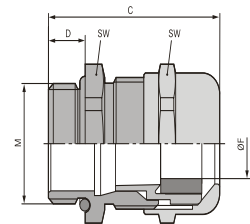
Material
Body: nickel-plated brass
EMC brush: brass
Sealing ring: special elastomer
O-ring: special elastomer



Protection rating
IP 68
IP 69 K (M25x1,5 - M63x1,5)



Temperature range
Dynamic: -30 °C to +100 °C
Fixed: -40 °C to +100 °C

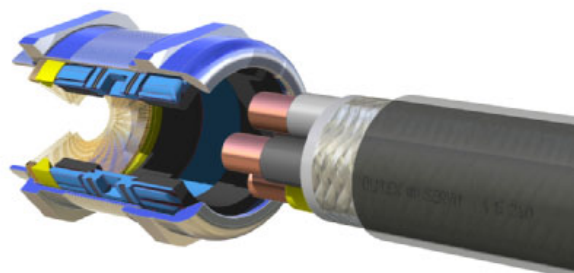


Article number	Article designation / size	Outer Ø (mm), from - to	Minimum Ø above braiding (mm)	SW (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MSR-M BRUSH						
53112671	25 x 1,5	6,0-13,0	5,0	29	8,0	10
SKINTOP® MS-M BRUSH						
53112676	25 x 1,5	9,0-17,0	6,0	29	8,0	10
53112677	32 x 1,5	11,0-21,0	8,0	36	9,0	1
53112678	40 x 1,5	19,0-28,0	10,0	45	9,0	1
53112679	50 x 1,5	27,0-35,0	14,0	54	10,0	1
53112680	63 x 1,5	34,0-45,0	20,0	67	15,0	1
53112681	63 x 1,5 plus	44,0-55,0	25,0	75	15,0	1
53112501	75 x 1,5	53,0-63,0	35,0	95	15,0	1
53112500	75 x 1,5 plus	58,0-68,0	35,0	95	15,0	1
53112503	90 x 2	66,0-78,0	45,0	115	20,0	1
53112505	110 x 2	76,0-88,0	55,0	135	25,0	1
53112504	110 x 2 plus	86,0-98,0	55,0	135	25,0	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINDICHT® SM-PE-M refer to page 694



SKINTOP® GMP-GL-M



SKINTOP® GMP-GL-M

■ **Benefits**

- Glass fibre-reinforced for maximum mechanical stability
- Supporting surface for spanner means scratches on the housing are avoided

■ **Application range**

- For locking SKINTOP® cable glands in bore-holes without thread.

■ **Approvals**



- UL File Nr. E79903

■ **Design**

- Metric connection thread acc. to EN 50262

■ **Note**

- UL approval only when used with the UL-approved SKINTOP® polyamide cable glands
- Designed for use with metric SKINTOP® plastic cable glands

■ **Technical data**

- Upon request**
Available without collar (without surface for assembling tool)
- Colour delivered**
Silver grey (RAL 7001)
Light grey (RAL 7035)
Black (RAL 9005), UV-resistant
- Material**
Polyamide, glass fibre-reinforced
- Temperature range**
Fixed: -40°C to +100°C
Dynamic: -20°C to +100°C

Article number	Article designation / size	SW (mm)	Pieces / PU
SKINTOP® GMP-GL-M silver grey			
53119000	12 x 1,5	17	100
53119010	16 x 1,5	22	100
53119020	20 x 1,5	27	100
53119030	25 x 1,5	34	100
53119040	32 x 1,5	41	100
53119050	40 x 1,5	50	25
53119060	50 x 1,5	60	25
53119070	63 x 1,5	75	25
SKINTOP® GMP-GL-M black			
53119100	12 x 1,5	17	100
53119110	16 x 1,5	22	100
53119120	20 x 1,5	27	100
53119130	25 x 1,5	34	100
53119140	32 x 1,5	41	100
53119150	40 x 1,5	50	25
53119160	50 x 1,5	60	25
53119170	63 x 1,5	75	25
SKINTOP® GMP-GL-M light grey			
53119003	12 x 1,5	17	100
53119013	16 x 1,5	22	100
53119023	20 x 1,5	27	100
53119033	25 x 1,5	34	100
53119043	32 x 1,5	41	100
53119053	40 x 1,5	50	25
53119063	50 x 1,5	60	25
53119073	63 x 1,5	75	25

Photographs are not to scale and do not represent detailed images of the respective products.

SKINTOP® GMP-HF-M



Benefits

- Halogen-free
- Extremely flame-retardant according to UL 94V-0
- Self-extinguishing, no dripping

Application range

- For locking SKINTOP® cable glands in bore-holes without thread.
- Airports
- Tunnel construction
- Underground railways
- Public buildings

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- Designed for use with SKINTOP® ST-HF-M

Technical data

- RAL Colour delivered**
Light grey (RAL 7035)
- Material**
Polyamide UL 94V-0 - halogen-free
- Temperature range**
-20°C to +100°C

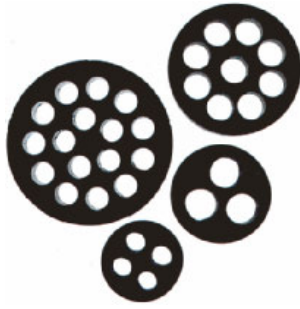
Article number	Article designation / size	SW (mm)	PU
SKINTOP® GMP-HF-M			
53119200	12 x 1,5	17	100
53119210	16 x 1,5	22	100
53119220	20 x 1,5	27	100
53119230	25 x 1,5	34	100
53119240	32 x 1,5	41	100
53119250	40 x 1,5	50	25
53119260	50 x 1,5	60	25
53119270	63 x 1,5	75	25

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® ST-HF-M refer to page 656

SKINTOP® DIX-M



Benefits

- Easy insertion of several cables into one gland
- Higher packing density allows smaller part construction

Application range

- For use in SKINTOP® cable glands.
- A sealing ring with several holes is used in place of the inner sealing insert.

Approvals



Note

- IP 68 can be achieved when all openings are closed and all bores are optimally occupied, i.e. when using cables with nominal diameter and/or SKINTOP® DIX-DV sealing plugs

Design

- SKINTOP® DIX-M VITON® is resistant to oil, water, alkaline solutions, acids, solvents etc.

Technical data

	Upon request Special shapes
	Colour delivered Black (RAL 9005)
	Material NBR VITON®
	Protection rating IP 54
	Temperature range -40°C to +100°C

Article number	Article designation / size	Size M	Number of cables x cable Ø	Pieces / PU
SKINTOP® DIX-M				
53316220	16,220	M 16	2 x 2.0	100
53316230	16,230	M 16	2 x 3.0	100
53316240	16,240	M 16	2 x 4.0	100
53320250	20,250	M 20	2 x 5.0	100
53320260	20,260	M 20	2 x 6.0	100
53320340	20,340	M 20	3 x 4.0	100
53320353	20,353	M 20	3 x 5.3	100
53320440	20,440	M 20	4 x 4.0	100
53320920	20,920	M 20	9 x 2.0	100
53320430	20,430	M 20	4 x 3.0	100
53325260	25,260	M 25	2 x 6.0	50
53325350	25,350	M 25	3 x 5.0	50
53325360	25,360	M 25	3 x 6.0	50
53325370	25,370	M 25	3 x 7.0	50
53325450	25,450	M 25	4 x 5.0	50
53325540	25,540	M 25	5 x 4.0	50
53325640	25,640	M 25	6 x 4.0	50
53332270	32,270	M 32	2 x 7.0	50
53332280	32,280	M 32	2 x 8.0	50
53332290	32,290	M 32	2 x 9.0	50
53332370	32,370	M 32	3 x 7.0	50
53332380	32,380	M 32	3 x 8.0	50
53332460	32,460	M 32	4 x 6.0	50
53332470	32,470	M 32	4 x 7.0	50
53332560	32,560	M 32	5 x 6.0	50
53332650	32,650	M 32	6 x 5.0	50
53332840	32,840	M 32	8 x 4.0	50
53332850	32,850	M 32	8 x 5.0	50
53332940	32,940	M 32	9 x 4.0	50
53340290	40,290	M 40	2 x 9.0	25
53340310	40,310	M 40	3 x 10.0	25
53340480	40,480	M 40	4 x 8.0	25
53340490	40,490	M 40	4 x 9.0	25
53340580	40,580	M 40	5 x 8.0	25
53340590	40,590	M 40	5 x 9.0	25
53340670	40,670	M 40	6 x 7.0	25
53340860	40,860	M 40	8 x 6.0	25
53340969	40,969	M 40	9 x 6.9	25
53350118	50,118	M 50	11 x 8.0	10
53350680	50,680	M 50	6 x 8.0	10
53350780	50,780	M 50	7 x 8.0	10
53350870	50,870	M 50	8 x 7.0	10
53350147	50,147	M 50	14 x 7.0	10
53350164	50,164	M 50	16 x 4.0	10
53350166	50,166	M 50	16 x 6.0	10
SKINTOP® DIX-M VITON®				
53420250	20,250	M 20	2 x 5.0	100
53420260	20,260	M 20	2 x 6.0	100
53440969	40,969	M 40	9 x 6.9	25

Photographs are not to scale and do not represent detailed images of the respective products.

Viton® is a registered trademark of DuPont de Nemours

Accessories

- SKINTOP® CLICK refer to page 654
- SKINTOP® ST-M refer to page 652
- SKINTOP® DIX-DV refer to page 675

New

SKINTOP® DIX-M AUTOMATION



SKINTOP® DIX-M AUTOMATION

Benefits

- Optimal seal when using AS-I bus cables
- Easy insertion of pre-assembled cables (with fieldbus or RJ-45 connector)
- Strain relief

Application range

- These seals can be used instead of our standard seals in the SKINTOP® cable glands.
- Control cabinets
- Control panels
- Office applications
- Automation technology

Approvals



Note

- IP 68 can be achieved if the hole is optimally occupied, i.e. when using standard AS-I bus cables

Design

- Precise cut for AS-I bus cables
- Seal with hole and cut for easy insertion of pre-assembled RJ45 network cables
- Seal with hole and cut for easy insertion of pre-assembled field bus cables
- Multiple seal inserts with holes and slits for easy insertion of pre-assembled cables

Technical data

RAL Colour delivered
Black (RAL 9005)

Material
NBR

IP Protection rating
IP 54

Temperature range
-40°C to +100°C

Article number	Article designation / size	Number of cables x cable Ø	Pieces / PU
SKINTOP® DIX-M ASI			
53611001	M 20	1 x AS-I	50
SKINTOP® DIX-M ASI DUO			
53611004	M 25	2 x AS-I	50
SKINTOP® DIX-M RJ-45			
53440980	M 25	1 x 5.4	50
SKINTOP® DIX-M FIELDBUS			
53440970	M 32	1 x 6.5	50
SKINTOP® DIX-M CUT			
53310444	M 40	3 x 10.0	25

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® CLICK refer to page 654
- SKINTOP® MS-M refer to page 662
- SKINTOP® ST-M refer to page 652

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SKINTOP® SDV-M ATEX / SKINTOP® SDVR-M ATEX



SKINTOP® SDV-M ATEX

■ Benefits

SKINTOP® SDV-M ATEX

- Permanent and secure sealing for areas with risks of explosion
- Easy to assemble
- High degree of protection

SKINTOP® SDVR-M ATEX

- For the benefits, refer to SKINTOP® SDV-M ATEX

■ Application range

SKINTOP® SDV-M ATEX

- SKINTOP® SDV-M is used together with SKINTOP® MS-M ATEX, MS-M ATEX BRUSH or SKINTOP® K-M ATEX plus (blue).
- Equipment group II / Category 2G+1D

SKINTOP® SDVR-M ATEX

- SKINTOP® SDVR-M is used together with SKINTOP® MSR-M ATEX or SKINTOP® KR-M ATEX plus (blue).
- Equipment group II / Category 2G+1D

■ Approvals



■ Note

SKINTOP® SDV-M ATEX

- Outside areas with a risk of explosion, also suitable for use in combination with SKINTOP® ST-M and SKINTOP® MS-M

SKINTOP® SDVR-M ATEX

- Outside areas with a risk of explosion, also suitable for use in combination with SKINTOP® STR-M and SKINTOP® MSR-M

■ Technical data

⚠ Caution
Refer to the instruction leaflet for the installation dimensions and torques

🔗 Material
CR

IP Protection rating
SKINTOP® SDV-M ATEX
IP 68 - sizes M12, M16, M20, M25, M32
IP 66 - sizes M40, M50, M63
SKINTOP® SDVR-M ATEX
IP 68

🌡 Temperature range
-30°C to +70°C
Short-term: up to +90°C

Article number	Article designation / size	Visible height (mm)	Pieces / PU
SKINTOP® SDV-M ATEX			
54113002	12 ATEX	SDV-M ATEX 3	50
54113012	16 ATEX	SDV-M ATEX 3	50
54113022	20 ATEX	SDV-M ATEX 3	50
54113032	25 ATEX	SDV-M ATEX 3	50
54113042	32 ATEX	SDV-M ATEX 4	25
54113052	40 ATEX	SDV-M ATEX 4	25
54113062	50 ATEX	SDV-M ATEX 4	10
54113072	63 ATEX	SDV-M ATEX 4	5
SKINTOP® SDVR-M ATEX			
54113013	16 ATEX	SDVR-MATEX 4	50
54113023	20 ATEX	SDVR-MATEX 5	50
54113033	25 ATEX	SDVR-MATEX 5	50
54113043	32 ATEX	SDVR-MATEX 5	25

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SKINTOP® DIX-DV / SKINTOP® SD-M / SKINTOP® DV-M



Benefits

SKINTOP® DIX-DV

- Prevents water and dust penetrating into unused bore holes of SKINTOP® DIX-M multiple sealing inserts

SKINTOP® SD-M

- Prevents dust and dirt from getting into the housing

SKINTOP® DV-M

- Prevents humidity from seeping into the housing

Application range

SKINTOP® DIX-DV

- For inserting into unoccupied holes of the SKINTOP® DIX-M multiple sealing inserts, to ensure protection class.

SKINTOP® SD-M

- This dust protector can be placed under the cap nut of the SKINTOP® cable glands.
- Preparations
- Protection of unused connection points

SKINTOP® DV-M

- These seals are placed into the sealing ring of the SKINTOP® cable glands.
- Preparations
- Protection of unused connection points

Approvals



Note

SKINTOP® DIX-DV

- When assembled professionally and properly, the protection class of IP 68 can be reached
- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

SKINTOP® SD-M

- Easy to handle, without disassembly - push cable through
- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

SKINTOP® DV-M

- When assembled professionally and properly, the protection class of IP 68 can be reached
- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

Technical data

RAL Colour delivered
SKINTOP® DIX-DV natural
SKINTOP® SD-M Black
SKINTOP® DV-M Black

Material
SKINTOP® DIX-DV Polyamide
SKINTOP® SD-M PE foam
SKINTOP® DV-M CR

Article number	Article designation / size	ØF mm	Height (mm)	Pieces / PU
SKINTOP® DIX-DV				
53100003	DIX-DV 3 x 9	3.0	9	100
53100004	DIX-DV 4 x 9	4.0	9	100
53100005	DIX-DV 5 x 11	5.0	11	100
53100055	DIX-DV 5,5 x 11	5.5	11	100
53100006	DIX-DV 6 x 14	6.0	14	100
53100007	DIX-DV 7 x 14	7.0	14	100
53100008	DIX-DV 8 x 14	8.0	14	100
53100009	DIX-DV 9 x 14	9.0	14	100
SKINTOP® SD-M				
54113100	12	11.5	2	100
54113110	16	15.0	2	100
54113120	20	20.0	2	100
54113130	25	25.0	2	50
54113140	32	30.0	2	50
54113150	40	40.0	2	25
54113160	50	49.0	2	25
54113170	63	58.0	2	25
SKINTOP® DV-M				
54113000	12	7.2	7	500
54113010	16	10.0	8	500
54113020	20	13.2	8.4	250
54113030	25	17.2	9.5	250
54113040	32	21.2	12	250
54113050	40	28.2	14.5	100
54113060	50	35.8	18	100
54113070	63	45.6	20	50

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

SKINTOP® DIX-DV

- SKINTOP® DIX-M refer to page 672
- SKINTOP® CLICK refer to page 654
- SKINTOP® MS-M refer to page 662
- SKINTOP® ST-M refer to page 652

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

New

SKINTOP® CUBE



SKINTOP® CUBE



SKINTOP® CUBE FRAME



SKINTOP® CUBE MODULE



Info

- Innovative multi-cable bushing system with variable clamping ranges for high flexibility in assembling.
- When disassembling, the frame can remain on the housing and the plug-in module remains securely on the cable.

Benefits

- Variable range of clamping force
- Vibration-safe module fixation
- Strain relief
- Oil resistance
- Simplified servicing due to easy assembling and disassembling

Application range

- For installation of harnessed cables
- Used in areas where cables and wires need to be safely inserted into housings
- Apparatus and switch cabinet construction
- Electronic installations
- Automation technology

Approvals



Design

- The SKINTOP® CUBE system consists of the SKINTOP® CUBE FRAME and the clip modules SKINTOP® CUBE MODULE.
- For cut-outs for industrial connectors with standard defined boreholes.
- For cut-outs for 16-pin industrial connectors (36 x 86 mm)
- For cut-outs for 24-pin industrial connectors (36 x 112 mm)

Note

- SKINTOP® CUBE MODULE 20x20 BLIND can be used as a blind module and for clamping ranges 1 - 3 mm

Included

- SKINTOP® CUBE FRAME including mounting material

Suitable tools

- Kraftform Kompakt® 10

Technical data



Approvals
UL pending



Material
Frame: glass fibre-reinforced polyamide
Frame seal: CR
Clip module: special polypropylene
Clip module seal: LSE 2



Protection rating
IP 64
NEMA 12



Temperature range
-20°C to +80°C

Article number	Article designation / size	Clamping range ØF (mm)	Max. number of executions	Pieces / PU
SKINTOP® CUBE Frame				
52220000	SKINTOP® CUBE FRAME 16		8	1
52220001	SKINTOP® CUBE FRAME 24		10	1
SKINTOP® CUBE clip modules				
52220004	SKINTOP® CUBE MODULE 20x20 BLIND	1 - 3		5
52220002	SKINTOP® CUBE MODULE 20x20 SMALL	4 - 6		5
52220003	SKINTOP® CUBE MODULE 20x20 LARGE	6 - 9		5
52220040	SKINTOP® CUBE MODULE 20x20 AS-I BUS	AS-I BUS Cable		5
52220005	SKINTOP® CUBE MODULE 40x40 SMALL	9 - 12		5
52220006	SKINTOP® CUBE MODULE 40x40 LARGE	12 - 16		5
52220007	SKINTOP® CUBE MODULE 40x40 BLIND			5

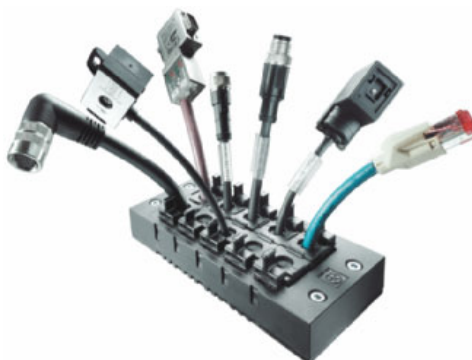
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SKINDICHT® CABLEFIX cable bushing system

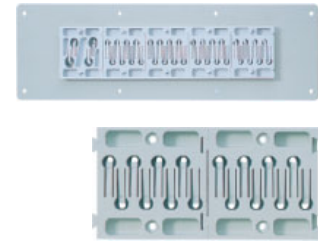
Accessories

- FLEXIMARK® LB-10 W



ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Cablefix



Benefits

- Time-saving assembly
- High packing density
- Strain relief closes automatically when the cable is pushed through
- Each individual cable can be easily detached and replaced with the use of a spring clamp during repairs, maintenance or upgrades

Technical data

- Material**
 Flange: PA 6.6
 Seal: SBR/NBR 45
- Protection rating**
 IP 55

Application range

- Housing opening for connecting sensor/actuator cables and bus cables.

Approvals



Note

- Cable installation is only possible without pre-assembled connectors

Included

- Included: blind plugs, for use on unused sockets

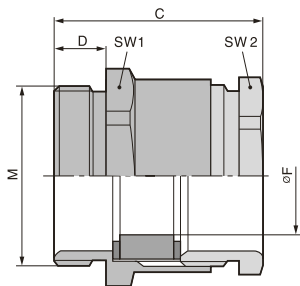
Article number	Article designation / size	Number of cables x cable Ø	Cut-out W x H	Dimensions: L x W x H (mm)	Pieces / PU
Sensor/actuator flange (S/A)					
62130000	1 x S/A	8 x 3,8 - 6,3	46.0 x 46.0	50 x 50 x 10	5
62130010	2 x S/A	16 x 3,8 - 6,3	96.0 x 46.0	50 x 50 x 10	10
Bus/Vcc flange (B/V) + sensor/actuator flange (S/A)					
62130070	1 x B/V	2 x 6,1 - 8,8 + 2 x 7,8 - 10,7	46.0 x 46.0	50 x 50 x 10	5
62130080	1 x B/V + 1 x S/A	2 x 6,1 - 8,8 + 2 x 7,8 - 10,7 + 8 x 3,8 - 6,3	96.0 x 46.0	50 x 50 x 10	10

Photographs are not to scale and do not represent detailed images of the respective products.

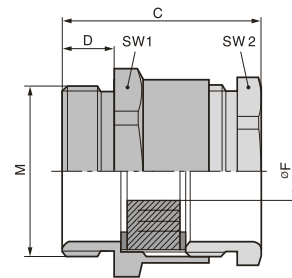
SKINDICHT® SVRN-M / SKINDICHT® SVRE-M



SKINDICHT® SVRN-M



SKINDICHT® SVRE-M



Benefits

SKINDICHT® SVRN-M

- High mechanical stability
- Optimum strain relief

SKINDICHT® SVRE-M

- With incised sealing ring for adjustment to several cable diameters
- Fewer sizes need to be kept in stock

Application range

SKINDICHT® SVRN-M

- Brass cable gland with hexagonal fitting, for fast assembly with a flat spanner.

SKINDICHT® SVRE-M

- Brass cable gland with hexagonal fitting and variable incised sealing ring.

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

SKINDICHT® SVRN-M

- Counter nut to be used: SKINDICHT® SM-M
- Example order identification: SVRN-M 12 / 7 / 5
12 = Connection thread metric
7 = Function thread PG
5 = Clear width F

SKINDICHT® SVRE-M

- Refer to SKINDICHT® EV for additional accessories
- Counter nut to be used: SKINDICHT® SM-M
- Example description: SVRE-M 12/7/5
12 = metric connection thread
7 = PG function thread
5 = clear opening of F

Design

SKINDICHT® SVRN-M

- For connection thread M 50 x 1.5 and M 63 x 1.5, refer to SKINDICHT® SVRE-M

Technical data



Caution
The installation dimensions can be found in appendix T21



Upon request
SKINDICHT® SVRN-M
Available with long connection thread
SKINDICHT® SVRE-M
Available with long connection thread
Available with VITON® incised ring



Material
SKINDICHT® SVRN-M
Body: nickel-plated brass
Sealing ring: CR/NBR
SKINDICHT® SVRE-M
Body: nickel-plated brass
Incised seal: CR/NBR



Protection rating
IP 54



Temperature range
SKINDICHT® SVRN-M
-20°C to +100°C
SKINDICHT® SVRE-M
-20°C to +80°C

Article number	Article designation / size	Incised sealing ring ØF (mm)	Max. internal Ø (mm)	Function thread PG	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Clear opening F (mm)	Pieces / PU
SKINDICHT® SVRN-M									
52104800	12 x 1,5	-	-	7	14 / 13	20,6	5,0	5	100
52104810	12 x 1,5	-	-	7	14 / 13	20,6	5,0	6	100
52104820	12 x 1,5	-	-	7	14 / 13	20,6	5,0	7	100
52104830	16 x 1,5	-	-	9	18 / 15	21,6	5,0	7	100
52104840	16 x 1,5	-	-	9	18 / 15	21,6	5,0	8	100
52104850	16 x 1,5	-	-	9	18 / 15	21,6	5,0	9	100
52104860	20 x 1,5	-	-	11	22 / 18	23,6	6,0	10	50
52104870	20 x 1,5	-	-	11	22 / 18	23,6	6,0	11	50
52104880	20 x 1,5	-	-	13,5	22 / 20	25,6	6,0	11	50
52104890	20 x 1,5	-	-	13,5	22 / 20	25,6	6,0	12	50
52104900	20 x 1,5	-	-	16	24 / 22	26,6	6,0	13	50
52104910	20 x 1,5	-	-	16	24 / 22	26,6	6,0	14	50
52104920	25 x 1,5	-	-	21	30 / 28	29,6	7,0	18	50
52104930	32 x 1,5	-	-	29	40 / 37	32,6	8,0	27	50
52104940	40 x 1,5	-	-	36	50 / 47	37,6	8,0	34	20
SKINDICHT® SVRE-M									
52104980	16 x 1,5	5/8	12,0	9	18 / 15	21,6	5,0	-	100
52104990	20 x 1,5	7/10/12,5	15,0	11	22 / 18	22,6	6,0	-	50
52105000	20 x 1,5	7/10,5/13/16	15,0	13,5	22 / 20	25,6	6,0	-	50
52105010	20 x 1,5	8/10,5/13,5/16	15,0	16	24 / 22	26,6	6,0	-	50
52105002	25 x 1,5	11/15/18/20	20,0	21	30 / 28	29,6	7,0	-	50
52105003	32 x 1,5	19/23/27/31	27,0	29	40 / 37	32,6	8,0	-	50
52105004	40 x 1,5	25/28/31/35	34,0	36	50 / 47	37,6	8,0	-	20
52105005	50 x 1,5	35,5/39/42,5/46	44,0	42	57 / 54	42,6	9,0	-	5
52105006	63 x 1,5	40,5/44/47/50,5	54,0	48	66 / 60	45,1	10,0	-	5

Photographs are not to scale and do not represent detailed images of the respective products.
Viton® is a registered trademark of DuPont de Nemours

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SKINDICHT® SVRX



SKINDICHT® SVRX-W



SKINDICHT® SVRX-Z

Benefits

- EMC version for cables with large cross-sections
- SKINDICHT® SVRX 105 x 2 for cable diameters up to 83 mm

Application range

- The cable gland is in accordance with DIN 89280, with round intermediate supports made from brass, plain.
- Shipbuilding
- Off-Shore
- High-power drives
- Wind power plants

Approvals



Note

- EMC counter nuts (with claw) SKINDICHT® SM-PE / SVRX M24-M56 for painted, anodised or powder-coated housing on request
- For more EMC cable glands, refer to SKINTOP® MS-SC-M and MS-M BRUSH, and compatible counter nut SKINDICHT® SM-PE-M

Design

- Type “W” for cable without screen (figure 1)
- Type “Z” for cables with screen (figure 2)

Technical data

DIN VDE Approvals
DIN 89280

Material
Body: Blank brass
Seal: EPDM

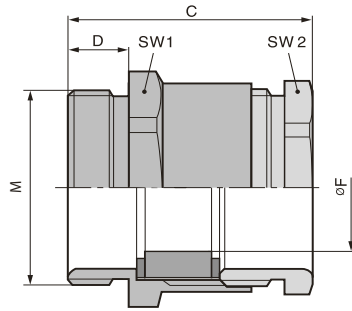
IP Protection rating
IP 56

Temperature range
-20°C to +80°C

Article number	Article designation / size	Thread	SW (mm)	Clear opening F (mm)	Pieces / PU
SKINDICHT® SVRX - version W					
52006460	SVRX 5635	M 56 x 2	55	32 - 35	1
52006470	SVRX 5638	M 56 x 2	55	35 - 38	1
52006480	SVRX 5641	M 56 x 2	55	38 - 41	1
52006490	SVRX 7244	M 72 x 2	70	41 - 44	1
52006500	SVRX 7248	M 72 x 2	70	44 - 48	1
52006510	SVRX 7252	M 72 x 2	70	48 - 52	1
52006520	SVRX 7256	M 72 x 2	70	52 - 56	1
52006530	SVRX 8066	M 80 x 2	85	62 - 66	1
52006540	SVRX 10573	M 105 x 2	104	68 - 73	1
52006550	SVRX 10572	M 105 x 2	104	78 - 83	1
52006564	SVRX 8059	M 80 x 2	85	56 - 59	1
SKINDICHT® SVRX - version Z					
52006345	SVRX 2412	M 24 x 1.5	24	10 - 12	1
52006355	SVRX 2414	M 24 x 1.5	24	12 - 14	1
52006365	SVRX 2416	M 24 x 1.5	24	14 - 16	1
52006375	SVRX 2417	M 24 x 1.5	24	16 - 17	1
52006425	SVRX 3626	M 36 x 2	36	24 - 26	1
52006465	SVRX 5635	M 56 x 2	55	32 - 35	1
52006475	SVRX 5638	M 56 x 2	55	35 - 38	1
52006485	SVRX 5641	M 56 x 2	55	38 - 41	1
52006495	SVRX 7244	M 72 x 2	70	41 - 44	1
52006505	SVRX 7248	M 72 x 2	70	44 - 48	1
52006515	SVRX 7252	M 72 x 2	70	48 - 52	1
52006565	SVRX 8059	M 80 x 2	85	56 - 59	1
52006535	SVRX 8066	M 80 x 2	85	62 - 66	1
52006545	SVRX 10573	M 105 x 2	104	68 - 73	1
SKINDICHT® SM/SVRX					
52006321	SM 24	M24	30		1
52006401	SM 36	M36	41		1
52006461	SM 56	M56	65		1
52006491	SM 72	M72	85		1
52006531	SM 80	M80	90		1
52006541	SM 105	M105	120		1

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SVFK-M



SKINDICHT® SVFK-M

■ **Benefits**

- Economical type
- Lateral sealing lips fit automatically around various cable dimensions
- Cable-specific seal dimensions are no longer necessary
- Tolerance
- Large opening allows clamping of up to two flat cables

■ **Application range**

- For inserting flat cables.
- Conveyor systems
- Pumps
- Lifts
- Control cabinet manufacturing

■ **Approvals**



■ **Design**

- Metric connection thread acc. to EN 50262

■ **Note**

- Counter nut to be used: SKINTOP® GMP-GL-M
- For suitable flat cables, refer to ÖLFLEX® LIFT F for indoor applications or ÖLFLEX® CRANE F for outdoor applications

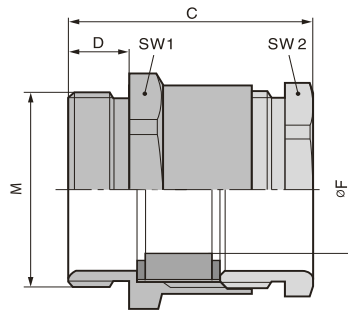
■ **Technical data**

- Caution**
The installation dimensions can be found in appendix T21
- Material**
Body: Polyamide
Special sealing insert: CR
- Temperature range**
-30°C to +80°C

Article number	Article designation / size	Min./max. flat cable width	Min./max. cable thickness (mm)	SW 1/SW 2 mm	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SVFK-M							
52107900	SVFK-M 25 x 1,5	- / 15.0	-- 5.0	27 / 23	41.0	11.0	25
52107901	SVFK-M 32 x 1,5	10.0 / 21.0	3.0 - 8.0	36 / 30	39.0	10.0	25
52107902	SVFK-M 40 x 1,5	16.0 / 28.0	4.0 - 11.5	42 / 40	44.0	11.0	25
52107903	SVFK-M 50 x 1,5	26.0 / 35.0	4.0 - 11.5	53 / 50	50.5	11.0	5
52107904	SVFK-M 50 x 1,5	30.0 / 40.0	5.0 - 15.0	60 / 55	53.5	11.0	5
52107905	SVFK-M 63 x 1,5	36.0 / 45.0	5.0 - 15.0	65 / 60	54.5	11.0	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SVF-M



SKINDICHT® SVF-M

Benefits

- Lateral sealing lips fit automatically around various cable dimensions
- Cable-specific seal dimensions are no longer necessary
- Large opening allows clamping of up to two flat cables
- Optimum strain relief
- Tolerance

Application range

- For inserting flat cables.
- Control cabinet manufacturing
- Conveyor systems
- Pumps
- Lifts

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- For suitable flat cables, refer to ÖLFLEX® LIFT F for indoor applications or ÖLFLEX® CRANE F for outdoor applications
- Counter nut to be used: SKINDICHT® SM-M

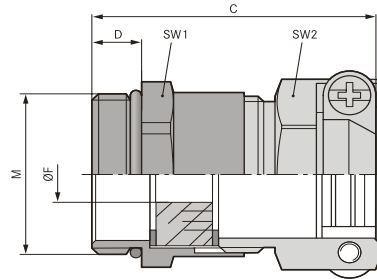
Technical data

- Caution**
The installation dimensions can be found in appendix T21
- Material**
Body: nickel-plated brass
Seal: CR
- Temperature range**
-30°C to +100°C

Article number	Article designation / size	Min./max. flat cable width	Min./max. cable thickness (mm)	Pieces / PU
SKINDICHT® SVF-M				
52107320	M 20/16	- / 15.0	- / 5	25
52107340	M 25/21	9.0 / 20.0	3 / 8	25
52107350	M 32/29	14.0 / 27.0	4 / 11	10
52107360	M 40/36	24.0 / 34.0	4 / 11	10
52107370	M 50/42	29.0 / 44.0	5 / 12	5
52107380	M 63/48	34.0 / 50.0	5 / 12	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SKZ-M



SKINDICHT® SKZ-M

■ **Benefits**

- With incised sealing ring for adjustment to several cable diameters
- High strain relief
- High mechanical stability

■ **Application range**

- Saddle clamp strain relief gland for harsh application conditions.
- Building sites
- Plant engineering
- Electric motor manufacturing

■ **Approvals**



■ **Design**

- Metric connection thread acc. to EN 50262

■ **Note**

- SKINDICHT® SHZ-M-XL is similar to the SKINDICHT® SHZ-M, but has an extended connection thread for thick walls
- Counter nut to be used: SKINDICHT® SM-M
- Example description:
SKZ-M 16/9
16 = connection thread
9 = PG function thread

■ **Technical data**

- Caution**
The installation dimensions can be found in appendix T21
- Material**
Body: nickel-plated brass
Incised sealing ring: CR/NBR
O-ring: NBR
- Protection rating**
IP 55
- Temperature range**
-20°C to +80°C

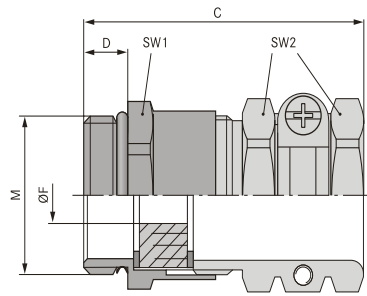
Article number	Article designation / size	ØF mm	Max. fitting size for installation (mm)	Function thread PG	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SKZ-M								
52106800	16 x 1,5	5.0 - 8.0	24	9	18 / 17	29.0	5.0	50
52106810	20 x 1,5	7.0 - 12.0	27	11	22 / 20	30.0	6.0	50
52106820	20 x 1,5	11.0 - 13.0	30	13.5	22 / 22	33.5	6.0	25
52106830	20 x 1,5	13.0 - 15.0	33	16	24 / 24	34.5	6.0	25
52106840	25 x 1,5	16.0 - 19.3	42	21	30 / 30	41.0	7.0	25
52106850	32 x 1,5	19.0 - 27.0	58	29	40 / 41	46.0	8.0	10
SKINDICHT® SKZ-M-XL								
52106805	16 x 1,5	5.0 - 8.0	24	9	18 / 17	34.0	10.0	50
52106815	20 x 1,5	7.0 - 12.0	27	11	22 / 20	34.0	10.0	50
52106825	20 x 1,5	11.0 - 13.0	30	13.5	22 / 22	37.5	10.0	25
52106835	20 x 1,5	13.0 - 15.0	33	16	24 / 24	38.5	10.0	25
52106845	25 x 1,5	16.0 - 19.3	42	21	30 / 30	45.0	11.0	25
52106855	32 x 1,5	19.0 - 27.0	58	29	40 / 41	51.0	13.0	10

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

■ **Accessories**

- SKINDICHT® E refer to page 750
- SKINDICHT® EV refer to page 751

SKINDICHT® SHZ-M



SKINDICHT® SHZ-M

Benefits

- With incised sealing ring for adjustment to several cable diameters
- High strain relief
- Robust
- For cables with large outer diameters

Application range

- Compact brass cable gland for reliable strain relief, solid, for large cable diameters.

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- SKINDICHT® SHZ-M-XL is similar to the SKINDICHT® SHZ-M, but has an extended connection thread for thick walls
- Counter nut to be used: SKINDICHT® SM-M
- Example description:
SHZ-M 16/9
16 = metric connection thread
9 = PG function thread

Technical data

- Caution**
The installation dimensions can be found in appendix T21
- Material**
Body: nickel-plated brass
Sealing ring: CR/NBR
O-ring: NBR
- Protection rating**
IP 55
- Temperature range**
-20 °C to +80 °C

Article number	Article designation / size	ØF mm	Max. fitting size for installation (mm)	Function thread PG	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SHZ-M								
52106700	12 x 1,5	5.5 - 6.5	21	7	14 / 15	30.0	5.0	50
52106710	16 x 1,5	5.0 - 8.0	25	9	18 / 17	33.0	5.0	50
52106720	20 x 1,5	8.0 - 12.0	28	11	22 / 20	35.0	6.0	25
52106730	20 x 1,5	8.5 - 13.0	32	13.5	22 / 22	39.5	6.0	25
52106740	20 x 1,5	8.0 - 15.0	35	16	24 / 24	41.5	6.0	25
52106750	25 x 1,5	14.0 - 19.3	46	21	30 / 30	47.0	7.0	25
52106760	32 x 1,5	19.0 - 27.0	58	29	40 / 41	53.0	8.0	10
52106770	40 x 1,5	27.0 - 34.0	70	36	50 / 50	60.0	8.0	10
52106780	50 x 1,5	35.0 - 43.0	78	42	57 / 57	65.0	9.0	5
52106790	63 x 1,5	40.0 - 47.5	86	48	66 / 64	68.0	10.0	5
SKINDICHT® SHZ-M-XL								
52106705	12 x 1,5	5.5 - 6.5	21	7	14 / 15	35.0	10.0	50
52106715	16 x 1,5	5.0 - 8.0	25	9	18 / 17	38.0	10.0	50
52106725	20 x 1,5	8.0 - 12.0	28	11	22 / 20	39.0	10.0	25
52106735	20 x 1,5	8.5 - 13.0	32	13.5	22 / 22	43.5	10.0	25
52106745	20 x 1,5	8.0 - 15.0	35	16	24 / 24	45.5	10.0	25
52106755	25 x 1,5	14.0 - 19.3	46	21	30 / 30	51.0	11.0	25
52106765	32 x 1,5	19.0 - 27.0	58	29	40 / 41	58.0	13.0	10
52106775	40 x 1,5	27.0 - 34.0	70	36	50 / 50	67.0	13.0	10
52106785	50 x 1,5	35.0 - 43.0	78	42	57 / 57	70.0	14.0	5
52106795	63 x 1,5	40.0 - 47.5	86	48	66 / 64	73.0	14.0	5

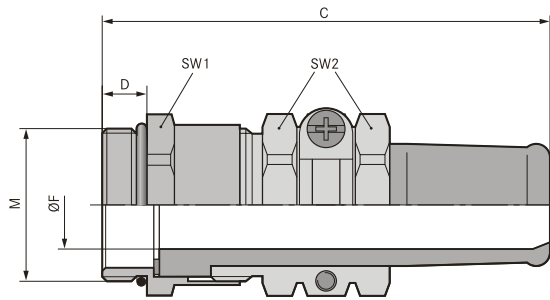
Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINDICHT® E refer to page 750
- SKINDICHT® EV refer to page 751

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SKINDICHT® SR-M



SKINDICHT® SR-M

■ **Benefits**

- Reliable bending and anti-kink protection
- High strain relief
- Robust
- For cables with large outer diameters
- High degree of protection

■ **Application range**

- Cables for electrical appliances and machinery that are moved under normal use must be protected against excessive bending as required in accordance with VDE 0730.
- Handheld device
- Portable equipment
- Building sites
- Moving machine parts

■ **Approvals**



■ **Design**

- Metric connection thread acc. to EN 50262

■ **Note**

- Counter nut to be used: SKINDICHT® SM-M
- For EMC version, refer to SKINDICHT® SRE-M
- Example description:
SR-M 12/7/5
12 = metric connection thread
7 = PG function thread
5 = clear opening of seal

■ **Technical data**

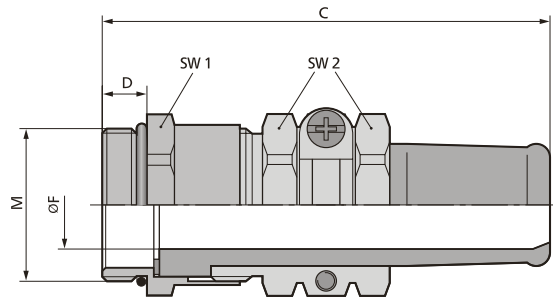
- Caution**
The installation dimensions can be found in appendix T21
- Upon request**
Available with long connection thread
- Material**
Metal parts: nickel-plated brass
O-ring: NBR
Anti-kink protection: CR/NBR
- Protection rating**
IP 65
- Temperature range**
-20°C to +80°C

Article number	Article designation / size	Clamping range ØF (mm)	Max. fitting size for installation (mm)	Function thread PG	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Clear opening F (mm)	Pieces / PU
SKINDICHT® SR-M									
52106410	12 x 1,5	4 - 5	23	7	14 / 15	49.0	5.0	5	50
52106420	16 x 1,5	5.5 - 7	25	9	18 / 17	50.0	5.0	7	50
52106430	20 x 1,5	5.5 - 7	28	11	22 / 20	55.0	6.0	7	25
52106440	20 x 1,5	7.5 - 9	28	11	22 / 20	55.0	6.0	9	25
52106450	20 x 1,5	7.5 - 9	32	13.5	22 / 22	60.0	6.0	9	25
52106460	20 x 1,5	9 - 11	32	13.5	22 / 22	60.0	6.0	11	25
52106470	20 x 1,5	11 - 13	32	13.5	22 / 22	60.0	6.0	13	25
52106480	20 x 1,5	12 - 13	35	16	24 / 24	65.0	6.0	13	25
52106481	20 x 1,5	13 - 15	35	16	24 / 24	66.0	6.0	15	25
52106490	25 x 1,5	12.5 - 15	46	21	30 / 30	78.5	7.0	15	25
52106500	25 x 1,5	14 - 17	46	21	30 / 30	78.5	7.0	17	25
52106510	25 x 1,5	17 - 19	46	21	30 / 30	78.5	7.0	19	25
52106520	25 x 1,5	17 - 20	46	21	30 / 30	78.5	7.0	20	25
52106530	32 x 1,5	19 - 20	59	29	40 / 41	90.5	8.0	20	10
52106540	32 x 1,5	22 - 23	59	29	40 / 41	90.5	8.0	23	10
52106550	32 x 1,5	23 - 25	59	29	40 / 41	90.5	8.0	25	10
52106560	40 x 1,5	24 - 26	70	36	50 / 50	108.0	8.0	26	5
52106570	40 x 1,5	28 - 30	70	36	50 / 50	108.0	8.0	30	5
52106580	40 x 1,5	31 - 33	70	36	50 / 50	108.0	8.0	33	5
52106590	40 x 1,5	33 - 34.5	70	36	50 / 50	108.0	8.0	35	5
52106600	50 x 1,5	31 - 34.5	75	42	57 / 57	111.0	9.0	35	5
52106610	50 x 1,5	32 - 38	75	42	57 / 57	111.0	9.0	38	5
52106620	50 x 1,5	37 - 40	75	42	57 / 57	111.0	9.0	40	5
52106630	63 x 1,5	32 - 40	83	48	66 / 64	118.0	10.0	40	1
52106640	63 x 1,5	36 - 44	83	48	66 / 64	118.0	10.0	44	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX

SKINDICHT® SR-SV-M



SKINDICHT® SR-SV-M

Benefits

- For high temperatures
- Resistant to oils, solvents, acids and chemicals
- Seawater-resistant
- High strain relief
- Robust

Application range

- Cables for electrical appliances and machinery that are moved under normal use must be protected against excessive bending as required in accordance with VDE 0730.
- Special cable gland with VITON® anti-kink sleeve. Our own reinforced acid-resistant VITON® receptacle does not show any effects of aging even after an extended period of use at a temperature of +165°C.
- Machine and turbine manufacturing
- Power plant engineering
- Laboratory

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- Counter nut to be used: SKINDICHT® SM-M
- EMC version is available upon request
- Example description:
SR-SV-M 20/11/7
20 = metric connection thread
11 = PG function thread
7 = clear opening of seal

Technical data

- Caution**
The installation dimensions can be found in appendix T21
- Upon request**
Available with long connection thread
- Material**
Body: nickel-plated brass
O-ring: FKM
Anti-kink protection: FKM
- Protection rating**
IP 65
- Temperature range**
-15°C to +165°C

Article number	Article designation / size	Clamping range ØF (mm)	Max. fitting size for installation (mm)	Function thread PG	SW 1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Clear opening F (mm)	Pieces / PU
SKINDICHT® SR-SV-M									
52105820	20 x 1,5	5.5 - 7	28	11	22 / 20	56.0	6.0	7	25
52105830	20 x 1,5	7.5 - 9	28	11	22 / 20	56.0	6.0	9	25
52105840	20 x 1,5	7.5 - 9	32	13.5	22 / 22	61.5	6.0	9	25
52105850	20 x 1,5	8.5 - 11	32	13.5	22 / 22	61.5	6.0	11	25
52105860	20 x 1,5	10.5 - 13	32	13.5	22 / 22	61.5	6.0	13	25
52105870	20 x 1,5	11 - 13	35	16	24 / 24	66.5	6.0	13	10
52105880	20 x 1,5	12 - 15	35	16	24 / 24	66.5	6.0	15	10
52105890	25 x 1,5	13.5 - 15	40	21	30 / 30	79.0	7.0	15	10
52105900	25 x 1,5	15.5 - 17	46	21	30 / 30	79.0	7.0	17	10
52105910	25 x 1,5	16.5 - 19	46	21	30 / 30	79.0	7.0	19	10

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SHVE-M



SKINDICHT® SHVE-M

Benefits

- Optimum, F8480 low-resistance 360° screen contact
- High degree of protection
- High strain relief

Application range

- Earthing gland, for applications where electrical interference fields can occur.
- Medical engineering
- Frequency converters
- Airports
- Measurement and control technology

Product features

- The allocation to the cable is done according to
 - 1 fitting
 - 2 earth sleeves
 - 3 sealing cones

Approvals



Design

- 1 fitting
- 2 earth sleeves
- 3 sealing cones
- 4 cone, brass
- 5 compression screws

Note

- Counter nut to be used: SKINDICHT® SM-M
- SKINDICHT® SM-PE-M counter nut should be used to ensure optimum contact with painted, anodised or powder-coated housings
- For more EMC cable glands, refer to SKINTOP® MS-SC-M and MS-M BRUSH, and compatible counter nut SKINDICHT® SM-PE-M
- Example order identification:
 SHVE-M 20 / 16 / 15 / 11
 20 = Connection thread metric
 16 = Function thread PG
 15 = Clear width of sealing cone
 11 = Clear width of earthing sleeve

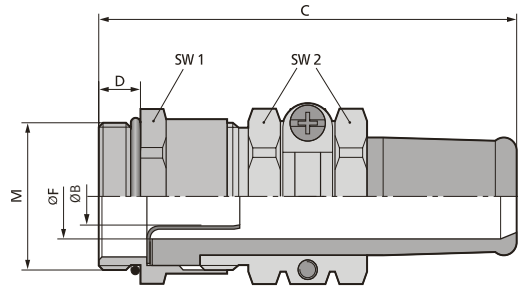
Technical data

- Caution**
The installation dimensions can be found in appendix T21
- Material**
Body: nickel-plated brass
Earthing sleeve: blank brass
Sealing cone: CR
O-ring: NBR
- Protection rating**
IP 68 - 10 bar
- Temperature range**
-20°C to +80°C

Article number	Article designation / size	Function thread PG	Outer sheath clamping range ØF (mm)	Inner sheath clamping range (mm)	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Clear opening EH ØB	Clear opening F (mm)	Pieces / PU
SKINDICHT® SHVE-M										
52106860	16 x 1,5	9	4,5 - 5,8	2,2 - 3,11	18 / 17	26,5	5,0	3,2	6	25
52106870	16 x 1,5	9	4,5 - 6,8	2,2 - 3,23	18 / 17	26,5	5,0	3,2	7	25
52106880	16 x 1,5	9	5,5 - 5,8	2,6 - 3,17	18 / 17	26,5	5,0	3,6	6	25
52106890	16 x 1,5	9	5,5 - 6,8	2,6 - 3,67	18 / 17	26,5	5,0	3,6	7	25
52106910	20 x 1,5	11	3 - 6,8	3,5 - 4,52	22 / 20	31,0	6,0	4,5	7	25
52106920	20 x 1,5	11	6 - 8,8	3,5 - 4,45	22 / 20	31,0	6,0	4,5	9	25
52106930	20 x 1,5	13,5	6,5 - 8,8	3,5 - 5	22 / 22	32,0	6,0	5,0	9	25
52106940	20 x 1,5	13,5	6 - 8,8	4,5 - 5,95	22 / 22	32,0	6,0	6,0	9	25
52106950	20 x 1,5	13,5	8 - 10,8	5,5 - 6,92	22 / 22	32,0	6,0	7,0	11	25
52106960	20 x 1,5	16	8,5 - 10,8	6 - 7,93	24 / 24	34,5	6,0	8,0	11	25
52106970	20 x 1,5	16	10 - 12,8	7 - 9	24 / 24	34,5	6,0	9,0	13	25
52106980	20 x 1,5	16	10 - 12,8	8 - 10	24 / 24	34,5	6,0	10,0	13	25
52106990	20 x 1,5	16	12,5 - 14,8	9 - 11,03	24 / 24	34,5	6,0	11,0	15	25
52107000	25 x 1,5	21	13 - 15,8	10 - 12,15	30 / 30	39,0	7,0	12,0	16	25
52107010	25 x 1,5	21	13 - 15,8	11 - 13	30 / 30	39,0	7,0	13,0	16	25
52107020	25 x 1,5	21	15,5 - 17,8	12 - 14	30 / 30	39,0	7,0	14,0	18	25
52107030	25 x 1,5	21	15 - 17,8	13 - 15	30 / 30	39,0	7,0	15,0	18	25
52107040	25 x 1,5	21	17,5 - 19,8	14 - 16	30 / 30	39,0	7,0	16,0	20	25
52107050	32 x 1,5	29	19 - 21,8	15 - 17,02	40 / 40	45,5	8,0	17,0	22	10
52107060	32 x 1,5	29	18 - 23,8	16 - 18	40 / 40	45,5	8,0	18,0	22	10
52107070	32 x 1,5	29	20 - 23,8	17 - 19	40 / 40	45,5	8,0	19,0	24	10
52107080	32 x 1,5	29	23 - 25,8	17 - 19	40 / 40	45,5	8,0	19,0	26	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SRE-M



SKINDICHT® SRE-M

Benefits

- Perfect seal with anti-kink protection
- Optimum, F8480 low-resistance 360° screen contact
- Cable-protecting strain relief
- Gentle cable clamping
- High degree of protection

Application range

- Earthing gland with additional anti-kink protection. For applications where electrical interference fields can occur.
- Moving machine parts
- Conveyor and transport systems
- Production lines
- Measurement and control technology

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- Counter nut to be used: SKINDICHT® SM-M
- SKINDICHT® SM-PE-M counter nut should be used to ensure optimum contact with painted, anodised or powder-coated housings
- Example description:
 SRE-M 20/13.5/9/6
 20 = connection thread
 13.5 = PG function thread
 9 = clear opening of anti-kink sleeve
 6 = clear opening of earthing sleeve

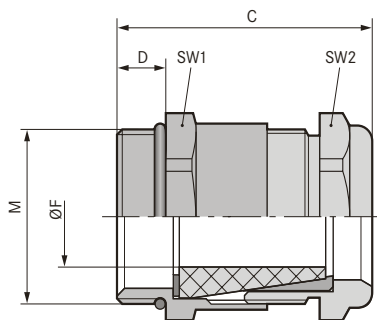
Technical data

- Caution**
The installation dimensions can be found in appendix T21
- Upon request**
Available with long connection thread
- Material**
Body: nickel-plated brass
Earthing sleeve: plain brass
Anti-kink sleeve: CR/NBR
O-ring: NBR
- Protection rating**
IP 65
- Temperature range**
-20 °C to +80 °C

Article number	Article designation / size	Function thread PG	Outer sheath clamping range ØF (mm)	Inner sheath clamping range (mm)	SW 1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Clear opening earthing sleeve ØB	Clear opening F (mm)	Pieces / PU
SKINDICHT® SRE-M										
52105600	20 x 1,5	13.5	7,5 - 9	4,5 - 6	22 / 22	59.5	6.0	6.0	9	25
52105610	20 x 1,5	13.5	9 - 11	5,5 - 7	22 / 22	59.5	6.0	7.0	11	25
52105620	20 x 1,5	16	11 - 13	7 - 9	24 / 24	64.5	6.0	9.0	13	25
52105630	20 x 1,5	16	11 - 13	8 - 10	24 / 24	64.5	6.0	10.0	13	25
52105640	20 x 1,5	16	13,5 - 15	9 - 11	24 / 24	64.5	6.0	11.0	15	25
52105650	25 x 1,5	21	13,5 - 15	10 - 12	30 / 30	78.0	7.0	12.0	15	25
52105660	25 x 1,5	21	15 - 17	12 - 14	30 / 30	78.0	7.0	14.0	17	25
52105670	25 x 1,5	21	17 - 19	13 - 15	30 / 30	78.0	7.0	15.0	19	25
52105680	25 x 1,5	21	18 - 20	14 - 16	30 / 30	78.0	7.0	16.0	20	25
52105690	32 x 1,5	29	18 - 20	15 - 17	40 / 40	90.0	8.0	17.0	20	10
52105700	32 x 1,5	29	21 - 23	17 - 19	40 / 40	90.0	8.0	19.0	23	10
52105710	40 x 1,5	36	23,5 - 26	20 - 22	50 / 50	108.0	8.0	22.0	26	5
52105720	40 x 1,5	36	27 - 30	22 - 24	50 / 50	108.0	8.0	24.0	30	5
52105730	40 x 1,5	36	30 - 33	26 - 28	50 / 50	108.0	8.0	28.0	33	5
52105740	40 x 1,5	36	32 - 35	28 - 30	50 / 50	108.0	8.0	30.0	35	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SHV-M



SKINDICHT® SHV-M

■ **Benefits**

- Watertight
- Gentle cable clamping
- Robust
- High strain relief

■ **Application range**

- Watertight cable gland with conical sealing element.
- Pumps
- Floater switches

■ **Approvals**



■ **Design**

- Metric connection thread acc. to EN 50262

■ **Note**

- Counter nut to be used: SKINDICHT® SM-M
- Suitable accessory: SKINDICHT® SHV sealing cones
- Example description:
SHV-M 20 / 11 / 7
20 = metric connection thread
11 = PG function thread
7 = clear opening of sealing cone

■ **Technical data**

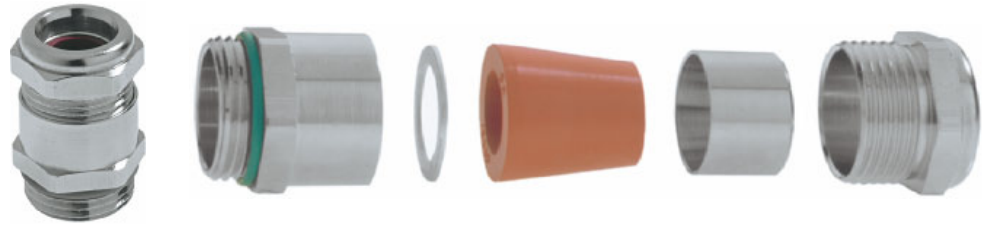
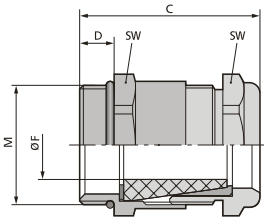
- Caution**
The installation dimensions can be found in appendix T21
- Material**
Body: nickel-plated brass
Sealing cone: CR
O-ring: NBR
- Protection rating**
IP 68 - 10 bar
- Temperature range**
-20°C to +80°C

Article number	Article designation / size	Clamping range ØF (mm)	Function thread PG	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Clear opening seal	Pieces / PU
SKINDICHT® SHV-M								
52105270	12 x 1,5	3 - 4,8	7.0	14 / 14	26.0	5.0	5	50
52105280	16 x 1,5	4,5 - 5,8	9.0	18 / 17	26.5	5.0	6	50
52105290	16 x 1,5	4,5 - 6,8	9.0	18 / 17	26.5	5.0	7	50
52105300	20 x 1,5	6 - 6,8	11.0	22 / 20	31.0	6.0	7	25
52105310	20 x 1,5	6,5 - 8,8	11.0	22 / 20	31.0	6.0	9	25
52105320	20 x 1,5	6,5 - 8,8	13.5	22 / 22	32.5	6.0	9	25
52105330	20 x 1,5	9 - 10,8	13.5	22 / 22	32.5	6.0	11	25
52105340	20 x 1,5	9 - 10,8	16.0	24 / 24	34.5	6.0	11	25
52105350	20 x 1,5	9,5 - 12,8	16.0	24 / 24	34.5	6.0	13	25
52105360	20 x 1,5	13 - 14,8	16.0	24 / 24	34.5	6.0	15	25
52105370	25 x 1,5	13,5 - 15,8	21.0	30 / 30	38.5	7.0	16	25
52105380	25 x 1,5	15 - 17,8	21.0	30 / 30	38.5	7.0	18	25
52105390	25 x 1,5	17,5 - 19,8	21.0	30 / 30	38.5	7.0	20	25
52105400	32 x 1,5	17,5 - 21,8	29.0	40 / 40	42.5	8.0	22	10
52105410	32 x 1,5	19 - 23,8	29.0	40 / 40	42.5	8.0	24	10
52105420	32 x 1,5	23 - 25,8	29.0	40 / 40	42.5	8.0	26	10

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SKINDICHT® SHV-M-VITON®



SKINDICHT® SHV-M-VITON®

Benefits

- For high temperatures
- Resistant to oils, solvents, acids and chemicals
- Watertight
- High strain relief
- Robust

Application range

- Watertight and high temperature-resistant cable gland with special conical VITON® sealing element.
- Brickworks
- Sewage treatment plants
- Car wash sites

Approvals



Design

- 1 fitting
- 2 washers
- 3 VITON® sealing cone
- 4 brass cones
- 5 compression screws

Note

- Counter nut to be used: SKINDICHT® SM-M
- Example description:
SHV-M-Viton® 20/11/7
20 = metric connection thread
11 = PG function thread
7 = clear opening of sealing cone

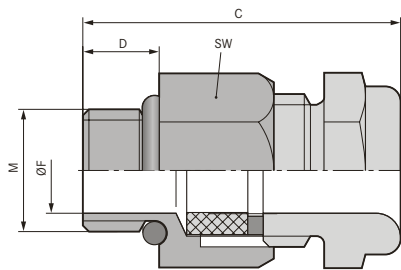
Technical data

- Caution**
The installation dimensions can be found in appendix T21
- Material**
Body: nickel-plated brass
Sealing cone: FKM
O-ring: FKM
- Protection rating**
IP 68 - 10 bar
- Temperature range**
-15°C to +200°C

Article number	Article designation / size	Clamping range ØF (mm)	Function thread PG	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Clear opening F (mm)	Pieces / PU
SKINDICHT® SHV-M-VITON®								
52105430	12 x 1,5	3,8 - 4,8	7,0	14 / 14	26,0	5,0	5	50
52105440	16 x 1,5	4,8 - 5,8	9,0	18 / 17	27,5	5,0	6	50
52105450	16 x 1,5	5,8 - 6,8	9,0	18 / 17	27,5	5,0	7	50
52105460	20 x 1,5	5,8 - 6,8	11,0	22 / 20	31,0	6,0	7	25
52105470	20 x 1,5	6,8 - 8,8	11,0	22 / 20	31,0	6,0	9	25
52105480	20 x 1,5	8,5 - 10,8	13,5	22 / 22	32,5	6,0	11	25
52105490	20 x 1,5	6,8 - 8,8	13,5	22 / 22	32,5	6,0	9	25
52105500	20 x 1,5	10,8 - 12,8	16,0	24 / 24	34,5	6,0	13	25
52105510	20 x 1,5	13,8 - 14,8	16,0	24 / 24	34,5	6,0	15	25
52105520	25 x 1,5	15,8 - 17,8	21,0	30 / 30	38,0	7,0	18	25
52105530	25 x 1,5	17,5 - 19,8	21,0	30 / 30	38,0	7,0	20	25
52105540	32 x 1,5	19,5 - 21,8	29,0	40 / 40	44,5	8,0	22	10

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® MINI



SKINDICHT® MINI

Benefits

- High degree of protection
- For the smallest conductor sizes
- Low height
- Gentle cable clamping
- High packing density

Application range

- For use wherever there is limited assembly space.
- Sensors
- Measuring technology

Approvals



Technical data

- Material**
Body: nickel-plated brass
Seal: CR/NBR
- Protection rating**
IP 68
- Temperature range**
-20°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® MINI						
52001860	MINI 6 x 1	2 - 3	9	19,5	5,0	50
52001880	MINI 8 x 1	3,5 - 5,5	11	20,5	5,0	50

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® CN-M



SKINDICHT® CN-M

■ **Benefits**

- For high temperatures
- Resistant to oils, solvents, acids and chemicals
- Sea water-resistant
- For high mechanical stress
- High corrosion-resistance

■ **Application range**

- Chromium nickel steel cable gland with VITON® seal, specially designed for use under tough conditions.
- Pharmaceutical and petrochemical industry
- Offshore sector
- Wind power plants
- Brickworks

■ **Approvals**



■ **Design**

- Metric connection thread acc. to EN 50262

■ **Note**

- Refer to the chart to find a suitable counter-nut for SKINDICHT® SM CrNi M

■ **Technical data**



Caution
The installation dimensions can be found in appendix T21



Material
Body: chrome-nickel steel in accordance with DIN, material no. 1.4305
Inner seal: FPM
O-ring: FPM



Protection rating
IP 68

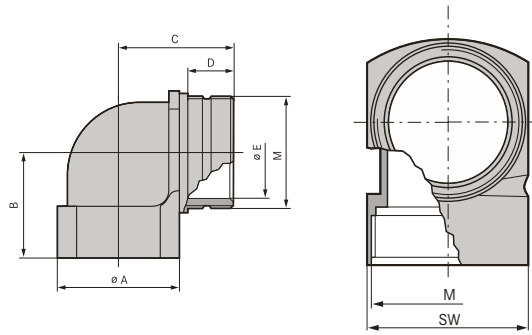


Temperature range
-25°C to +200°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® CN-M						
52032580	12 x 1,5/1	3,5 - 5	17	27,0	10,0	5
52032590	12 x 1,5/2	5 - 6,5	17	27,0	10,0	5
52032600	12 x 1,5/3	6,5 - 8	17	27,0	10,0	5
52032610	16 x 1,5	8 - 10,5	18	30,0	10,0	5
52032620	20 x 1,5	11 - 15	24	31,0	10,0	5
52032630	25 x 1,5	16 - 20,5	30	36,0	11,0	5
52032640	32 x 1,5	21 - 25,5	36	41,0	13,0	5
52032650	40 x 1,5	28,5 - 33	46	44,0	13,0	1
52032660	50 x 1,5	37 - 42	55	48,0	14,0	1
52032670	63 x 1,5	46 - 52	70	51,0	14,0	1
SKINDICHT® SM CrNi M counter nuts						
52032585	12 x 1,5	-	17	3,0	3,0	10
52032615	16 x 1,5	-	19	3,0	3,0	10
52032625	20 x 1,5	-	24	3,5	3,5	10
52032635	25 x 1,5	-	30	3,5	3,5	10
52032645	32 x 1,5	-	36	4,5	4,5	10
52032655	40 x 1,5	-	46	4,5	4,5	10
52032665	50 x 1,5	-	55	5,5	5,5	10
52032675	63 x 1,5	-	70	6,0	6,0	10

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® KW-M



SKINDICHT® KW-M

Benefits

- Space-saving
- Decrease in installation height

Application range

- Angled glands are used in areas where cables have to run in parallel to the housing wall.
- Light and sound applications
- Control cabinet manufacturing

Design

- Metric connection thread acc. to EN 50262

Note

- Refer to SKINDICHT® O-ring Perbunan® for suitable O-rings
- SKINDICHT® KW-M can be combined with any cable gland, in particular with SKINTOP® ST-M
- Counter nut to be used: SKINTOP® GMP-GL-M

Technical data

- RAL** Colour delivered: Silver grey (RAL 7001)
- Material**: Polyamide, glass fibre-reinforced
- IP** Protection rating: IP 55
- Temperature range**: -20°C to +80°C

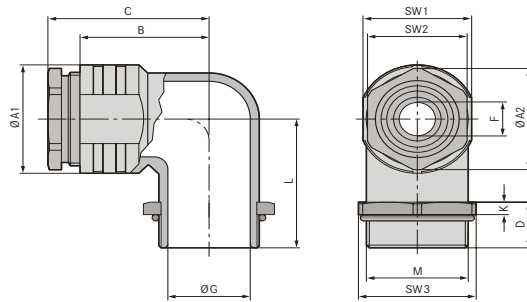
Approvals



Article number	Article designation / size	A mm	B in mm	ØE mm	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® KW-M								
52106210	16 x 1,5	19.0	21.5	11	19	24.0	13.0	25
52106220	20 x 1,5	25.0	24.5	15	25	29.5	15.0	25
52106230	25 x 1,5	30.0	28.0	20	30	33.5	16.0	25
52106240	32 x 1,5	36.0	31.5	26	36	38.0	17.0	10

Perbunan® is a registered trademark of BAYER AG
Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® RWV-M



SKINDICHT® RWV-M

Benefits

- Strain relief
- Sealed by incised sealing ring
- Corrosion-resistant
- Decrease in installation height
- Sea water-resistant

- Plant engineering
- Light and sound applications

Approvals



Application range

- Angled glands are used in areas where cables have to run in parallel to the housing wall.
- Electric motor manufacturing
- Machine and equipment manufacturing

Design

- Metric connection thread acc. to EN 50262

Note

- Counter nut to be used: SKINDICHT® SM-M

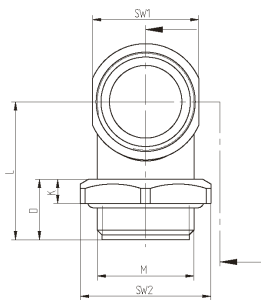
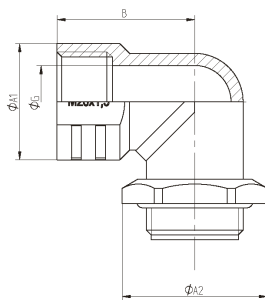
Technical data

- Material**: Body: zinc die-casting, nickel-plated
Compression screw and hexagon nut: nickel-plated brass
Incised sealing ring: CR/NBR
O-ring: NBR
- IP** Protection rating: IP 55
- Temperature range**: -20°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	L	SW1	Ø A1	SW2	Ø A2	Ø G	Height (mm)	Overall length, C (mm)	Thread length, D (mm)	SW3	Pieces / PU
SKINDICHT® RWV-M													
52107800	12 x 1,5	5	20.5	14	16	12	13.2	8	5	26.1	11.5	17	25
52107810	16 x 1,5	9 - 3	23.5	18	20	16	17.6	12	5	28.6	11.5	22	25
52107820	20 x 1,5	13 - 4	28.5	22	24	20	22.2	15	5	35.1	12.5	27	25
52107830	25 x 1,5	17.5 - 8.5	31.0	27	29	25	27.5	20	5	38.1	13.5	32	10
52107840	32 x 1,5	25 - 16	33.0	34	36	32	35.2	27	5	44.6	13.5	41	10
52107850	40 x 1,5	32 - 23	43.0	42	45	40	43.5	35	5	53.1	15.5	46	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® RWV-M without E+D



SKINDICHT® RWV-M without E+D

Benefits

- Combination of different conduit glands is possible
- Space-saving
- Decrease in installation height
- Cable runs parallel to the housing wall
- Corrosion-resistant

Application range

- Angled glands are used in areas where cables have to run in parallel to the housing wall.
- Electric motor manufacturing
- Machine and equipment manufacturing
- Plant engineering
- Light and sound applications

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- The protection class is dependent on the combination with the various special glands. The minimum standard is IP 55.
- Counter nut to be used: SKINDICHT® SM-M

Technical data



Material
 Body: zinc die-casting
 Hexagon nut: nickel-plated brass
 O-ring: NBR



Protection rating
 IP 55



Temperature range
 -20°C to +100°C

Article number	Article designation / size	B in mm	Thread length, D (mm)	K	L	Ø G	SW1	Ø A1	SW2	Ø A2	Pieces / PU
SKINDICHT® RWV-M without E+D											
52107801	12 x 1,5	21,0	11,5	5	21,0	8,0	14	16	17	18,9	25
52107811	16 x 1,5	23,0	11,5	5	24,0	12,0	18	20	22	24,5	25
52107821	20 x 1,5	28,5	12,5	5	29,0	15,0	22	24	27	30,1	25
52107831	25 x 1,5	30,0	13,5	5	31,0	20,0	27	29	32	35,7	10
52107841	32 x 1,5	33,5	13,5	5	33,0	27,0	34	33	41	45,6	10
52107851	40 x 1,5	43,0	15,5	5	43,0	35,0	42	43	46	50,6	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SE-M



Benefits

- Sealed by incised sealing ring
- Corrosion-resistant
- Easy to assemble/install
- Completely safe cable entry
- Low overall height

Application range

- For high mechanical stress
- When no connection thread is provided

Approvals



Design

- M20 x 1.5 - M25 x 1.5 with 2 screw holes
- M32 x 1.5 with 4 screw holes
- With incised sealing ring

Technical data



Material
 Body: zinc die-casting, grey, hammer tone finish
 Compression screw: nickel-plated brass
 Incised sealing ring: CR/NBR
 O-ring: NBR



Protection rating
 IP 55



Temperature range
 -20°C to +80°C

Article number	Article designation / size	Incised sealing ring ØF (mm)	Overall height (mm)	SW (mm)	Overall length, C (mm)	Overall width (mm)	Pieces / PU
SKINDICHT® SE-M							
52108000	M 20 x 1,5	4/7/10/13	31,0	20	49,2	42	10
52108010	M 25 x 1,5	8,5/11,5/14,5/17,5	40,0	25	68,2	60	5
52108020	M 32 x 1,5	16/19/22/25	51,5	32	84,2	66	1

Perbunan® is a registered trademark of BAYER AG

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

SKINDICHT® SE-M without E+D



SKINDICHT® SE-M without E+D

Benefits

- Combination of different conduit glands is possible
- Corrosion-resistant
- Easy to assemble/install
- Completely safe cable entry
- Low overall height

Application range

- The flange angle gland can be combined with all glands (including O-ring) e.g. strain relief, bending protection and conduit glands
- For high mechanical stress
- When no connection thread is provided

Approvals



Design

- M20 x 1.5 - M25 x 1.5 with 2 screw holes
- M32 x 1.5 with 4 screw holes

Note

- The protection class is dependent on the combination with the various special glands. The minimum standard is IP 55.

Technical data

Material
 Body: zinc die-casting, grey, hammer tone finish
 O-ring: NBR

IP Protection rating
 IP 55

Temperature range
 -20°C to +100°C

Article number	Article designation / size	Height (mm)	Overall width (mm)	Length (mm)	PU
SKINDICHT® SE-M without E+D					
52108001	20 x 1,5	31	42	42.0	10
52108011	25 x 1,5	40	60	60.0	5
52108021	32 x 1,5	51.5	66	76.0	1

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SE-M 220/320

Benefits

- Combination of various conduit glands is possible depending on the type
- Low overall height
- High stability
- Two or three separate cable outlets

Application range

- For high mechanical stress
- When no connection thread is provided

Technical data

Material
 Body: zinc die-casting, hammer tone finish
 Compression screw: nickel-plated brass
 Incised sealing ring: CR/NBR
 Flat sealing ring: SBR

IP Protection rating
 IP 55

Temperature range
 -20°C to +80°C



Approvals



Note

- Type SKINDICHT® SE-M 220/320 without E+D is without incised sealing ring and without compression screw

- Type SKINDICHT® SE-M 220/320 without E+D can be combined with all cable glands (incl. O-ring) such as sealing, strain-relief, anti-kink, conduit-connecting or earthing glands
- The protection class is dependent on the combination with the various special glands. The minimum standard is IP 55.

Article number	Article designation / size	Incised sealing ring ØF (mm)	Pieces / PU
SKINDICHT® SE-M 220/320			
52108040	2 x M20 x 1,5	2 x 4/7/10/13	1
52108050	3 x M20 x 1,5	3 x 4/7/10/13	1
SKINDICHT® SE-M 220/320 without E+D			
52108041	2 x M20 x 1,5		1
52108051	3 x M20 x 1,5		1

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SM-M



SKINDICHT® SM-M

■ **Application range**

- Used when a gland has to be countered, or in through-holes on thin-walled housings


■ **Approvals**



■ **Design**

- Metric connection thread acc. to EN 50262

■ **Technical data**

 **Material**
Nickel-plated brass

Article number	Article designation / size	Thickness (mm)	SW (mm)	Outer Ø (mm)	Pieces / PU
SKINDICHT® SM-M					
52103000	12 x 1,5	3.0	15	16.5	100
52103010	16 x 1,5	3.0	19	20.9	100
52103020	20 x 1,5	3.5	24	26.4	100
52103030	25 x 1,5	4.0	30	33.0	100
52103040	32 x 1,5	4.0	36	39.6	100
52103050	40 x 1,5	5.0	46	50.6	50
52103060	50 x 1,5	5.0	60	66.0	50
52103070	63 x 1,5	5.0	70	77.0	25
52103071	75 x 1,5	8.0	85	95.0	5
52103072	90 x 2	10.0	102	114.0	1
52103073	110 x 2	12.0	124	135.0	1

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SM-PE-M



SKINDICHT® SM-PE-M

■ **Benefits**

- Cutting edges cut through the insulating layer, thus guaranteeing an optimum EMC contact
- Suitable for all metric glands used in earthing and EMC applications


■ **Approvals**



■ **Design**

- Metric connection thread acc. to EN 50262

■ **Technical data**

 **Material**
Nickel-plated brass

Article number	Article designation / size	Thickness (mm)	SW (mm)	Outer Ø (mm)	Pieces / PU
SKINDICHT® SM-PE-M					
52103300	12 x 1,5	3.5	15	16.5	100
52103310	16 x 1,5	3.5	19	20.9	100
52103320	20 x 1,5	3.7	24	26.4	100
52103330	25 x 1,5	4.2	30	33.0	50
52103340	32 x 1,5	4.7	36	39.6	50
52103350	40 x 1,5	5.5	46	50.6	25
52103360	50 x 1,5	5.5	60	66.0	10
52103370	63 x 1,5	7.0	70	77.0	10
52103371	75 x 1,5	8.0	85	95.0	5
52103372	90 x 2	10.0	102	114.0	1
52103373	110 x 2	12.0	124	135.0	1

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® BLK-M / SKINDICHT® BLK-GL-M



Info

- SKINDICHT® BLK-M/ BLK-GL-M will be renamed into SKINTOP® PLUG



SKINDICHT® BLK-M

SKINDICHT® BLK-GL-M

Benefits

SKINDICHT® BLK-M

- For closing pre-threaded holes
- Cost-effective solution

SKINDICHT® BLK-GL-M

- For closing pre-threaded holes
- High stability due to glass fibre reinforcement

Application range

- Control cabinet manufacturing
- Distribution box
- Junction boxes

Approvals



Design

- Metric connection thread acc. to EN 50262

Technical data



Upon request
SKINDICHT® BLK-M
 BLK-M with O-ring,
 black RAL 9005



Colour delivered
SKINDICHT® BLK-M
 Light grey (RAL 7035)
SKINDICHT® BLK-GL-M
 Silver grey (RAL 7001)
 Light grey (RAL 7035)
 Black (RAL 9005)



Material
SKINDICHT® BLK-M
 Impact-resistant polystyrene
SKINDICHT® BLK-GL-M
 Polyamide, glass fibre-reinforced



Protection rating
 IP 54
 IP 68 with O-ring



Temperature range
SKINDICHT® BLK-M
 -25 °C to +60 °C
SKINDICHT® BLK-GL-M
 -40 °C to +100 °C

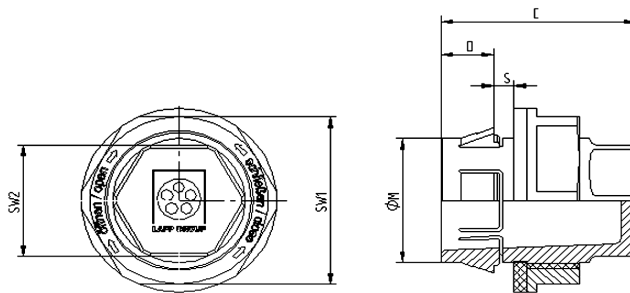
Article number	Article designation / size	Thread length, D (mm)	Pieces / PU
SKINDICHT® BLK-M			
52006600	12 x 1,5	6,0	100
52006610	16 x 1,5	6,0	100
52006620	20 x 1,5	6,0	100
52006630	25 x 1,5	8,0	100
52006640	32 x 1,5	8,0	50
52006650	40 x 1,5	8,0	25
52006660	50 x 1,5	10,0	25
52006670	63 x 1,5	12,0	25
SKINDICHT® BLK-GL-M silver-grey			
52006101	12 x 1,5	6,0	100
52006111	16 x 1,5	6,0	100
52006121	20 x 1,5	6,0	100
52006131	25 x 1,5	8,0	100
52006141	32 x 1,5	8,0	50
52006151	40 x 1,5	8,0	25
52006161	50 x 1,5	10,0	25
52006171	63 x 1,5	12,0	25
SKINDICHT® BLK-GL-M light grey			
52006100	12 x 1,5	6,0	100
52006110	16 x 1,5	6,0	100
52006120	20 x 1,5	6,0	100
52006130	25 x 1,5	8,0	100
52006140	32 x 1,5	8,0	50
52006150	40 x 1,5	8,0	25
52006160	50 x 1,5	10,0	25
52006170	63 x 1,5	12,0	25
SKINDICHT® BLK-GL-M black			
52006103	12 x 1,5	6,0	100
52006113	16 x 1,5	6,0	100
52006123	20 x 1,5	6,0	100
52006133	25 x 1,5	8,0	100
52006143	32 x 1,5	8,0	50
52006153	40 x 1,5	8,0	25
52006163	50 x 1,5	10,0	25
52006173	63 x 1,5	12,0	25
SKINDICHT® BLK-GL-M silver-grey mounted with O-ring			
52006109	12 x 1,5	6,0	100
52006119	16 x 1,5	6,0	100
52006129	20 x 1,5	6,0	100
52006139	25 x 1,5	8,0	100
52006149	32 x 1,5	8,0	50

Article number	Article designation / size	Thread length, D (mm)	Pieces / PU
52006159	40 x 1,5	8.0	25
52006169	50 x 1,5	10.0	25
52006179	63 x 1,5	12.0	25
SKINDICHT® BLK-GL-M light grey mounted with O-ring			
52006107	12 x 1,5	6.0	100
52006117	16 x 1,5	6.0	100
52006127	20 x 1,5	6.0	100
52006137	25 x 1,5	8.0	100
52006147	32 x 1,5	8.0	50
52006157	40 x 1,5	8.0	25
52006167	50 x 1,5	10.0	25
52006177	63 x 1,5	12.0	25
SKINDICHT® BLK-GL-M black mounted with O-ring			
52006106	12 x 1,5	6.0	100
52006116	16 x 1,5	6.0	100
52006126	20 x 1,5	6.0	100
52006136	25 x 1,5	8.0	100
52006146	32 x 1,5	8.0	50
52006156	40 x 1,5	8.0	25
52006166	50 x 1,5	10.0	25
52006176	63 x 1,5	12.0	25

Photographs are not to scale and do not represent detailed images of the respective products.

New

SKINTOP® CLICK BLK



SKINTOP® CLICK BLK

Benefits

- Save up to 70% of the time with the innovative CLICK system
- Simple, free assembly in any position
- Fewer parts, counter nut no longer needed
- No thread required
- Captive

Application range

- Dummy plug with innovative CLICK system for fast installation in hard-to-reach locations. Perfect solution for closing pre-made bore holes that are no longer required.
- Control cabinet manufacturing
- Measurement, control and electrical applications
- Automation technology
- Plant engineering, machinery manufacturing

Approvals



Included

- Included: disassembly tool

Technical data

RAL	Colour delivered Light grey (RAL 7035)
	Material Body: special polyamide Seal: special elastomer
IP	Protection rating IP 68 - 5 bar
	Temperature range -20°C to +100°C

Article number	Article designation / size	M (hole in mm)	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Wall thickness, S (mm)	Pieces / PU
SKINTOP® CLICK BLK light grey							
52109013	CLICK BLK 16	16.3 (-0.2)	14 / 22	28.5	8.0	1.0 - 4.0	50
52109014	CLICK BLK 20	20.3 (-0.2)	18 / 27	29.5	8.0	1.0 - 4.0	25
52109015	CLICK BLK 25	25.3 (-0.2)	22 / 14	30.5	8.0	1.0 - 4.0	25

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® BL-M



SKINDICHT® BL-M

Benefits

- For closing pre-threaded holes
- Assembling with screwdriver

Application range

- Machine and equipment manufacturing
- Electric motor manufacturing

Approvals



Design

- Metric connection thread acc. to EN 50262

Technical data

- Upon request**
Fitted with FKM O-ring
- Material**
Dummy plug: nickel-plated brass
O-ring: NBR
- IP**
IP 54
IP 68 with O-ring
- Temperature range**
With O-ring: -30°C to +100°C
Without O-ring: -60°C to +200°C

Article number	Article designation / size	Outer Ø (mm)	Pieces / PU
SKINDICHT® BL-M			
52103100	12 x 1,5	14.0	100
52103110	16 x 1,5	18.0	100
52103120	20 x 1,5	22.0	100
52103130	25 x 1,5	28.0	100
52103140	32 x 1,5	35.0	50
52103150	40 x 1,5	44.0	25
52103160	50 x 1,5	54.0	10
52103170	63 x 1,5	70.0	10
SKINDICHT® BL-M with O-ring			
52103105	12 x 1,5	14.0	100
52103115	16 x 1,5	18.0	100
52103125	20 x 1,5	22.0	100
52103135	25 x 1,5	28.0	100
52103145	32 x 1,5	35.0	50
52103155	40 x 1,5	44.0	25
52103165	50 x 1,5	54.0	10
52103175	63 x 1,5	70.0	10
52103190	75 x 1,5	80.0	1

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® BL-M hexagonal



Benefits

- For closing pre-threaded holes
- High degree of protection

Application range

- Machine and equipment manufacturing
- Electric motor manufacturing

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- Dummy plug made of chromium nickel steel on request

Technical data

Upon request
VITON® O-ring
-20 °C to +200 °C

Material
Body: nickel-plated brass
O-ring: NBR

Protection rating
IP 68

Temperature range
-30°C to +100°C

Article number	Article designation / size	SW (mm)	Outer Ø (mm)	Pieces / PU
SKINDICHT® BL-M hexagon				
52103405	12 x 1,5	16	17.8	50
52103415	16 x 1,5	20	22.0	50
52103425	20 x 1,5	24	26.4	50
52103435	25 x 1,5	29	31.9	50
52103445	32 x 1,5	36	39.6	25
52103455	40 x 1,5	45	49.5	25
52103465	50 x 1,5	54	59.0	10
52103475	63 x 1,5	67	73.5	10

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® BL-M ATEX



Benefits

- High degree of protection
- Cold impact resistance

Application range

- Equipment group II / Category 2G+1D
- Devices, machines and apparatus
- For mobile applications in offshore and marine industries
- Chemical and petrochemical industry

Approvals



Design

- Metric connection thread acc. to EN 50262

Technical data

Approvals
DIN VDE
IBExU03ATEX1011
II 2G EEx e II 1D IP66/68

Material
Body: nickel-plated brass
O-ring: NBR

Protection rating
IP 68

Temperature range
-30°C to +90°C

Article number	Article designation / size	SW (mm)	Thread length, D (mm)	Outer Ø (mm)	PU
SKINDICHT® BL-M ATEX					
52103103	12 x 1,5	16	5.0	17.8	50
52103113	16 x 1,5	20	5.0	22.0	50
52103123	20 x 1,5	24	6.0	26.4	50
52103133	25 x 1,5	29	7.0	31.9	50
52103143	32 x 1,5	36	8.0	39.6	25
52103153	40 x 1,5	45	8.0	49.5	25
52103163	50 x 1,5	54	9.0	59.0	10
52103173	63 x 1,5	67	10.0	73.5	10

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SKINDICHT® KU-M



Benefits

- Enables the use of cable glands with smaller connection threads than the existing threaded holes

Application range

- Machines
- Devices
- Housings

Approvals



Design

- Metric connection thread acc. to EN 50262

Technical data

- Colour delivered**
Light grey (RAL 7035)
- Material**
Polyamide, glass fibre-reinforced
- Temperature range**
-40°C to +100°C

Article number	Thread, male M1	Thread, female M2	SW (mm)	Pieces / PU
SKINDICHT® KU-M light grey				
52104505	16 x 1.5	12 x 1.5	22	100
52104470	20 x 1.5	12 x 1.5	24	100
52104504	20 x 1.5	16 x 1.5	24	100
52104472	25 x 1.5	12 x 1.5	29	100
52104473	25 x 1.5	16 x 1.5	29	100
52104474	25 x 1.5	20 x 1.5	29	100
52104475	32 x 1.5	12 x 1.5	36	50
52104476	32 x 1.5	16 x 1.5	36	50
52104477	32 x 1.5	20 x 1.5	36	50
52104478	32 x 1.5	25 x 1.5	36	50
52104479	40 x 1.5	16 x 1.5	46	50
52104480	40 x 1.5	20 x 1.5	46	50
52104481	40 x 1.5	25 x 1.5	46	25
52104482	40 x 1.5	32 x 1.5	46	25
52104483	50 x 1.5	20 x 1.5	55	5
52104484	50 x 1.5	25 x 1.5	55	5
52104485	50 x 1.5	32 x 1.5	55	5
52104486	50 x 1.5	40 x 1.5	55	5
52104487	63 x 1.5	25 x 1.5	68	5
52104488	63 x 1.5	32 x 1.5	68	5
52104489	63 x 1.5	40 x 1.5	68	5
52104469	63 x 1.5	50 x 1.5	68	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® MR-M



Benefits

- Enables the use of cable glands with smaller connection threads than the existing threaded holes

Application range

- Machines
- Devices
- Housings

Approvals



Technical data

- Upon request**
Also available with pre-installed O-ring
- Material**
Nickel-plated brass
- Temperature range**
-60°C to +200°C

Design

- Metric connection thread acc. to EN 50262

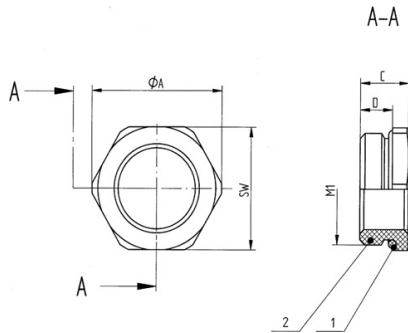
Article number	Thread, male M1	Thread, female M2	Pieces / PU
SKINDICHT® MR-M			
52104310	16 x 1.5	12 x 1.5	100
52104311	20 x 1.5	12 x 1.5	100
52104312	20 x 1.5	16 x 1.5	100
52104313	25 x 1.5	16 x 1.5	50
52104314	25 x 1.5	20 x 1.5	50
52104315	32 x 1.5	20 x 1.5	50
52104316	32 x 1.5	25 x 1.5	50
52104317	40 x 1.5	25 x 1.5	25
52104318	40 x 1.5	32 x 1.5	25
52104319	50 x 1.5	32 x 1.5	25
52104320	50 x 1.5	40 x 1.5	10
52104321	63 x 1.5	40 x 1.5	10
52104322	63 x 1.5	50 x 1.5	10
SKINDICHT® MR-M, blank brass, without hexagon			
52006579	80 x 2	75 x 1.5	1
SKINDICHT® MR-M, nickel-plated brass, without hexagon			
52006575	72 x 2	63 x 1.5	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

SKINDICHT® MR-M hexagonal



Benefits

- Enables the use of cable glands with smaller connection threads than the existing threaded holes
- With guide notch for O-ring
- Assembling with a wrench

Application range

- Machines
- Devices
- Housings

Approvals



Design

- Metric connection thread acc. to EN 50262

Technical data

- Upon request**
VITON® O-ring
-20 °C to +200 °C
- Material**
Body: nickel-plated brass
O-ring: NBR
- Temperature range**
-30°C to +100 °C

Article number	Thread, male M1	Thread, female M2	SW (mm)	ØA mm	Overall length, C (mm)	Thread length, D (mm)	Outer Ø (mm)	Pieces / PU
SKINDICHT® MR-M hexagon								
52101965	16 x 1,5	12 x 1,5	18	20,2	8,5	5,5		50
52101966	20 x 1,5	16 x 1,5	22	24,4	9,0	6,0		50
52101967	25 x 1,5	16 x 1,5	28	31,2	10,0	6,5		50
52101968	25 x 1,5	20 x 1,5	28	31,2	10,0	6,5		50
52101969	32 x 1,5	16 x 1,5	36	40,0	11,5	8,0		25
52101972	32 x 1,5	20 x 1,5	36	40,0	11,5	8,0		25
52101973	32 x 1,5	25 x 1,5	36	40,0	11,5	8,0		25
52101974	40 x 1,5	25 x 1,5	43	47,5	12,5	8,5		10
52101975	40 x 1,5	32 x 1,5	43	47,5	12,5	8,5		10
52101976	50 x 1,5	40 x 1,5	54	58,0	14,0	10,0		5
52101977	63 x 1,5	50 x 1,5	67	74,0	14,0	9,5		5
52101979	75 x 1,5	63 x 1,5	80	90,0	17,0	11,0		1
SKINDICHT® MR-M, blank brass, with hexagon								
52006572	80 x 2	63 x 1,5	85		23,0	15,0	93,5	1

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® MR-M ATEX



Benefits

- Enables the use of cable glands with smaller connection threads than the existing threaded holes
- With guide notch for O-ring
- Assembling with a wrench

Application range

- Equipment group II / Category 2G+1D
- Devices, machines and apparatus
- For mobile applications in offshore and marine industries
- Chemical and petrochemical industry

Approvals



Design

- Metric connection thread acc. to EN 50262

Technical data

- Approvals**
DIN VDE
IBExU03ATEX1010
II 2G EEx e II 1D IP66/68
- Material**
Body: nickel-plated brass
O-ring: NBR
- Temperature range**
-30°C to +90°C

Article number	Thread, male M1	Thread, female M2	Overall height (mm)	Thread length, D (mm)	Outer Ø (mm)	Pieces / PU
SKINDICHT® MR-M ATEX						
52104570	16 x 1,5	12 x 1,5	10,5	5,0	19,0	50
52104571	20 x 1,5	16 x 1,5	13,0	6,0	24,5	50
52104572	25 x 1,5	20 x 1,5	15,0	7,0	30,1	25
52104573	32 x 1,5	25 x 1,5	16,5	8,0	37,2	25
52104574	40 x 1,5	32 x 1,5	16,5	8,0	45,6	10
52104575	50 x 1,5	40 x 1,5	19,5	10,0	55,3	5
52104576	63 x 1,5	50 x 1,5	18,5	8,5	71,3	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® EKU-M



Benefits

- Enables the use of cable glands with larger connection threads than the existing threaded holes
- Assembling with a wrench
- Supporting surface for spanner means scratches on the housing are avoided

Application range

- Machines
- Devices
- Housings

Approvals



Design

- Metric connection thread acc. to EN 50262

Technical data

	Colour delivered Light grey (RAL 7035)
	Material Polyamide, glass fibre-reinforced
	Temperature range -40°C to +100°C

Article number	Thread, male M1	Thread, female M2	SW (mm)	Pieces / PU
SKINDICHT® EKU-M				
52100300	12 x 1.5	16 x 1.5	20	100
52100301	16 x 1.5	20 x 1.5	24	100
52100302	20 x 1.5	25 x 1.5	29	100
52100303	25 x 1.5	32 x 1.5	36	50
52100304	32 x 1.5	40 x 1.5	46	25
52100305	40 x 1.5	50 x 1.5	55	10
52100306	50 x 1.5	63 x 1.5	68	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® ME-M



Benefits

- Enables the use of cable glands with larger connection threads than the existing threaded holes

Application range

- Machines
- Devices
- Housings

Approvals



Design

- Metric connection thread acc. to EN 50262

Technical data

	Upon request with O-ring fitted
	Material Nickel-plated brass
	Temperature range -60°C to +200°C

Article number	Thread, male M1	Thread, female M2	Pieces / PU
SKINDICHT® ME-M			
52104450	12 x 1.5	16 x 1.5	100
52104452	16 x 1.5	20 x 1.5	100
52104454	20 x 1.5	25 x 1.5	100
52104456	25 x 1.5	32 x 1.5	50
52104458	32 x 1.5	40 x 1.5	50
52104460	40 x 1.5	50 x 1.5	25
52104462	50 x 1.5	63 x 1.5	25
SKINDICHT® ME-M hexagon			
52104463	63 x 1.5	75 x 1.5	25

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® ME-M ATEX



■ Benefits

- Enables the use of cable glands with larger connection threads than the existing threaded holes
- With guide notch for O-ring
- Assembling with a wrench

■ Application range

- Equipment group II / Category 2G+1D
- Devices, machines and apparatus
- For mobile applications in offshore and marine industries
- Chemical and petrochemical industry

■ Approvals



■ Design

- Metric connection thread acc. to EN 50262

■ Technical data



Approvals

IBExU03ATEX1010
II 2G EEx e II II 1D IP66/68



Colour delivered

Light grey (RAL 7035)



Material

Body: nickel-plated brass
O-ring: NBR



Temperature range

-30°C to +90°C

Article number	Thread, male M1	Thread, female M2	Overall height (mm)	SW (mm)	Outer thread length (mm)	Outer Ø (mm)	PU
SKINDICHT® ME-M ATEX							
52104580	12 x 1.5	16 x 1.5	17.0	18	5	20.0	50
52104581	16 x 1.5	20 x 1.5	20.0	22	6	24.0	50
52104582	20 x 1.5	25 x 1.5	22.5	27	6.5	30.0	50
52104583	25 x 1.5	32 x 1.5	21.5	34	6.5	37.7	25
52104584	32 x 1.5	40 x 1.5	23.0	42	7	46.0	25
52104585	40 x 1.5	50 x 1.5	26.0	54	8	59.0	25
52104586	50 x 1.5	63 x 1.5	32.0	67	9	73.0	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® MA-M/NPT / SKINDICHT® MA-M/PG



SKINDICHT® MA-M/NPT



SKINDICHT® MA-M/PG

■ **Benefits**

SKINDICHT® MA-M/PG

- Enables the use of PG accessories in metric threads

SKINDICHT® MA-M/NPT

- Enables the use of NPT accessories in metric threads

■ **Application range**

SKINDICHT® MA-M/PG

- Adapter from a metric outer thread to a PG inner thread.
- Machines
- Devices
- Housings

SKINDICHT® MA-M/NPT

- Adapter from a metric outer thread to an NPT inner thread.
- Machines
- Devices
- Housings

■ **Approvals**



■ **Design**

- Metric connection thread acc. to EN 50262

■ **Technical data**



Upon request
with O-ring fitted



Material
Nickel-plated brass

Article number	Thread, male M1	Thread, female PG/NPT	Pieces / PU
SKINDICHT® MA-M / PG			
52104200	16 x 1.5	7	100
52104210	20 x 1.5	9	50
52104220	25 x 1.5	11	50
52104230	25 x 1.5	13,5	50
52104240	25 x 1.5	16	50
52104250	32 x 1.5	16	25
52104260	32 x 1.5	21	25
52104270	40 x 1.5	21	25
52104280	50 x 1.5	29	10
52104290	63 x 1.5	36	10
52104300	63 x 1.5	42	10
SKINDICHT® MA-M / NPT			
54020100	16 x 1.5	1/4	50
54020110	20 x 1.5	1/4	50
54020120	25 x 1.5	1/4	25
54020130	25 x 1.5	3/4	25
54020140	32 x 1.5	1/2	25
54020152	32 x 1.5	1	25
54020153	40 x 1.5	1 1/4	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® ZS-M



■ Benefits

- Enables the use of PG accessories in metric threads
- Assembling with a wrench

■ Application range

- Hexagonal converter from a metric outer thread to a PG inner thread.
- Machines
- Devices
- Housings

■ Approvals



■ Design

- Metric connection thread acc. to EN 50262

■ Note

- SKINDICHT® ZS-M-XL offers a long metric connection thread

■ Technical data



Material

Nickel-plated brass

Article number	Thread, male M1	Thread, female PG	SW (mm)	Outer thread length (mm)	Pieces / PU
SKINDICHT® ZS-M					
52104330	12 x 1.5	7	14	5	100
52104340	16 x 1.5	9	18	5	100
52104010	16 x 1.5	11	20	5	100
52104360	20 x 1.5	11	22	6	100
52104370	20 x 1.5	13.5	22	6	100
52104380	20 x 1.5	16	24	6	50
52104400	25 x 1.5	21	30	7	50
52104410	32 x 1.5	29	40	8	25
52104420	40 x 1.5	36	50	8	10
52104430	50 x 1.5	42	57	9	10
52104440	63 x 1.5	48	66	10	10
SKINDICHT® ZS-M-XL					
52104335	12 x 1.5	7	14	10	100
52104345	16 x 1.5	9	18	10	100
52104365	20 x 1.5	11	22	10	100
52104375	20 x 1.5	13.5	22	10	100
52104385	20 x 1.5	16	24	10	50
52104405	25 x 1.5	21	30	11	50
52104415	32 x 1.5	29	40	13	25
52104425	40 x 1.5	36	50	13	10
52104435	50 x 1.5	42	57	14	10
52104445	63 x 1.5	48	66	14	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® ZSE-M

Benefits

- Enables the use of PG accessories in metric threads
- Assembling with a wrench

Application range

- Hexagonal converter from a metric outer thread to a PG inner thread.
- Machines
- Devices
- Housings

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- SKINDICHT® ZSE-M-XL offers a long metric connection thread

Design

- These converters are used in our cable glands:
- SKINDICHT® SHV-M
- SKINDICHT® SHVE-M
- SKINDICHT® SRE-M
- SKINDICHT® SR-SV-M

Technical data



Material
Body: nickel-plated brass



Article number	Thread, male M 1	Thread, female PG	SW (mm)	Outer thread length (mm)	Pieces / PU
SKINDICHT® ZSE-M					
52106000	12 x 1.5	7	14	5	100
52106010	16 x 1.5	9	18	5	100
52106020	20 x 1.5	11	22	6	100
52106030	20 x 1.5	13.5	22	6	100
52106040	20 x 1.5	16	24	6	50
52104050	20 x 1.5	21	30	8	50
52106050	25 x 1.5	21	30	7	50
52106060	32 x 1.5	29	40	8	25
52106070	40 x 1.5	36	50	8	10
52106080	50 x 1.5	42	57	9	10
52106090	63 x 1.5	48	66	10	10
SKINDICHT® ZSE-M-XL					
52106005	12 x 1.5	7	14	10	100
52106015	16 x 1.5	9	18	10	100
52106025	20 x 1.5	11	22	13	100
52106035	20 x 1.5	13.5	22	13	100
52106045	20 x 1.5	16	24	13	50
52106055	25 x 1.5	21	30	13	50
52106065	32 x 1.5	29	40	13	25

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® D-M




■ **Application range**

- SKINDICHT® D-M compression screws with thread in accordance with EN 50262.

■ **Approvals**



■ **Technical data**

 **Material**
Nickel-plated brass

Article number	Article designation / size	SW (mm)	Pieces / PU
SKINDICHT® D-M			
52100600	12 x 1,5	12	100
52100601	16 x 1,5	16	100
52100602	20 x 1,5	20	100
52100603	25 x 1,5	25	50
52100604	32 x 1,5	32	25
52100605	40 x 1,5	40	25
52100606	50 x 1,5	50	10
52100607	63 x 1,5	65	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® U-M/U-PG




■ **Application range**

- For use between compression screw and adapter.

■ **Approvals**



■ **Technical data**

 **Material**
Steel, galvanized

■ **Note**

- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

Article number	Article designation / size	Outer Ø x inner Ø (mm)	Pieces / PU
SKINDICHT® U-M			
52100610	U-M 12	10.0 x 7.0	300
52100611	U-M 16	14.0 x 10.0	300
52100612	U-M 20	17.9 x 13.9	300
52100613	U-M 25	22.7 x 18.7	200
52100614	U-M 32	29.8 x 26.0	200
52100615	U-M 40	37.8 x 33.3	100
52100616	U-M 50	47.8 x 41.4	100
52100617	U-M 63	60.7 x 53.5	100

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® E-M

Benefits

- One seal for several clamping ranges
- Rings can be individually adapted to various cable diameters

Application range

- Incised sealing ring for SKINDICHT® cable glands

Approvals



Note

- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

Technical data

	Colour delivered Black
	Material CR
	Temperature range -20°C to +80°C



Article number	Article designation / size	Outer Ø x holes (mm)	Thickness (mm)	Pieces / PU
SKINDICHT® E-M				
52100620	E-M 12	10.00 x 5	5.0	250
52100621	E-M 16	13.80 x 3/6/9	5.5	250
52100622	E-M 20	17.60 x 4/7/10/13	6.0	250
52100623	E-M 25	22.60 x 8,5/11,5/14,5/17,5	7.5	100
52100624	E-M 32	29.60 x 16/19/22/25	9.5	100
52100625	E-M 40	37.60 x 23/26/29/32	12.0	50
52100626	E-M 50	47.60 x 30/33/36/39	14.0	50
52100627	E-M 63	60.60 x 36/39/42/45	14.0	50

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® O-Ring Perbunan® metric

Application range

- For sealing the housing reliably to protect against oils, dust, and water at the connection thread of a gland or other similar parts

Approvals



Note

- O-rings with thickness of 1.5 mm are recommended for optimum sealing of the converter SKINDICHT® ZSE-M12/16/20 x 1.5
- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

Technical data

	Colour delivered Black
	Material NBR Ozone and UV-resistant
	Temperature range -30°C to +100°C



Article number	Article designation / size	Inner Ø (mm)	Cable thickness (mm)	Pieces / PU
SKINDICHT® O-Ring Perbunan®				
53102000	O M 12 x 2,0	9.0	2.0	100
53102001	O M 12 x 1,5	9.0	1.5	100
53102010	O M 16 x 2,0	13.0	2.0	100
53102021	O M 20 x 1,5	17.0	1.5	100
53102020	O M 20 x 2,0	17.0	2.0	100
53102030	O M 25 x 2,0	22.0	2.0	100
53102040	O M 32 x 2,0	28.0	2.0	50
53102050	O M 40 x 2,0	36.0	2.0	50
53102060	O M 50 x 2,0	46.0	2.0	25
53102070	O M 63 x 2,0	57.0	2.0	25

Perbunan® is a registered trademark of BAYER AG

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® O-Ring VITON® metric



Application range

- For sealing the housing reliably to protect against oils, acids, and chemicals at the connection thread of a gland or other similar parts under extreme conditions

Approvals



Note

- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

Technical data

RAL	Colour delivered Green
	Material FKM
	Temperature range -20°C to +200°C

Article number	Article designation / size	Inner Ø (mm)	Cable thickness (mm)	Pieces / PU
SKINDICHT® O-ring VITON® metric				
52122000	OV M 12 x 2,0	9.0	2.0	100
52122001	OV M 12 x 1,5	9.0	1.5	100
52122010	OV M 16 x 2,0	13.0	2.0	100
52122021	OV M 20 x 1,5	17.0	1.5	100
52122020	OV M 20 x 2,0	17.0	2.0	100
52122030	OV M 25 x 2,0	22.0	2.0	100
52122040	OV M 32 x 2,0	28.0	2.0	50
52122050	OV M 40 x 2,0	36.0	2.0	50
52122060	OV M 50 x 2,0	46.0	2.0	25
52122070	OV M 63 x 2,0	57.0	2.0	25

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® JT PTFE metric



Benefits

- Resistant to oil, water, alkaline solutions, acids, solvents, etc.
- Suitable for foodstuffs

Application range

- PTFE sealing disks for SKINTOP® and SKINDICHT® cable glands

Approvals



Note

- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

Technical data

RAL	Colour delivered White
	Material PTFE
	Temperature range -120°C to +250°C Short-term: up to +300°C

Article number	Article designation / size	Inner Ø (mm)	Thickness (mm)	Outer Ø (mm)	Pieces / PU
SKINDICHT® JT PTFE					
53801030	JT M 12	12.1	2.0	16.6	100
53801040	JT M 16	16.1	2.0	21.1	100
53801050	JT M 20	20.1	2.0	27.5	100
53801060	JT M 25	25.1	3.0	33.4	50
53801070	JT M 32	32.1	3.0	40.3	50
53801080	JT M 40	40.2	3.0	51.5	25
53801090	JT M 50	50.2	3.0	61.6	25
53801100	JT M 63	63.2	3.0	73.9	25

Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- Pierceable membrane

Application range

- Easy cable feed-through wherever strain relief is not required.

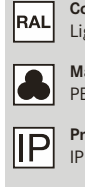
Approvals



Design

- Metric connection thread acc. to EN 50262

Technical data



SKINDICHT® MA-M/NPT



SKINDICHT® MA-M/PG

Article number	Article designation / size	Opening (mm)	SW (mm)	Thread length, D (mm)	Outer Ø (mm)	Pieces / PU
SKINDICHT® WN-M						
52020513	16 x 1,5	5 - 10	15	10.0	20.0	200
52020523	20 x 1,5	8 - 13,5	19	12.0	24.0	200
52020533	25 x 1,5	9 - 16	24	12.0	28.0	100
52020543	32 x 1,5	11 - 22	30	14.0	37.0	50
52020553	40 x 1,5	17 - 34	37	16.0	45.0	50
52020563	50 x 1,5	22 - 35	46	18.0	55.5	20
52020573	63 x 1,5	24 - 43	56	20.0	68.5	10

Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- Can be used as multiple-duct sleeve
- Strain relief

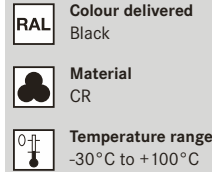
Application range

- Grommets for cables from 4 to 32 mm cable diameter.

Approvals



Technical data



SKINDICHT® DTN

Article number	Article designation / size	Clamping range ØF (mm)	Metal thickness (mm)	Hole in housing Ø (mm)	Sleeve inner Ø (mm)	Pieces / PU
SKINDICHT® DTN						
52105020	DTN 1	4 - 9	2.5	16	9	50
52105030	DTN 2	7 - 12	2.5	19	12	50
52105040	DTN 3	12 - 17,5	2.5	25	18	50
52105050	DTN 4	18 - 23	2.5	32	25	25
52105060	DTN 5	25 - 29	3.0	38	32	25

Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- Protection against sharp or angular housing walls
- Easy to assemble

Application range

- Housings
- Control cabinet manufacturing

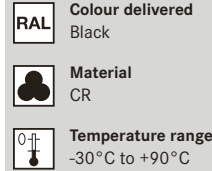
Approvals



Note

- Simply push the grommet into the hole until the groove engages.

Technical data



SKINDICHT® LA

Article number	Article designation / size	Metal thickness (mm)	Sleeve outer Ø (mm)	Hole in housing Ø (mm)	Sleeve inner Ø (mm)	Pieces / PU
SKINDICHT® LA						
61713520	LA 3	1.5 - 2.0	10	7	3	100
61713530	LA 4	1.5 - 2.0	11	8	4	100
61713540	LA 5	1.5 - 2.0	11	7	5	100
61713550	LA 6	1.5 - 2.0	14	9	6	100
61713560	LA 7	1.5 - 2.0	16	12	7	100
61713570	LA 8	1.5 - 2.0	15	11	8	100
61713580	LA 9	1.5 - 2.0	16	11	9	100
61713590	LA 11	1.5 - 2.0	19	14	11	100
61713600	LA 12	1.5 - 2.0	25	18	12	100

Photographs are not to scale and do not represent detailed images of the respective products.

For current information see: www.lappgroup.com

New

SKINMATIC® QUICK Set 1



SKINMATIC® QUICK Set 1

■ Benefits

- Optimum high packing density, easy installation in very tight spaces
- Enormous time and cost saving
- Easy and safe handling using open ratchet system
- 4 sizes (M 12, 16, 20, 25), only one tool

■ Application range

- Efficient assembly ratchet set for SKINTOP® ST(R)-M plastic cable glands.
- Optional SKINMATIC® TORQUE WRENCH with 9x12 mm adapter for use with SKINMATIC® QUICK SET 1
- The SKINMATIC® TORQUE WRENCH can also be used with a standard spanner wrench for 9x12 mm adapter

■ Product features

- Made of high-quality tool steel
- Included: a handy and strong box for storing the ratchet
- 1x R1 - ratchet
- 1x V1 - extension
- 4x open nut for wrench size (SW) 15, 19, 25, 30, suitable for ratchet head R1

Article number	Article designation / size	Width of flat surface (mm)	Pieces / PU
SKINMATIC® QUICK SET 1			
61610000	QUICK SET 1	15, 19, 25, 30	1
SKINMATIC® TORQUE WRENCH			
61610012	SKINMATIC® DMG 2-10 Nm		1
61610013	SKINMATIC® DMG 5-25 Nm		1

Not subjected to RoHS directive.
Photographs are not to scale and do not represent detailed images of the respective products.

New

SKINMATIC® MH Set



SKINMATIC® MH Set

SKINMATIC® MH Gabelschlüssel



Info

- Assembly tool for SKINTOP® gland sizes up to M 110 x 2

■ Benefits

- Fast, secure and damage-free assembly
- Shaped contact surface prevents the spanner from sliding off

■ Application range

- Special tools designed for metric SKINTOP® brass types

■ Product features

- Assembly set manufactured from chromium-plated tool steel

- The SKINMATIC® MH set consists of three special keys:
- SW 16/20 mm (M12/M16)
- SW 24/29 mm (M20/M25)
- SW 36/45 mm (M32/M40)

Article number	Width of flat surface (mm)	Brass gland sizes	Overall length (mm)	PU pieces (set)
SKINMATIC® MH-Set				
61791273	16/20, 24/29, 36/45	M 12 - M 40	200 / 220 / 250	1
SKINMATIC® MH single wrench				
61791267	55	M 50		1
61791268	68	M 63		1
61791269	76	M 63 PLUS		1
61791286	96	M 75		1
61791287	116	M 90		1
61791288	136	M 110		1

Not subjected to RoHS directive.
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX

SKINMATIC® KB-M



SKINMATIC® SB-M



SKINMATIC® GB-M



Application range

SKINMATIC® KB-M

- For simultaneous core drilling and cutting of metric threads. Especially suitable for thin components and sheet metals.

SKINMATIC® SB-M

- For drilling the core-holes of metric threads.

SKINMATIC® GB-M

- For cutting metric threads.

Technical data



Material
SKINMATIC® KB-M
HSSE
SKINMATIC® SB-M
HSS
SKINMATIC® GB-M
HSSE

Article number	Article designation / size	Drill length (mm)	Overall length, C (mm)	Pieces / PU
SKINMATIC® KB-M				
61791274	12 x 1,5	30	130.0	1
61791275	16 x 1,5	35	150.0	1
61791276	20 x 1,5	40	165.0	1
61791277	25 x 1,5	45	185.0	1
SKINMATIC® SB-M				
61791278	32 x 1,5	180	301.0	1
61791279	40 x 1,5	200	349.0	1
61791280	50 x 1,5	220	369.0	1
SKINMATIC® GB-M				
61791282	32 x 1,5	28	150.0	1
61791283	40 x 1,5	28	170.0	1
61791284	50 x 1,5	32	190.0	1

Not subjected to RoHS directive.

Photographs are not to scale and do not represent detailed images of the respective products.

SKINMATIC® mounting tools

SKINMATIC® universal mounting tools

SKINMATIC® RZ



Benefits

- Adjustable for all wrench sizes ranging from 14 to 33 mm
- Assembling after the cables are already inserted
- Ergonomic plastic grips

Product features

- Made of chromium-plated tool steel
- With two expandable clamping ranges (lock positions)
- Small opening (14 - 22 mm): M12 to M16, PG7 to PG11, NPT 3/8"
- Large opening (24 - 33 mm): M20 to M25, PG13.5 to PG21, NPT 1/2" to 3/4"

Application range

- For quick mounting of cable and conduit glands

Article number	Article designation / size	Width of flat surface (mm)	Overall length (mm)	Pieces / PU
SKINMATIC® RZ				
61791260	SKINMATIC® RZ	14 - 33	250.0	1

Not subjected to RoHS directive.

Photographs are not to scale and do not represent detailed images of the respective products.

SKINTOP® NPT



SKINTOP® NPT

Benefits

- Conical NPT thread
- Permanent vibration protection
- Optimum strain relief
- Wide, variable clamping ranges
- Maximum reliability

Application range

- Used in areas where cables and wires need to be safely inserted into housings
- Machine and equipment manufacturing
- Automation technology
- Devices
- Housings

Approvals



- UL File Nr. E79903

Design

- NPT connection thread acc. to ANSI B1.20.2 - 1983

Note

- Refer to SKINTOP® PG accessories for suitable accessories. Note that SKINTOP® GMP-GL counter nut is not compatible with this model.
- 3/8" = PG9
- 1/2" = PG13.5
- 3/4" = PG21
- 1" = PG29

Design

- SKINTOP® STR NPT is equipped with a reduction seal insert to seal cables and wires with small outer diameters.

Technical data

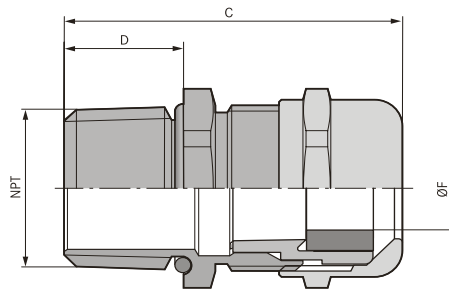
RAL	Colour delivered Silver grey (RAL 7001) Black (RAL 9005), UV-resistant
	Material Body: Polyamide Seal: CR
IP	Protection rating IP 68 - 5 bar
	Temperature range -20°C to +80°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® ST silver grey						
53016010	ST 3/8 NPT"	3,5 - 8	19	43,0	15,0	100
53016030	ST 1/2 NPT"	5 - 12	24	45,0	15,0	100
53016050	ST 3/4 NPT"	13 - 18	33	53,0	15,0	50
53016060	ST 1 NPT"	19 - 25,4	42	60,0	15,0	25
SKINTOP® ST black						
53016210	ST 3/8 NPT"	3,5 - 8	19	43,0	15,0	100
53016230	ST 1/2 NPT"	5 - 12	24	45,0	15,0	100
53016250	ST 3/4 NPT"	13 - 18	33	53,0	15,0	50
53016260	ST 1 NPT"	19 - 25,4	42	60,0	15,0	25
SKINTOP® STR silver grey						
53016110	STR 3/8 NPT"	2 - 6	19	43,0	15,0	100
53016130	STR 1/2 NPT"	4 - 9	24	45,0	15,0	100
53016150	STR 3/4 NPT"	9 - 16	33	53,0	15,0	50
SKINTOP® STR black						
53016310	STR 3/8 NPT"	2 - 6	19	43,0	15,0	100
53016330	STR 1/2 NPT"	4 - 9	24	45,0	15,0	100
53016350	STR 3/4 NPT"	9 - 16	33	53,0	15,0	50
SKINTOP® BS silver grey						
53016610	BS 3/8 NPT"	3,5 - 8	19	82,0	15,0	100
53016630	BS 1/2 NPT"	5 - 12	24	104,0	15,0	100
53016650	BS 3/4 NPT"	13 - 18	33	133,0	15,0	50
SKINTOP® BS black						
53016810	BS 3/8 NPT"	3,5 - 8	19	82,0	15,0	100
53016830	BS 1/2 NPT"	5 - 12	24	104,0	15,0	100
53016850	BS 3/4 NPT"	13 - 18	33	133,0	15,0	50

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX

SKINTOP® MS NPT



SKINTOP® MS NPT

Benefits

- Conical NPT thread
- Maximum reliability
- Optimum strain relief
- Wide, variable clamping ranges

Application range

- In areas where mechanical and chemical stability are critical
- Chemical industry
- Measurement and control technology
- Machine and equipment manufacturing
- Plant engineering

Approvals



- UL File Nr. E79903

Design

- NPT connection thread acc. to ANSI B1.20.2 - 1983

Note

- Refer to SKINTOP® metric accessories for suitable accessories. Note that SKINDICHT® SM-M counter nut is not compatible with this model.
- 1/4" = M12, 3/8" = M16
- 1/2" = M20, 3/4" = M25
- 1" = M32, 1 1/4" = M40
- 1 1/2" = M50, 2" = M63

Design

- SKINTOP® MSR NPT is equipped with a reduction seal insert to seal cables and wires with small outer diameters

Technical data

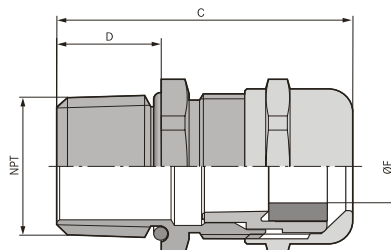
- Material**
Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR
- Protection rating**
IP 68 - 5 bar
- Temperature range**
-30°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-NPT						
53112004	1/4"	3,5 - 7	16	36,0	15,0	100
53112014	3/8"	4,5 - 10	20	39,7	15,0	100
53112024	1/2"	7 - 13	24	42,5	15,0	50
53112034	3/4"	9 - 17	29	44,5	15,0	25
53112044	1"	11 - 21	36	49,0	15,0	25
53112054	1 1/4"	19 - 28	45	57,5	17,0	10
53112064	1 1/2"	27 - 35	54	61,5	17,0	5
53112074	2"	34 - 45	67	63,5	17,0	5
SKINTOP® MSR-NPT						
53112006	1/4"	1 - 5	16	36,0	15,0	100
53112016	3/8"	2 - 7	20	39,7	15,0	100
53112026	1/2"	5 - 70	24	42,5	15,0	50
53112036	3/4"	6 - 13	29	44,5	15,0	25
53112046	1"	7 - 15	36	49,0	15,0	25
53112056	1 1/4"	15 - 23	45	57,5	17,0	10
53112066	1 1/2"	22 - 29	54	61,5	17,0	5
53112076	2"	28 - 39	67	63,5	17,0	5

Photographs are not to scale and do not represent detailed images of the respective products.

New

SKINTOP® MS-SC NPT



SKINTOP® MS-SC NPT

■ **Benefits**

- Highly conductive, flexible EMC contact for clamping various screen diameters
- Low-resistance screen contact, optimum EMC protection
- Also suitable for continuing the cable screen to another connection
- Suitable for cables with and without inner sheath

■ **Application range**

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath

- Automation technology
- Telecommunication
- Measurement and control technology
- Industrial machinery and plant engineering

■ **Approvals**



- UL File Nr. E79903

■ **Design**

- NPT connection thread acc. to ANSI B1.20.2 - 1983

■ **Technical data**

Material
 Body: nickel-plated brass
 Insert: polyamide
 Sealing ring: CR
 O-ring: NBR

IP Protection rating
 IP 68 - 5 bar

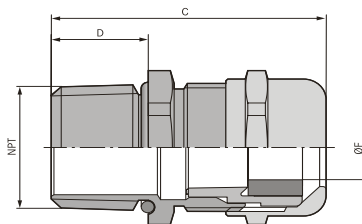
Temperature range
 -30°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-SC NPT						
53112910	3/8"	4,5 - 10	20	39,7	15,0	100
53112920	1/2"	7 - 13	24	42,5	15,0	50
53112930	3/4"	9 - 17	29	44,5	15,0	25
53112940	1"	11 - 21	36	49,0	15,0	25
53112950	1 1/4"	19 - 28	45	57,5	17,0	10
53112960	1 1/2"	27 - 35	54	61,5	17,0	5

Photographs are not to scale and do not represent detailed images of the respective products.

New

SKINTOP® MS-NPT BRUSH



SKINTOP® MS-NPT BRUSH

■ **Benefits**

- Faster, easier screen contact
- Optimum, F8480 low-resistance 360° screen contact
- Faster than any other comparable system
- Uncomplicated and reliable
- Maximum assembly freedom during adjustment

■ **Application range**

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath

- Automation technology
- Conveyor technology
- High-power drives
- Frequency converters

■ **Approvals**



- UL File Nr. E79903

■ **Design**

- NPT connection thread acc. to ANSI B1.20.2 - 1983

■ **Technical data**

Material
 Body: nickel-plated brass
 EMC brush: brass
 Sealing ring: special elastomer
 O-ring: special elastomer

IP Protection rating
 IP 68 - 5 bar

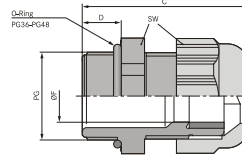
Temperature range
 -30°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-NPT BRUSH						
53112037	3/4"	9 - 17	29	43,0	15,0	10
53112047	1"	11 - 21	36	48,0	15,0	1
53112057	1 1/4"	19 - 28	45	57,5	17,0	1
53112067	1 1/2"	27 - 35	54	59,0	17,0	1
53112077	2"	34 - 45	67	63,0	17,0	1
53112087	2" plus	44 - 55	75	72,0	17,0	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX

SKINTOP® ST / SKINTOP® STR



Benefits

- Various accessories (e.g. multiple sealing inserts)
- High oil-resistance for maximum reliability
- Permanent vibration protection
- Optimum strain relief
- Wide, variable clamping ranges

Application range

SKINTOP® ST

- Used in areas where cables and wires need to be safely inserted into housings
- Machine and equipment manufacturing
- Photovoltaic
- Automation technology

SKINTOP® STR

- With reducing seal insert, to seal cables with smaller outer diameters.

SKINTOP® ST

- Machine and equipment manufacturing
- Photovoltaic
- Automation technology

Approvals



- UL File Nr. E79903

Design

- PG connection thread

Note

- Refer to SKINTOP® PG accessories for suitable accessories
- Counter nut to be used: SKINTOP® GMP-GL

Technical data

Caution
Refer to Appendix T21 for the installation dimensions and torques

Colour delivered
Silver grey (RAL 7001)
Light grey (RAL 7035)
Black (RAL 9005), UV-resistant

Material
Body: Polyamide
Seal: CR

Tests
GGVS: TÜ.EGG.020-95

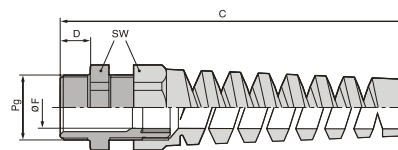
Protection rating
IP 68 - 5 bar

Temperature range
-20 °C to +80 °C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® ST silver grey						
53015000	ST 7	2,5 - 6,5	15	32,0	8,0	100
53015010	ST 9	3,5 - 8	19	36,0	8,0	100
53015020	ST 11	4 - 10	22	38,0	8,0	100
53015030	ST 13,5	6 - 12	24	41,0	9,0	100
53015040	ST 16	9 - 14	27	44,0	10,0	50
53015050	ST 21	13 - 18	33	49,0	11,0	50
53015060	ST 29	14 - 25	42	56,0	11,0	25
53015070	ST 36	24 - 32	53	66,0	13,0	10
53015080	ST 42	35 - 38	60	68,0	13,0	5
53015090	ST 48	39 - 44	65	69,0	14,0	5
SKINTOP® ST black						
53015200	ST 7	2,5 - 6,5	15	32,0	8,0	100
53015210	ST 9	3,5 - 8	19	36,0	8,0	100
53015220	ST 11	4 - 10	22	38,0	8,0	100
53015230	ST 13,5	6 - 12	24	41,0	9,0	100
53015240	ST 16	9 - 14	27	44,0	10,0	50
53015250	ST 21	13 - 18	33	49,0	11,0	50
53015260	ST 29	14 - 25	42	56,0	11,0	25
53015270	ST 36	24 - 32	53	66,0	13,0	10
53015280	ST 42	35 - 38	60	68,0	13,0	5
53015290	ST 48	39 - 44	65	69,0	14,0	5
SKINTOP® ST light grey						
53018000	ST 7	2,5 - 6,5	15	32,0	8,0	100
53018010	ST 9	3,5 - 8	19	36,0	8,0	100
53018020	ST 11	4 - 10	22	38,0	8,0	100
53018030	ST 13,5	6 - 12	24	41,0	9,0	100
53018040	ST 16	9 - 14	27	44,0	10,0	50
53018050	ST 21	13 - 18	33	49,0	11,0	50
53018060	ST 29	14 - 25	42	56,0	11,0	25
53018070	ST 36	24 - 32	53	66,0	13,0	10
53018080	ST 42	35 - 38	60	68,0	13,0	5
53018090	ST 48	39 - 44	65	69,0	14,0	5
SKINTOP® STR silver grey						
53015100	STR 7	1,5 - 5	15	32,0	8,0	100
53015110	STR 9	2 - 6	19	36,0	8,0	100
53015120	STR 11	2 - 7	22	38,0	8,0	100
53015130	STR 13,5	4 - 9	24	41,0	9,0	100
53015140	STR 16	6 - 12	27	44,0	10,0	50
53015150	STR 21	9 - 16	33	49,0	11,0	50
53015160	STR 29	11 - 20	42	56,0	11,0	25
53015170	STR 36	17 - 26	53	66,0	13,0	10
53015180	STR 42	22 - 31	60	68,0	13,0	5
53015190	STR 48	26 - 35	65	69,0	14,0	5
SKINTOP® STR black						
53015300	STR 7	1,5 - 5	15	32,0	8,0	100
53015310	STR 9	2 - 6	19	36,0	8,0	100
53015320	STR 11	2 - 7	22	38,0	8,0	100
53015330	STR 13,5	4 - 9	24	41,0	9,0	100
53015340	STR 16	6 - 12	27	44,0	10,0	50
53015350	STR 21	9 - 16	33	49,0	11,0	50
53015360	STR 29	11 - 20	42	56,0	11,0	25
53015370	STR 36	17 - 26	53	66,0	13,0	10
53015380	STR 42	22 - 31	60	68,0	13,0	5
53015390	STR 48	26 - 35	65	69,0	14,0	5
SKINTOP® STR light grey						
53018100	STR 7	1,5 - 5	15	32,0	8,0	100
53018110	STR 9	2 - 6	19	36,0	8,0	100
53018120	STR 11	2 - 7	22	38,0	8,0	100
53018130	STR 13,5	4 - 9	24	41,0	9,0	100
53018140	STR 16	6 - 12	27	44,0	10,0	50
53018150	STR 21	9 - 16	33	49,0	11,0	50
53018160	STR 29	11 - 20	42	56,0	11,0	25
53018170	STR 36	17 - 26	53	66,0	13,0	10
53018180	STR 42	22 - 31	60	68,0	13,0	5
53018190	STR 48	26 - 35	65	69,0	14,0	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINTOP® BS



SKINTOP® BS

■ **Benefits**

- Reliable bending and anti-kink protection
- Cable conservation
- Functional reliability
- To protect flexible cables

■ **Application range**

- Cables for electrical appliances and machinery that are moved under normal use must be protected against excessive bending as required in accordance with VDE 0730.
- Handheld device
- Robotics industry
- Light and sound applications
- Moving machine parts

■ **Approvals**



- UL File Nr. E79903

■ **Design**

- PG connection thread

■ **Note**

- Refer to SKINTOP® PG accessories for suitable accessories
- Counter nut to be used: SKINTOP® GMP-GL
- Version with smaller insert to seal smaller cable cross-sections, SKINTOP® BSR, is available upon request

■ **Technical data**

Caution
Refer to Appendix T21 for the installation dimensions and torques

RAL Colour delivered
Silver grey (RAL 7001)
Black (RAL 9005), UV-resistant

Material
Body: Polyamide
Seal: CR

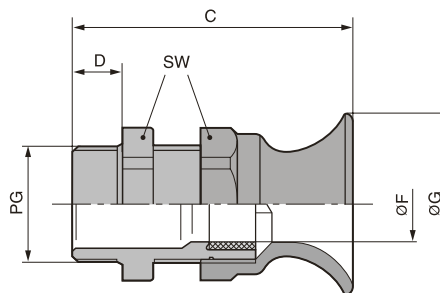
IP Protection rating
IP 68 - 5 bar

Temperature range
-20°C to +80°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® BS silver grey						
53015600	BS 7	2,5 - 6,5	15	62,0	8,0	100
53015610	BS 9	3,5 - 8	19	73,5	8,0	100
53015620	BS 11	4 - 10	22	86,0	8,0	100
53015630	BS 13,5	6 - 12	24	98,0	9,0	50
53015640	BS 16	9 - 14	27	111,5	10,0	25
53015650	BS 21	13 - 18	33	129,0	11,0	25
SKINTOP® BS black						
53015800	BS 7	2,5 - 6,5	15	62,0	8,0	100
53015810	BS 9	3,5 - 8	19	73,5	8,0	100
53015820	BS 11	4 - 10	22	86,0	8,0	100
53015830	BS 13,5	6 - 12	24	98,0	9,0	50
53015840	BS 16	9 - 14	27	111,5	10,0	25
53015850	BS 21	13 - 18	33	129,0	11,0	25

Photographs are not to scale and do not represent detailed images of the respective products.

SKINTOP® BT



SKINTOP® BT

■ **Benefits**

- Reliable bending and anti-kink protection
- Cable conservation
- Functional reliability

■ **Application range**

- Cables for electrical appliances and machinery that are moved under normal use must be protected against excessive bending as required in accordance with VDE 0730.
- Handheld device
- Apparatus construction
- Light and sound applications
- Moving machine parts

■ **Approvals**



■ **Design**

- PG connection thread

■ **Note**

- Refer to SKINTOP® PG accessories for suitable accessories
- Counter nut to be used: SKINTOP® GMP-GL

■ **Technical data**

Caution
Refer to Appendix T21 for the installation dimensions and torques

RAL Colour delivered
Silver grey (RAL 7001)

Material
Body: Polyamide
Seal: CR

IP Protection rating
IP 68 - 5 bar

Temperature range
-20°C to +80°C

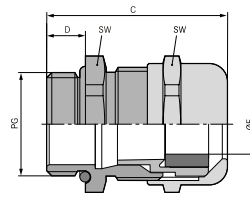
Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® BT silver grey						
53015410	9	3,5 - 8	19	42,9	8,0	100
53015420	11	4 - 10	22	47,7	8,0	100
53015430	13,5	5 - 12	24	52,0	9,0	50
53015440	16	9 - 14	27	55,9	10,0	50
53015450	21	13 - 18	33	64,4	11,0	50

Photographs are not to scale and do not represent detailed images of the respective products.

For current information see: www.lappgroup.com

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

SKINTOP® MS / SKINTOP® MSR



Benefits

SKINTOP® MS

- Maximum reliability
- Optimum strain relief
- Wide, variable clamping ranges

SKINTOP® MSR

- For the benefits, refer to SKINTOP® MS

Application range

SKINTOP® MS

- In areas where mechanical and chemical stability are critical
- Chemical industry
- Measurement and control technology
- Machine and equipment manufacturing
- Plant engineering

SKINTOP® MSR

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals



Design

- PG connection thread

Note

- Counter nut to be used: SKINDICHT® SM
- Refer to SKINTOP® PG accessories for suitable accessories

Technical data



Caution
Refer to Appendix T21 for the installation dimensions and torques



Material
Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR



Protection rating
IP 68 - 5 bar



Temperature range
-30°C to +100°C

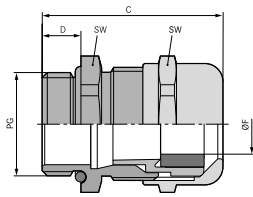
Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS						
52015700	MS 7	2 - 6.5	14	25.0	5.0	100
52015710	MS 9	4 - 8	17	29.0	6.0	100
52015720	MS 11	4 - 10	20	32.0	6.0	50
52015730	MS 13,5	5 - 12	22	34.0	6.5	50
52015740	MS 16	8 - 14	24	35.0	6.5	50
52015750	MS 21	11 - 18	30	40.0	7.0	25
52015760	MS 29	16 - 25	40	48.0	8.0	25
52015765	MS 36	19 - 32	50	62.0	15.0	10
52015766	MS 42	28 - 38	57	62.0	15.0	5
52015767	MS 48	34 - 44	64	62.0	15.0	5
SKINTOP® MSR						
52015770	MSR 7	2 - 5	14	25.0	5.0	100
52015780	MSR 9	2 - 6	17	29.0	6.0	100
52015790	MSR 11	3 - 7	20	32.0	6.0	50
52015800	MSR 13,5	4 - 9	22	34.0	6.5	50
52015810	MSR 16	6 - 13	24	35.0	6.5	50
52015820	MSR 21	8 - 16	30	40.0	7.0	25
52015830	MSR 29	10.5 - 20	40	48.0	8.0	25
52015831	MSR 36	19 - 26	50	62.0	15.0	10
52015832	MSR 42	24 - 31	57	62.0	15.0	5
52015833	MSR 48	28 - 35	64	62.0	15.0	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINTOP® MS-XL / SKINTOP® MSR-XL



SKINTOP® MS-XL



SKINTOP® MSR-XL

■ **Benefits**

SKINTOP® MS-XL

- Especially for thick walls
- Maximum reliability
- Wide, variable clamping ranges
- Optimum strain relief

SKINTOP® MSR-XL

- For the benefits, refer to SKINTOP® MS-XL

■ **Application range**

SKINTOP® MS-XL

- In areas where mechanical and chemical stability are critical
- Chemical industry
- Measurement and control technology
- Machine and equipment manufacturing
- Plant engineering

SKINTOP® MSR-XL

- With reducing seal insert, to seal cables with smaller outer diameters.

■ **Approvals**



■ **Design**

- PG connection thread

■ **Note**

- Counter nut to be used: SKINDICHT® SM
- Refer to SKINTOP® PG accessories for suitable accessories

■ **Technical data**

Caution
Refer to Appendix T21 for the installation dimensions and torques

Material
Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR

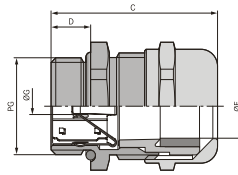
IP
Protection rating
IP 68 - 5 bar

Temperature range
-30°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-XL						
52115700	MS 7 XL	2 - 6.5	14	32.0	12.0	100
52115710	MS 9 XL	4 - 8	17	35.0	12.0	100
52115720	MS 11 XL	4 - 10	20	38.0	12.0	50
52115730	MS 13,5 XL	5 - 12	22	39.5	12.0	50
52115740	MS 16 XL	8 - 14	24	40.5	12.0	50
52115750	MS 21 XL	11 - 18	30	45.0	12.0	25
52115760	MS 29 XL	16 - 25	40	52.0	15.0	25
SKINTOP® MSR-XL						
52115770	MSR 7	2 - 5	14	32.0	12.0	100
52115780	MSR 9	2 - 6	17	35.0	12.0	100
52115790	MSR 11	3 - 7	20	38.0	12.0	50
52115800	MSR 13,5	4 - 9	22	39.5	12.0	50
52115810	MSR 16	6 - 13	24	40.5	12.0	50
52115820	MSR 21	8 - 16	30	45.0	12.0	25
52115830	MSR 29	10.5 - 20	40	52.0	15.0	25

Photographs are not to scale and do not represent detailed images of the respective products.

SKINTOP® MS-SC



SKINTOP® MS-SC

Benefits

- Suitable for cables with and without inner sheath
- Also suitable for continuing the cable screen to another connection
- Low-resistance screen contact, optimum EMC protection
- Highly conductive, flexible EMC contact for clamping various screen diameters
- Few operation steps, easy to assemble

Application range

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath
- Automation technology
- Telecommunication
- Measurement and control technology
- Industrial machinery and plant engineering

Approvals



Design

- PG connection thread

Note

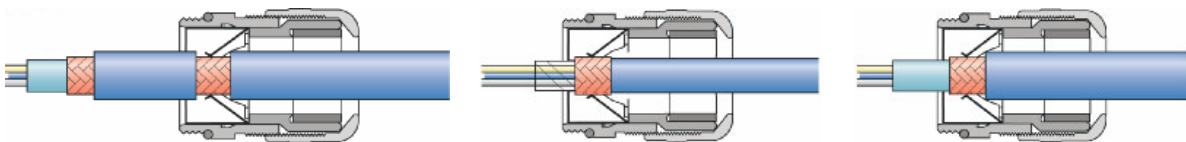
- Refer to SKINTOP® PG accessories for suitable accessories
- EMC counter nut, SKINDICHT® SM nut should be used to ensure optimum contact with painted, anodised or powder-coated housings

Technical data

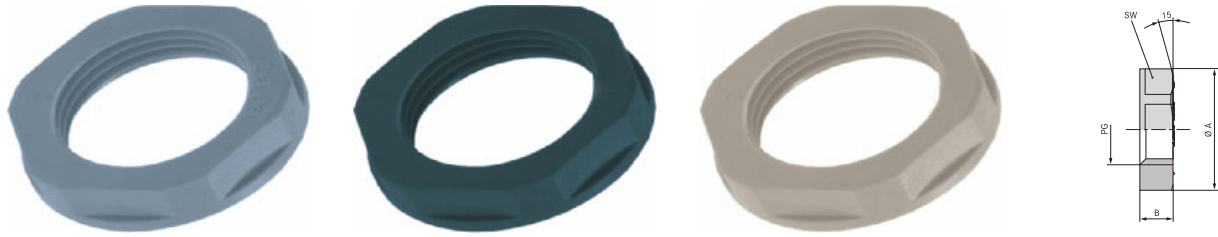
- Caution**
Refer to Appendix T21 for the installation dimensions and torques
- Material**
Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR
- Protection rating**
IP 68
- Temperature range**
-30 °C to +100 °C

Article number	Article designation / size	Clamping range ØF (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-SC				
53112210	MS-SC 9	3 - 8	6.0	50
53112220	MS-SC 11	4 - 10	6.0	50
53112230	MS-SC 13,5	5 - 12	6.5	25
53112240	MS-SC 16	8 - 14	6.5	25
53112250	MS-SC 21	11 - 17,5	7.0	25
53112260	MS-SC 29	16 - 25	8.0	10
53112270	MS-SC 36	19 - 32	15.0	5
SKINTOP® MS-SC XL				
53112310	MS-SC XL 9	3 - 8	12.0	50
53112320	MS-SC XL 11	4 - 10	12.0	50
53112330	MS-SC XL 13,5	5 - 12	12.0	25
53112340	MS-SC XL 16	8 - 14	12.0	25
53112350	MS-SC XL 21	11 - 17,5	12.0	25
53112360	MS-SC XL 29	16 - 25	15.0	10

Photographs are not to scale and do not represent detailed images of the respective products.



SKINTOP® GMP-GL



SKINTOP® GMP-GL

■ Benefits

- Glass fibre-reinforced for maximum mechanical stability
- Supporting surface for spanner means scratches on the housing are avoided

■ Application range

- For locking SKINTOP® cable glands in bore-holes without thread.

■ Approvals



- UL File Nr. E79903

■ Design

- PG connection thread

■ Note

- UL approval only when used with the UL-approved SKINTOP® polyamide cable glands
- Designed for use with SKINTOP® ST(R)

■ Technical data



Upon request
Available without collar
(without surface for assembling tool)



Colour delivered
Silver grey (RAL 7001)
Light grey (RAL 7035)
Black (RAL 9005), UV-resistant



Material
Polyamide, glass fibre-reinforced



Temperature range
-20°C to +100°C

Article number	Article designation / size	SW (mm)	Pieces / PU
SKINTOP® GMP-GL silver grey with collar			
53019000	GMP-GL 7	19	100
53019010	GMP-GL 9	22	100
53019020	GMP-GL 11	24	100
53019030	GMP-GL 13,5	27	100
53019040	GMP-GL 16	30	100
53019050	GMP-GL 21	36	50
53019060	GMP-GL 29	46	50
53019070	GMP-GL 36	60	25
53019080	GMP-GL 42	65	25
53019090	GMP-GL 48	70	25
SKINTOP® GMP-GL black with collar			
53019200	GMP-GL 7	19	100
53019210	GMP-GL 9	22	100
53019220	GMP-GL 11	24	100
53019230	GMP-GL 13,5	27	100
53019240	GMP-GL 16	30	100
53019250	GMP-GL 21	36	50
53019260	GMP-GL 29	46	50
53019270	GMP-GL 36	60	25
53019280	GMP-GL 42	65	25
53019290	GMP-GL 48	70	25
SKINTOP® GMP-GL light grey with collar			
53019001	GMP-GL 7	19	100
53019011	GMP-GL 9	22	100
53019021	GMP-GL 11	24	100
53019031	GMP-GL 13,5	27	100
53019041	GMP-GL 16	30	100
53019051	GMP-GL 21	36	50
53019061	GMP-GL 29	46	50
53019071	GMP-GL 36	60	25
53019081	GMP-GL 42	65	25
53019091	GMP-GL 48	70	25

Photographs are not to scale and do not represent detailed images of the respective products.

SKINTOP® DIX

Benefits

- Easy insertion of several cables into one gland
- Higher packing density allows smaller part construction

Application range

- For use in SKINTOP® cable glands.
- A sealing ring with several holes is used in place of the inner sealing insert.

Approvals



Technical data

RAL	Colour delivered natural
	Material Silicone
IP	Protection rating IP 54
	Temperature range -40°C to +100°C

Note

- IP 68 can be achieved when all openings are closed and all bores are optimally occupied, i.e. when using cables with nominal diameter and/or SKINTOP® DIX-DV sealing plugs



Article number	Article designation / size	PG size	Number of cables x cable Ø	Pieces / PU
SKINTOP® DIX				
53607225	DIX 7225	7	2 x 2.5	100
53607417	DIX 7417	7	4 x 1.7	100
53609230	DIX 9230	9	2 x 3	100
53611225	DIX 11225	11	2 x 2.5	100
53611330	DIX 11330	11	3 x 3	100
53611240	DIX 11240	11	2 x 4	100
53611430	DIX 11430	11	4 x 3	100
53613250	DIX 13250	13.5	2 x 5	100
53613340	DIX 13340	13.5	3 x 4	100
53613440	DIX 13440	13.5	4 x 4	100
53616140	DIX 16140	16	1 x 4	50
53616225	DIX 16225	16	2 x 2.5	50
53616240	DIX 16240	16	2 x 4	50
53616340	DIX 16340	16	3 x 4	50
53616350	DIX 16350	16	3 x 5	50
53616440	DIX 16440	16	4 x 4	50
53616540	DIX 16540	16	5 x 4	50
53616450	DIX 16450	16	4 x 5	50
53616356	DIX 16356	16	3 x 5.6	50
53616260	DIX 16260	16	2 x 6	50
53616360	DIX 16360	16	3 x 6	50
53621550	DIX 21550	21	5 x 5	50
53621460	DIX 21460	21	4 x 6	50
53621640	DIX 21640	21	6 x 4	50
53621270	DIX 21270	21	2 x 7	50
53621370	DIX 21370	21	3 x 7	50
53621280	DIX 21280	21	2 x 8	50
53621380	DIX 21380	21	3 x 8	50
53629556	DIX 29556	29	5 x 5.6	50
53629470	DIX 29470	29	4 x 7	50
53629570	DIX 29570	29	5 x 7	50
53629480	DIX 29480	29	4 x 8	50
53629290	DIX 29290	29	2 x 9	50
53629390	DIX 29390	29	3 x 9	50
53629490	DIX 29490	29	4 x 9	50
53629675	DIX 29675	29	6 x 7.5	50

Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- Optimal seal when using AS-I bus cables
- Strain relief

Application range

- These seals can be used instead of our standard seals in the SKINTOP® cable glands.
- Control cabinets
- Control panels
- Office applications

Approvals



Technical data

RAL	Colour delivered Black (RAL 9005)
	Material NBR
IP	Protection rating IP 54
	Temperature range -40°C to +100°C

Note

- IP 68 can be achieved if the hole is optimally occupied, i.e. when using standard AS-I cables

Design

- Precise cut for AS-I bus cables

SKINTOP® DIX-AUTOMATION



Article number	Article designation / size	Pieces / PU
SKINTOP® DIX ASI		
53611000	DIX ASI 11	50

Photographs are not to scale and do not represent detailed images of the respective products.

SKINTOP® DIX-DV / SKINTOP® SD / SKINTOP® DV



SKINTOP® DIX-DV



SKINTOP® SD



SKINTOP® DV

■ **Benefits**

SKINTOP® DIX-DV

- Prevents water and dust penetrating into unused bore holes of SKINTOP® DIX-M multiple sealing inserts

SKINTOP® SD

- Prevents dust and dirt from getting into the housing

SKINTOP® DV

- Prevents humidity from seeping into the housing

■ **Application range**

SKINTOP® DIX-DV

- For inserting into unoccupied holes of the SKINTOP® DIX-M multiple sealing inserts, to ensure protection class.

SKINTOP® SD

- This dust protector can be placed under the cap nut of the SKINTOP® cable glands.
- Preparations
- Protection of unused connection points

SKINTOP® DV

- These seals are placed into the sealing ring of the SKINTOP® cable glands.
- Preparations
- Protection of unused connection points

■ **Approvals**



■ **Note**

SKINTOP® DIX-DV

- When assembled professionally and properly, the protection class of IP 68 can be reached
- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

SKINTOP® SD

- Easy to handle, without disassembly - push cable through
- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

SKINTOP® DV

- When assembled professionally and properly, the protection class of IP 68 can be reached
- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

■ **Technical data**

RAL Colour delivered
SKINTOP® DIX-DV natural
SKINTOP® SD Black
SKINTOP® DV Black

Material
SKINTOP® DIX-DV Polyamide
SKINTOP® SD PE foam
SKINTOP® DV CR

Article number	Article designation / size	ØF mm	Height (mm)	Pieces / PU
SKINTOP® DIX-DV				
53100055	DIX-DV 5,5 x 11	5.5	11	100
53100003	DIX-DV 3 x 9	3.0	9	100
53100004	DIX-DV 4 x 9	4.0	9	100
53100005	DIX-DV 5 x 11	5.0	11	100
53100006	DIX-DV 6 x 14	6.0	14	100
53100007	DIX-DV 7 x 14	7.0	14	100
53100008	DIX-DV 8 x 14	8.0	14	100
53100009	DIX-DV 9 x 14	9.0	14	100
SKINTOP® SD				
52025235	SD 7	10.5	2	500
52025240	SD 9	13.5	2	500
52025250	SD 11	17.0	2	250
52025260	SD 13,5	18.5	2	250
52025270	SD 16	20.5	2	250
52025280	SD 21	26.0	2	100
52025290	SD 29	34.5	2	100
52025291	SD 36	44.5	2	100
SKINTOP® DV				
53800640	DV 7	7.0	6.5	500
53800641	DV 9	8.5	7.5	500
53800579	DV 11	10.5	8.5	250
53800583	DV 13,5	12.5	8.5	250
53800642	DV 16	14.5	9	250
53800643	DV 21	18.5	11	100

Photographs are not to scale and do not represent detailed images of the respective products.

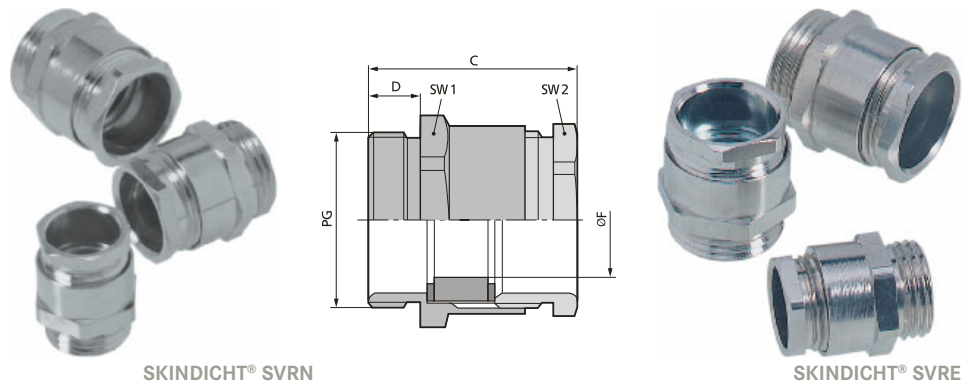
■ **Accessories**

SKINTOP® DIX-DV

- SKINTOP® DIX-M refer to page 672

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

SKINDICHT® SVRN / SKINDICHT® SVRE



Benefits

SKINDICHT® SVRN

- High mechanical stability
- Optimum strain relief

SKINDICHT® SVRE

- With incised sealing ring for adjustment to several cable diameters
- Fewer sizes need to be kept in stock

Application range

SKINDICHT® SVRN

- Brass cable gland with hexagonal fitting, for fast assembly with a flat spanner.

SKINDICHT® SVRE

- Brass cable gland with hexagonal fitting and variable incised sealing ring.

Approvals



Design

- PG connection thread

Note

SKINDICHT® SVRN

- Counter nut to be used: SKINDICHT® SM

SKINDICHT® SVRE

- Refer to SKINDICHT® EV for additional accessories
- Counter nut to be used: SKINDICHT® SM

Technical data

Caution
The installation dimensions can be found in appendix T21

Upon request
SKINDICHT® SVRE
Available with long connection thread
Available with PG 11 to 36 with VITON® incised ring

Material
SKINDICHT® SVRN
Body: nickel-plated brass
Sealing ring: CR
SKINDICHT® SVRE
Body: nickel-plated brass
Incised seal: CR

Protection rating
IP 54

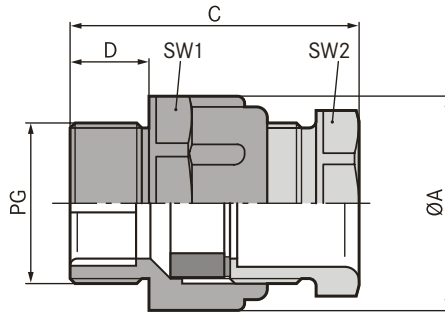
Temperature range
SKINDICHT® SVRN
-20 °C to +100 °C
SKINDICHT® SVRE
-20 °C to +80 °C

Article number	Article designation / size	Incised sealing ring ØF (mm)	PG size	Clamping range (mm)	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SVRN								
52000210	SVRN 7005/N	-	7	5	14 / 13	20.6	5.0	100
52020300	SVRN 7006/N	-	7	6	14 / 13	20.6	5.0	100
52020310	SVRN 7007/N	-	7	7	14 / 13	20.6	5.0	100
52020320	SVRN 9007/N	-	9	7	17 / 15	22.6	6.0	100
52020330	SVRN 9008/N	-	9	8	17 / 15	22.6	6.0	100
52000220	SVRN 9009/N	-	9	9	17 / 15	22.6	6.0	100
52020341	SVRN 11010/N	-	11	10	20 / 18	23.6	6.0	50
52000230	SVRN 11011/N	-	11	11	20 / 18	23.6	6.0	50
52000240	SVRN 13011/N	-	13.5	11	22 / 20	26.1	6.5	50
52000241	SVRN 13012/N	-	13.5	12	22 / 20	26.1	6.5	50
52000250	SVRN 16013/N	-	16	13	24 / 22	27.1	6.5	50
52000251	SVRN 16014/N	-	16	14	24 / 22	27.1	6.5	50
52000260	SVRN 21018/N	-	21	18	30 / 28	29.6	7.0	50
52000270	SVRN 29027/N	-	29	27	40 / 37	32.6	8.0	50
52000280	SVRN 36034/N	-	36	34	50 / 47	38.6	9.0	20
SKINDICHT® SVRE								
52005540	SVRE 9	5/8	-	-	17 / 15	22.6	6.0	100
52000310	SVRE 11	7/10/12.5	-	-	20 / 18	22.6	6.0	50
52000320	SVRE 13,5	7/10.5/13/16	-	-	22 / 20	26.1	6.5	50
52000330	SVRE 16	8/10.5/13.5/16	-	-	24 / 22	27.1	6.5	50
52000340	SVRE 21	11/15/18/20	-	-	30 / 28	29.6	7.0	50
52000350	SVRE 29	19/23/27/31	-	-	40 / 37	32.6	8.0	50
52000360	SVRE 36	25/28/31/35	-	-	50 / 47	38.6	9.0	20
52005550	SVRE 42	35.5/39/42.5/46	-	-	57 / 54	43.6	10.0	10
52005560	SVRE 48	40.5/44/47/50.5	-	-	64 / 60	45.1	10.0	10

Photographs are not to scale and do not represent detailed images of the respective products.
Viton® is a registered trademark of DuPont de Nemours

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SKINDICHT® SVFK



SKINDICHT® SVFK

Benefits

- Economical type
- Lateral sealing lips fit automatically around various cable dimensions
- Cable-specific seal dimensions are no longer necessary
- Tolerance
- Large opening allows clamping of up to two flat cables

Application range

- For inserting flat cables.
- Conveyor systems
- Pumps
- Lifts
- Control cabinet manufacturing

Approvals



Design

- PG connection thread

Note

- Counter nut to be used: SKINDICHT® GMK
- For suitable flat cables, refer to ÖLFLEX® LIFT F for indoor applications or ÖLFLEX® CRANE F for outdoor applications

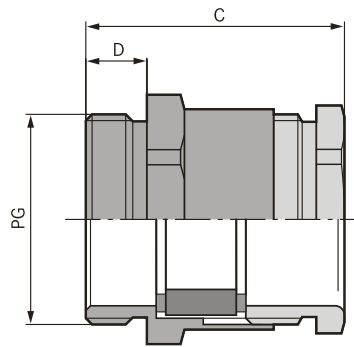
Technical data

- Caution**
The installation dimensions can be found in appendix T21
- Colour delivered**
Light grey (RAL 7035)
- Material**
Body: Polystyrene
Special sealing insert: CR
- Protection rating**
IP 54
- Temperature range**
-20°C to +60°C

Article number	Article designation / size	Min./max. flat cable width	Min./max. cable thickness (mm)	SW 1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SVFK							
52005470	SVFK 16	-- 15.0	-- 5.0	27 / 23	39.5	10.0	25
52005680	SVFK 21	10.0 - 20.5	3.0 - 8.0	32 / 30	43.0	11.0	25
52005690	SVFK 29	15.0 - 27.0	4.0 - 11.5	42 / 41	45.0	11.0	25
52005700	SVFK 36	25.0 - 34.0	4.0 - 11.5	53 / 50	51.0	13.0	10
52005710	SVFK 42	30.0 - 40.0	5.0 - 12.0	60 / 55	54.0	13.0	5
52005720	SVFK 48	35.0 - 45.0	5.0 - 12.0	65 / 60	55.0	15.0	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SVF



SKINDICHT® SVF

Benefits

- High mechanical stability
- Lateral sealing lips fit automatically around various cable dimensions
- Optimum strain relief
- Large opening allows clamping of up to two flat cables

Application range

- For inserting flat cables.
- Conveyor systems
- Pumps
- Lifts
- Control cabinet manufacturing

Approvals



Design

- PG connection thread

Note

- For suitable flat cables, refer to ÖLFLEX® LIFT F for indoor applications or ÖLFLEX® CRANE F for outdoor applications
- Counter nut to be used: SKINDICHT® SM

Technical data

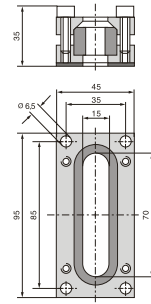
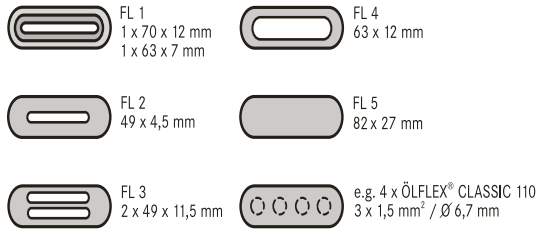
- Caution**
The installation dimensions can be found in appendix T21
- Upon request**
Available with long connection thread
- Material**
Body: nickel-plated brass
Special sealing insert: CR
- Protection rating**
IP 54
- Temperature range**
-20 °C to +100 °C

Article number	Article designation / size	Min./max. flat cable width	Min./max. cable thickness (mm)	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SVF							
52005480	PG 16	-- 16.0	-- 5.0	24 / 22	27.5	6.5	25
52005490	PG 21	9.0 - 21.0	3.0 - 8.0	30 / 28	30.0	7.0	25
52005500	PG 29	14.0 - 30.0	4.0 - 11.5	40 / 37	31.5	8.0	10
52005510	PG36	24.0 - 40.0	4.0 - 11.5	50 / 47	36.0	9.0	10
52005520	PG 42	29.0 - 45.0	5.0 - 12.0	57 / 54	40.0	10.0	5
52005530	PG 48	34.0 - 50.0	5.0 - 12.0	64 / 60	41.5	10.0	5

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SKINDICHT® FL



SKINDICHT® FL

Benefits

- The seal profiles enable many problems to be solved
- Several flat and round cables can be fed through at the same time
- Through the internal conical contour in the upper part of the housing, the sealing inserts are pressed onto the cable

Application range

- Cable flange that can be used universally, mainly for large flat cables.
- Lifts
- Conveyor systems
- Crane and conveying machinery
- Power chains

Approvals



Note

- When assembled professionally and properly, the protection class of IP 65 can be reached
- For suitable flat cables, refer to ÖLFLEX® LIFT F for indoor applications or ÖLFLEX® CRANE F for outdoor applications

Technical data

Material
 Body: aluminium, special untreated alloy
 Screws and spring washers: zinc-plated steel
 Seal: NBR

Protection rating
 IP 65

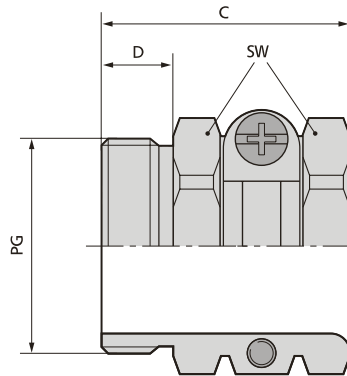
Temperature range
 -20°C to +100°C

Article number	Article designation / size	Cable pass length x width in mm	Dimensions: L x W x H (mm)	Pieces / PU
SKINDICHT® FL				
52008010	FL 1	70 x 15 + 63 x 7	45 x 35 x 95	1
52008020	FL 2	49 x 4,5	45 x 35 x 95	1
52008030	FL 3	49 x 4,5 + 49 x 4,5 (49 x 11,5)	45 x 35 x 95	1
52008040	FL 4	63 x 12,0 (+0,2)	45 x 35 x 95	1
52008050	FL 5	70 x 15	45 x 35 x 95	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

SKINDICHT® SH



SKINDICHT® SH

Benefits

- Seawater-resistant
- Anti-magnetic
- Corrosion-resistant
- Stable and safe strain relief

Application range

- Extremely robust and solid strain relief cable gland.
- Building sites
- Plant engineering
- Electric motor manufacturing

Approvals



Design

- PG connection thread

Note

- Counter nut to be used: SKINDICHT® SM

Technical data

Caution
The installation dimensions can be found in appendix T21

Upon request
Available with long connection thread

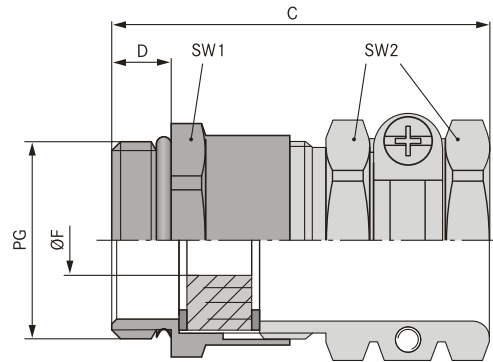
Material
Body: nickel-plated brass

Protection rating
IP 20

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Max. fitting size for installation (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SH							
52000830	SH 7	8 - 10	15	22	17,5	5,5	50
52000840	SH 9	10 - 12,5	17	25	20,5	6,0	50
52000850	SH 11	11 - 15	20	28	21,5	6,0	50
52000860	SH 13,5	14 - 16,5	22	32	24,0	7,5	25
52000870	SH 16	15 - 18	24	35	26,0	7,5	25
52000880	SH 21	18 - 23,5	30	46	29,0	8,0	25
52000890	SH 29	23 - 31	41	58	33,0	8,0	10
52000900	SH 36	29 - 40,5	50	70	36,5	9,5	10
52000910	SH 42	34 - 45	57	78	38,0	10,0	5
52000920	SH 48	39 - 50	64	86	39,5	11,5	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SHZ



SKINDICHT® SHZ

■ **Benefits**

- With incised sealing ring for adjustment to several cable diameters
- High strain relief
- Robust
- For cables with large outer diameters

■ **Application range**

- Compact brass cable gland for reliable strain relief, solid, for large cable diameters.

■ **Approvals**



■ **Design**

- PG connection thread

■ **Note**

- SKINDICHT® SHZ-XL is similar to the SKINDICHT® SHZ, but has an extended connection thread for thick walls
- Refer to SKINDICHT® EV for additional accessories
- Counter nut to be used: SKINDICHT® SM

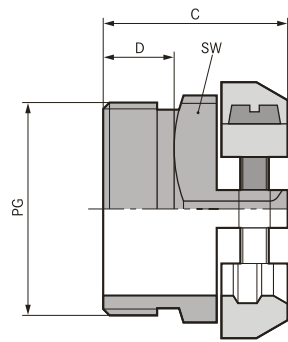
■ **Technical data**

- Caution**
The installation dimensions can be found in appendix T21
- Material**
Body: nickel-plated brass
Sealing: CR
O-ring: NBR
- Protection rating**
IP 55
- Temperature range**
-20°C to +80°C

Article number	Article designation / size	Clamping range ØF (mm)	Max. fitting size for installation (mm)	SW1 / SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SHZ							
52005590	SHZ 7	5 - 6	21	14 / 15	30.0	5.0	50
52005600	SHZ 9	7,5 - 8,5	25	17 / 17	34.0	6.0	50
52000930	SHZ 11	9,5 - 12	28	20 / 20	35.0	6.0	25
52000940	SHZ 13,5	12,5 - 14	32	22 / 22	40.0	6.5	25
52000950	SHZ 16	13,5 - 16	35	24 / 24	42.0	6.5	25
52000960	SHZ 21	15,5 - 21	46	30 / 30	47.0	7.0	25
52000970	SHZ 29	21,5 - 27,5	58	40 / 41	53.0	8.0	10
52000980	SHZ 36	27 - 34	70	50 / 50	61.0	9.0	10
52005610	SHZ 42	34 - 43	78	57 / 57	66.0	10.0	5
52005620	SHZ 48	38 - 48	86	64 / 64	68.0	10.0	5
SKINDICHT® SHZ-XL							
52023716	SHZ 7	5 - 6	21	14 / 15	40.0	10.0	50
52023717	SHZ 9	7,5 - 8,5	25	17 / 17	43.0	10.0	50
52023718	SHZ 11	9,5 - 12	28	20 / 20	44.0	10.0	25
52023719	SHZ 13,5	12,5 - 14	32	22 / 22	48,5	10.0	25
52023720	SHZ 16	13,5 - 16	35	24 / 24	50,5	10.0	25
52024840	SHZ 21	15,5 - 21	46	30 / 30	55.0	11.0	25
52025530	SHZ 29	21,5 - 27,5	58	40 / 41	60.0	13.0	10
52023721	SHZ 36	27 - 34	70	50 / 50	67.0	13.0	10
52023722	SHZ 42	34 - 43	78	57 / 57	71.0	14.0	5
52023723	SHZ 48	38 - 48	86	64 / 64	73.0	14.0	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SK



SKINDICHT® SK

Benefits

- Reliable strain relief
- Wide clamping range

Application range

- Cable gland with two solid brass saddle clamps
- Connectors
- Switches
- Control panels

Approvals



Design

- PG connection thread

Note

- Counter nut to be used: SKINDICHT® SM

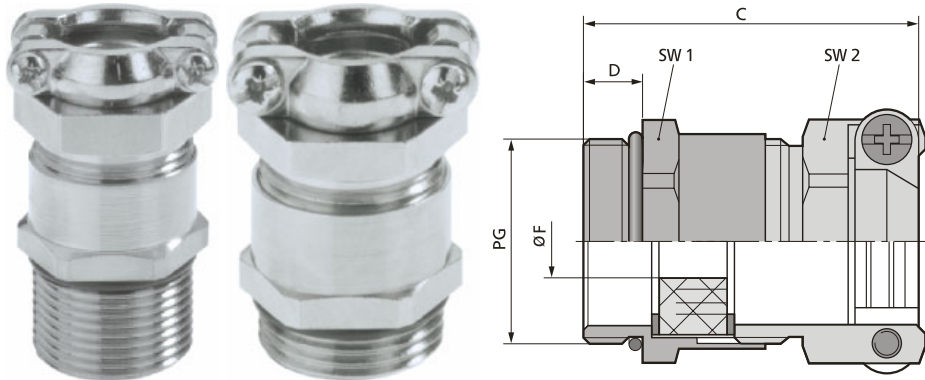
Technical data

- Caution**
The installation dimensions can be found in appendix T21
- Upon request**
Available with long connection thread
- Material**
Body: nickel-plated brass
- Protection rating**
IP 20

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Max. fitting size for installation (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SK							
52004230	SK 9	6 - 12	19	24	16.5	6.0	50
52004240	SK 11	7 - 15	21	27	16.5	6.0	50
52004250	SK 13,5	12 - 16,5	22	30	18.5	7.5	25
52004260	SK 16	13 - 18	24	33	19.0	7.5	25
52004270	SK 21	15 - 23	30	42	22.5	8.0	25
51712740	SK 29	20 - 31	41	58	26.0	8.0	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SKZ



SKINDICHT® SKZ

■ **Benefits**

- With incised sealing ring for adjustment to several cable diameters
- High strain relief
- High mechanical stability

■ **Application range**

- Saddle clamp strain relief gland for harsh application conditions.
- Building sites
- Plant engineering
- Electric motor manufacturing

■ **Approvals**



■ **Design**

- PG connection thread

■ **Note**

- SKINDICHT® SKZ-XL is similar to the SKINDICHT® SKZ, but has an extended connection thread for thick walls
- Counter nut to be used: SKINDICHT® SM
- Refer to SKINDICHT® EV for additional accessories

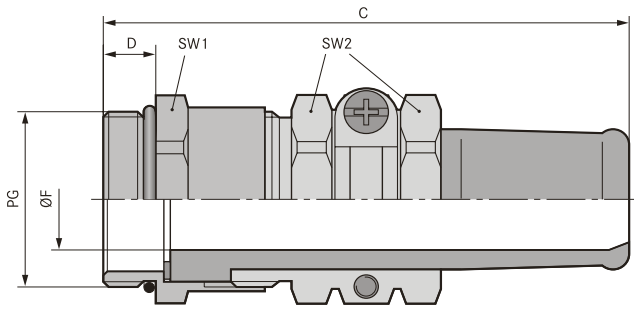
■ **Technical data**

- Caution**
The installation dimensions can be found in appendix T21
- Material**
Body: nickel-plated brass
Incised sealing ring: CR
O-ring: NBR
- Protection rating**
IP 55
- Temperature range**
-20°C to +80°C

Article number	Article designation / size	Clamping range ØF (mm)	Max. fitting size for installation (mm)	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SKZ							
52004280	SKZ 9	6 - 8,5	24	17 / 17	30,0	6,0	50
52004290	SKZ 11	8 - 12	27	20 / 21	30,0	6,0	50
52004300	SKZ 13,5	12 - 14	30	22 / 22	34,0	6,5	25
52004310	SKZ 16	13 - 16	33	24 / 24	35,0	6,5	25
52004320	SKZ 21	15 - 21	42	30 / 30	41,0	7,0	25
52005570	SKZ 29	20 - 27,5	58	40 / 41	46,0	8,0	10
SKINDICHT® SKZ-XL							
52005575	SKZ 9	6 - 8,5	24	17 / 17	39,0	15,0	50
52005576	SKZ 11	8 - 12	27	20 / 21	39,0	15,0	50
52005577	SKZ 13,5	12 - 14	30	22 / 22	42,5	15,0	25
54000043	SKZ 16	13 - 16	33	24 / 24	43,5	15,0	25
54000011	SKZ 21	15 - 21	42	30 / 30	49,0	15,0	25
54000098	SKZ 29	20 - 27,5	58	40 / 41	53,0	15,0	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SR



SKINDICHT® SR

Benefits

- Reliable bending and anti-kink protection
- High strain relief
- Robust
- For cables with large outer diameters
- High degree of protection

Application range

- Cables for electrical appliances and machinery that are moved under normal use must be protected against excessive bending as required in accordance with VDE 0730.
- Handheld device
- Portable equipment
- Building sites
- Moving machine parts

Approvals



Design

- PG connection thread

Note

- Counter nut to be used: SKINDICHT® SM
- For EMC version, refer to SKINDICHT® SRE

Technical data

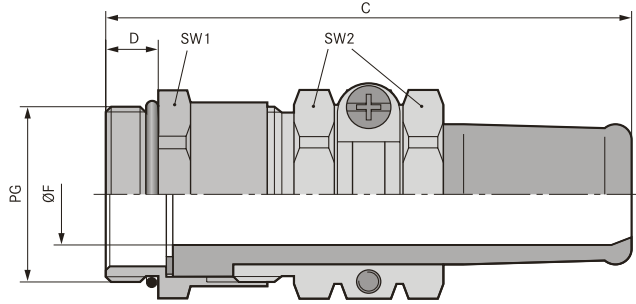
- Caution**
The installation dimensions can be found in appendix T21
- Upon request**
Available with long connection thread
- Material**
Body: nickel-plated brass
O-ring: NBR
Anti-kink protection: CR
- Protection rating**
IP 65
- Temperature range**
-20 °C to +80 °C

Article number	Article designation / size	Clamping range ØF (mm)	Max. fitting size for installation (mm)	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SR							
52000990	SR 07/05	3,5 - 5	23	14 / 15	50.0	5.0	50
52001000	SR 09/07	5,5 - 7	25	17 / 17	52.0	6.0	50
52001010	SR 11/07	5,5 - 7	28	20 / 20	56.0	6.0	25
52001020	SR 11/09	7,5 - 9	28	20 / 20	56.0	6.0	25
52001030	SR 13/09	7,5 - 9	32	22 / 22	62.0	6.5	25
52001040	SR 13/11	9 - 11	32	22 / 22	62.0	6.5	25
52001050	SR 13/13	11 - 13	32	22 / 22	62.0	6.5	25
52001060	SR 16/13	11,5 - 13	35	24 / 24	67.0	6.5	25
52001070	SR 16/15	13 - 15	35	24 / 24	67.0	6.5	25
52001080	SR 21/15	13,5 - 15	46	30 / 30	79.0	7.0	25
52001090	SR 21/17	15 - 17	46	30 / 30	79.0	7.0	25
52001100	SR 21/19	17 - 19	46	30 / 30	79.0	7.0	25
52001110	SR 21/20	18 - 20	46	30 / 30	79.0	7.0	25
52001120	SR 29/20	18 - 20	59	40 / 41	91.0	8.0	10
52001130	SR 29/23	21 - 23	59	40 / 41	91.0	8.0	10
52001140	SR 29/25	23 - 25	59	40 / 41	91.0	8.0	10
52001150	SR 36/26	23 - 26	70	50 / 50	110.0	9.0	5
52001160	SR 36/30	27 - 30	70	50 / 50	110.0	9.0	5
52001170	SR 36/33	30 - 33	70	50 / 50	110.0	9.0	5
52001180	SR 36/35	32 - 35	70	50 / 50	110.0	9.0	5
52001190	SR 42/35	32 - 35	75	57 / 57	114.0	10.0	5
52001200	SR 42/38	35 - 38	75	57 / 57	114.0	10.0	5
52001210	SR 42/40	36 - 40	75	57 / 57	114.0	10.0	5
52001220	SR 48/40	36 - 40	83	64 / 64	119.0	10.0	1
52001230	SR 48/44	40 - 44	83	64 / 64	119.0	10.0	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SKINDICHT® SR-SV



SKINDICHT® SR-SV

■ **Benefits**

- For high temperatures
- Resistant to oils, solvents, acids and chemicals
- Seawater-resistant
- High strain relief
- Robust

■ **Application range**

- Special cable gland with VITON® anti-kink sleeve. Our own reinforced acid-resistant VITON® receptacle does not show any effects of aging even after an extended period of use at a temperature of +165°C.
- Machine and turbine manufacturing
- Power plant engineering
- Laboratory

■ **Approvals**



■ **Design**

- PG connection thread

■ **Note**

- Counter nut to be used: SKINDICHT® SM
- EMC version is available upon request

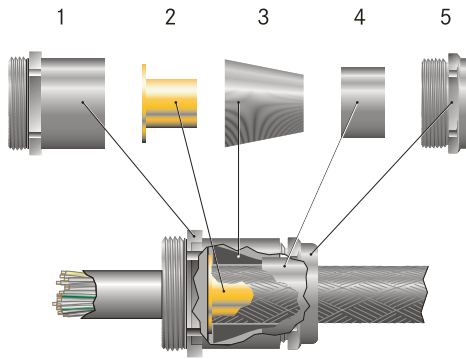
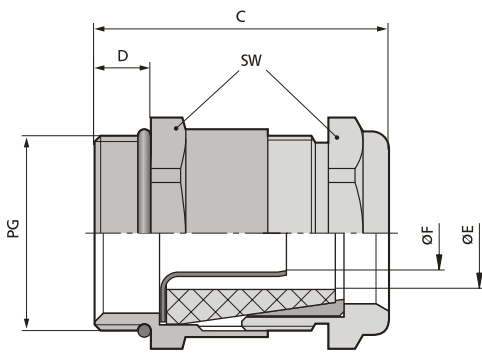
■ **Technical data**

- Caution**
The installation dimensions can be found in appendix T21
- Upon request**
Available with long connection thread
- Material**
Body: nickel-plated brass
O-ring: FKM
Anti-kink protection: FKM
- Protection rating**
IP 65
- Temperature range**
-15°C to +165°C

Article number	Article designation / size	Clamping range ØF (mm)	Max. fitting size for installation (mm)	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SR-SV							
52023620	SR-SV 11/07	5,5 - 7	28	20 / 20	56,0	6,0	25
52023621	SR-SV 11/09	7,5 - 9	28	20 / 20	56,0	6,0	25
52023622	SR-SV 13/09	7,5 - 9	32	22 / 22	62,0	6,5	25
52023623	SR-SV 13/11	9 - 11	32	22 / 22	62,0	6,5	25
52023624	SR-SV 13/13	11 - 13	32	22 / 22	62,0	6,5	25
52023625	SR-SV 16/13	11,5 - 13	35	24 / 24	67,0	6,5	10
52023626	SR-SV 16/15	13 - 15	35	24 / 24	67,0	6,5	10
52023627	SR-SV 21/15	13,5 - 15	40	30 / 30	79,0	7,0	10
52023628	SR-SV 21/17	15 - 17	46	30 / 30	79,0	7,0	10
52023629	SR-SV 21/19	17 - 19	46	30 / 30	79,0	7,0	10

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SHVE



SKINDICHT® SHVE

Benefits

- Optimum, F8480 low-resistance 360° screen contact
- High degree of protection
- High strain relief

Application range

- Earthing gland, for applications where electrical interference fields can occur.
- Medical engineering
- Frequency converters
- Airports
- Measurement and control technology

Approvals



Design

- 1 fitting
- 2 earth sleeves
- 3 sealing cones
- 4 cone, brass
- 5 compression screws

Note

- Counter nut to be used: SKINDICHT® SM
- EMC counter nut, SKINDICHT® SM nut should be used to ensure optimum contact with painted, anodised or powder-coated housings
- Example order identification:
SHVE 13.5 / 9 / 9 / 5
13.5 = PG thread compression screw
9 = PG connection thread
9 = Clear width of sealing cone
5 = Clear width earthing sleeve

Technical data

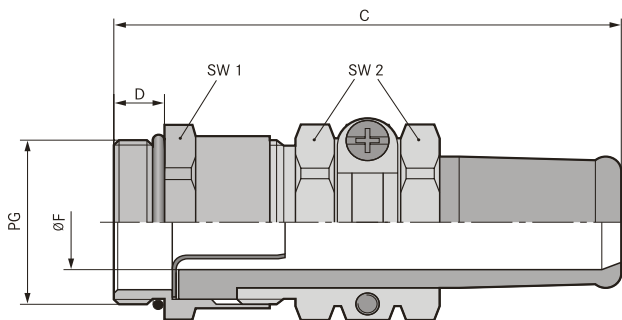
- Caution**
The installation dimensions can be found in appendix T21
- Material**
Body: nickel-plated
Earthing sleeve: blank brass
Special sealing cone: CR
O-ring: NBR
- Protection rating**
IP 68 - 10 bar
- Temperature range**
-20°C to +80°C

Article number	Article designation / size	Outer sheath Ø, min./max. (mm)	Min./max. inner sheath Ø (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SHVE							
52010400	9/9/6/3,2	4.0 / 5,8	2,2 / 3,2	17	28,5	6,0	25
52010405	9/9/7/3,2	5.0 / 6,8	2,2 / 3,2	17	28,5	6,0	25
52010415	9/9/6/3,6	4.0 / 5,8	2,6 / 3,6	17	28,5	6,0	25
52010420	9/9/7/3,6	5.0 / 6,8	2,6 / 3,6	17	28,5	6,0	25
52010440	11/11/7/4,5	5.0 / 6,8	3,5 / 4,5	20	31,0	6,0	25
52010450	11/11/9/4,5	6,8 / 8,8	3,5 / 4,5	20	31,0	6,0	25
52010460	13,5/9/9/5	6,8 / 8,8	3,5 / 5,0	22	32,5	5,5	25
52010490	13,5/11/9/5	6,8 / 8,8	3,5 / 5,0	22	32,5	5,5	25
52005070	13,5/13,5/9/5	6,8 / 8,8	3,5 / 5,0	22	37,0	6,0	25
52010470	13,5/9/9/6	6,8 / 8,8	4,5 / 6,0	22	32,5	5,5	25
52010500	13,5/11/9/6	6,8 / 8,8	4,5 / 6,0	22	32,5	5,5	25
52005080	13,5/13,5/9/6	6,8 / 8,8	4,5 / 6,0	22	37,0	6,0	25
52010480	13,5/9/11/7	8,5 / 10,8	5,5 / 7,0	22	32,5	5,5	25
52010510	13,5/11/11/7	8,5 / 10,8	5,5 / 7,0	22	32,5	5,5	25
52005090	13,5/13,5/11/7	8,5 / 10,8	5,5 / 7,0	22	37,0	6,0	25
52010520	16/11/11/8	8,5 / 10,8	6,0 / 8,0	24	35,0	5,5	25
52010560	16/13,5/11/8	8,5 / 10,8	6,0 / 8,0	24	35,5	6,0	25
52005100	16/16/11/8	8,5 / 10,8	6,0 / 8,0	24	37,5	6,0	25
52010530	16/11/13/9	10,8 / 12,8	7,0 / 9,0	24	35,0	5,5	25
52010570	16/13,5/13/9	10,8 / 12,8	7,0 / 9,0	24	35,5	6,0	25
52005110	16/16/13/9	10,8 / 12,8	7,0 / 9,0	24	37,5	6,0	25
52010540	16/11/13/10	10,8 / 12,8	8,0 / 10,0	24	35,0	5,5	25
52010580	16/13,5/13/10	10,8 / 12,8	8,0 / 10,0	24	35,5	6,0	25
52005120	16/16/13/10	10,8 / 12,8	8,0 / 10,0	24	37,5	6,0	25
52010550	16/11/15/11	12,0 / 14,8	9,0 / 11,0	24	35,0	5,5	25
52010590	16/13,5/15/11	12,0 / 14,8	9,0 / 11,0	24	35,5	6,0	25
52005130	16/16/15/11	12,0 / 14,8	9,0 / 11,0	24	37,5	6,0	25
52010600	21/16/16/12	14,0 / 15,8	10,0 / 12,0	30	38,5	6,5	25
52005140	21/21/16/12	14,0 / 15,8	10,0 / 12,0	30	43,5	7,0	25
52010610	21/16/16/13	14,0 / 15,8	11,0 / 13,0	30	38,5	6,5	25
52005150	21/21/16/13	14,0 / 15,8	11,0 / 13,0	30	43,5	7,0	25
52010620	21/16/18/14	15,8 / 17,8	12,0 / 14,0	30	38,5	6,5	25
52005160	21/21/18/14	15,8 / 17,8	12,0 / 14,0	30	43,5	7,0	25
52010630	21/16/18/15	15,8 / 17,8	13,0 / 15,0	30	38,5	6,5	25
52005170	21/21/18/15	15,8 / 17,8	13,0 / 15,0	30	43,5	7,0	25
52010640	21/16/20/16	17,5 / 19,8	14,0 / 16,0	30	38,5	6,5	25
52005180	21/21/20/16	17,5 / 19,8	14,0 / 16,0	30	43,5	7,0	25
52005190	29/29/22/17	19,5 / 21,8	15,0 / 17,0	40	47,5	8,0	10
52005200	29/29/22/18	19,5 / 21,8	16,0 / 18,0	40	47,5	8,0	10
52005210	29/29/24/19	21,5 / 23,8	17,0 / 19,0	40	47,5	8,0	10
52005240	29/29/26/19	23,5 / 25,8	17,0 / 19,0	40	47,5	8,0	10

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SKINDICHT® SRE



SKINDICHT® SRE

Benefits

- Perfect seal with anti-kink protection
- Optimum, F8480 low-resistance 360° screen contact
- Cable-protecting strain relief
- Gentle cable clamping
- High degree of protection

Application range

- Earthing gland with additional anti-kink protection. For applications where electrical interference fields can occur.
- Moving machine parts
- Conveyor and transport systems
- Production lines
- Measurement and control technology

Approvals



Design

- PG connection thread

Note

- Counter nut to be used: SKINDICHT® SM
- EMC counter nut, SKINDICHT® SM nut should be used to ensure optimum contact with painted, anodised or powder-coated housings

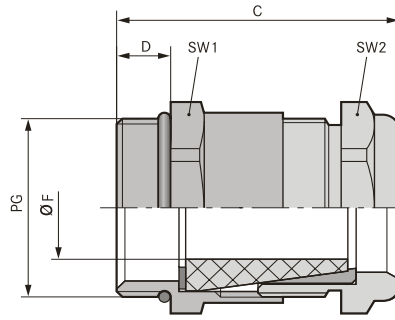
Technical data

- Caution**
The installation dimensions can be found in appendix T21
- Upon request**
Available with longer connection thread
- Material**
Body: nickel-plated brass
Earthing sleeve: plain brass
Anti-kink sleeve: CR/NBR
O-ring: NBR
- Protection rating**
IP 65
- Temperature range**
-20°C to +80°C

Article number	Article designation / size	Outer sheath Ø, min./max. (mm)	Min./max. inner sheath Ø (mm)	SW1/SW2 mm	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SRE							
52010780	13,5/9/9/6	7,5 / 9,0	4,5 / 6,0	22 / 22	60,0	5,5	25
52010790	13,5/9/11/7	9,0 / 11,0	5,5 / 7,0	22 / 22	60,0	5,5	25
52010800	13,5/11/9/6	7,5 / 9,0	4,5 / 6,0	22 / 22	60,0	5,5	25
52010810	13,5/11/11/7	9,0 / 11,0	5,5 / 7,0	22 / 22	60,0	5,5	25
52005310	13,5/13,5/9/6	7,5 / 9,0	4,5 / 6,0	22 / 22	60,0	6,5	25
52005320	13,5/13,5/11/7	9,0 / 11,0	5,5 / 7,0	22 / 22	60,0	6,5	25
52010820	16/11/13/9	11,0 / 13,0	7,0 / 9,0	24 / 24	65,0	5,5	25
52010830	16/11/13/10	11,0 / 13,0	8,0 / 10,0	24 / 24	65,0	5,5	25
52010840	16/11/15/11	13,0 / 15,0	9,0 / 11,0	24 / 24	65,0	5,5	25
52010850	16/13,5/13/9	11,0 / 13,0	7,0 / 9,0	24 / 24	67,0	6,0	25
52010860	16/13,5/13/10	11,0 / 13,0	8,0 / 10,0	24 / 24	67,0	6,0	25
52010870	16/13,5/15/11	13,0 / 15,0	9,0 / 11,0	24 / 24	67,0	6,0	25
52005330	16/16/13/9	11,0 / 13,0	7,0 / 9,0	24 / 24	65,0	6,5	25
52005340	16/16/13/10	11,0 / 13,0	8,0 / 10,0	24 / 24	65,0	6,5	25
52005350	16/16/15/11	13,5 / 15,0	9,0 / 11,0	24 / 24	65,0	6,5	25
52010880	21/16/15/12	13,5 / 15,0	10,0 / 12,0	30 / 30	78,0	6,5	25
52010890	21/16/17/14	15,0 / 17,0	12,0 / 14,0	30 / 30	78,0	6,5	25
52010900	21/16/19/15	17,0 / 19,0	13,0 / 15,0	30 / 30	78,0	6,5	25
52010910	21/16/20/16	18,0 / 20,0	14,0 / 16,0	30 / 30	78,0	6,5	25
52005360	21/21/15/12	13,0 / 15,0	10,0 / 12,0	30 / 30	78,0	7,0	25
52005370	21/21/17/14	15,0 / 17,0	12,0 / 14,0	30 / 30	78,0	7,0	25
52005380	21/21/19/15	17,0 / 19,0	13,0 / 15,0	30 / 30	78,0	7,0	25
52005390	21/21/20/16	18,0 / 20,0	14,0 / 16,0	30 / 30	78,0	7,0	25
52005400	29/29/20/17	19,0 / 20,0	15,0 / 17,0	40 / 41	90,0	8,0	10
52005410	29/29/23/19	22,0 / 23,0	17,0 / 19,0	40 / 41	90,0	8,0	10
52005411	36/36/26/22	23,5 / 26,0	20,0 / 22,0	50 / 50	109,0	9,0	5
52005412	36/36/30/24	27,0 / 30,0	22,0 / 24,0	50 / 50	109,0	9,0	5
52003585	36/36/30/26	27,0 / 30,0	24,0 / 26,0	50 / 50	109,0	9,0	5
52005414	36/36/33/28	30,0 / 33,0	26,0 / 28,0	50 / 50	109,0	9,0	5
52023586	36/36/35/30	32,0 / 35,0	28,0 / 30,0	50 / 50	109,0	9,0	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SHV



SKINDICHT® SHV

Benefits

- Watertight
- Gentle cable clamping
- Robust
- High strain relief

Application range

- Watertight cable gland with conical sealing element.
- Pumps
- Floater switches

Approvals



Design

- PG connection thread

Note

- Counter nut to be used: SKINDICHT® SM
- Suitable accessory: SKINDICHT® SHV sealing cones
- Example order designation:
SHV 13.5/9/9
13.5 = PG thread of compression screw
9 = PG connection thread
9 = clear opening of sealing cone

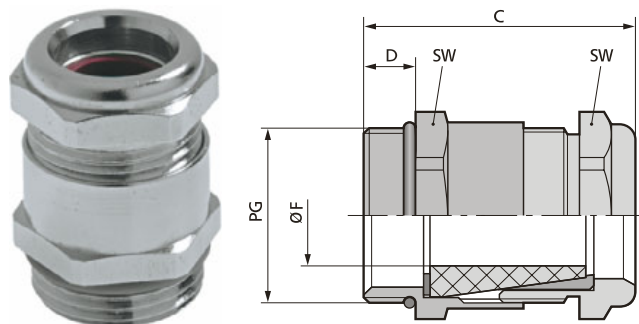
Technical data

- Caution**
The installation dimensions can be found in appendix T21
- Material**
Body: nickel-plated brass
Sealing cone: CR
O-ring: NBR
- Protection rating**
IP 68 - 10 bar
- Temperature range**
-20 °C to +80 °C

Article number	Article designation / size	Clamping range ØF (mm)	SW 1/2 mm	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SHV						
52002530	SHV 7/7/5	3,8 - 4,8	14	26,0	5,0	50
52002550	SHV 9/9/6	4,8 - 5,8	17	28,5	6,0	50
52002540	SHV 9/9/7	5,8 - 6,8	17	28,5	6,0	50
52002570	SHV 11/11/7	5,8 - 6,8	20	31,0	6,0	25
52002560	SHV 11/11/9	6,8 - 8,8	20	31,0	6,0	25
52010650	SHV 13,5/9/9	6,5 - 8,8	22	33,0	6,5	25
52010660	SHV 13,5/9/11	8,5 - 10,8	22	33,0	6,5	25
52010670	SHV 13,5/11/9	6,8 - 8,8	22	33,0	6,5	25
52010680	SHV 13,5/11/11	8,5 - 10,8	22	33,0	6,5	25
52002600	SHV 13,5/13,5/9	6,8 - 8,8	22	33,0	6,5	25
52002590	SHV 13,5/13,5/11	8,5 - 10,8	22	33,0	6,5	25
52010690	SHV 16/11/11	8,5 - 10,8	24	35,0	6,5	25
52010700	SHV 16/11/13	10,8 - 12,8	24	35,0	6,5	25
52010710	SHV 16/11/15	13,8 - 14,8	24	35,0	6,5	25
52010720	SHV 16/13,5/11	8,5 - 10,8	24	35,0	6,5	25
52010730	SHV 16/13,5/13	10,8 - 12,8	24	35,0	6,5	25
52010740	SHV 16/13,5/15	13,8 - 14,8	24	35,0	6,5	25
52002640	SHV 16/16/11	8,5 - 10,8	24	35,0	6,5	25
52002630	SHV 16/16/13	10,8 - 12,8	24	35,0	6,5	25
52002620	SHV 16/16/15	13,8 - 14,8	24	35,0	6,5	25
52010750	SHV 21/16/16	13,3 - 15,6	30	40,0	7,0	25
52010760	SHV 21/16/18	15,8 - 17,8	30	38,0	7,0	25
52010770	SHV 21/16/20	17,5 - 19,8	30	38,0	7,0	25
52002670	SHV 21/21/16	14,8 - 15,8	30	38,0	7,0	25
52002660	SHV 21/21/18	15,8 - 17,8	30	38,0	7,0	25
52002650	SHV 21/21/20	17,5 - 19,8	30	38,0	7,0	25
52002710	SHV 29/29/22	19,5 - 21,8	40	44,5	8,0	10
52002700	SHV 29/29/24	21,8 - 23,8	40	44,5	8,0	10
52002690	SHV 29/29/26	23,8 - 25,8	40	44,5	8,0	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SHV VITON®



SKINDICHT® SHV VITON®

Benefits

- For high temperatures
- Resistant to oils, solvents, acids and chemicals
- Watertight
- High strain relief
- Robust

Application range

- Watertight and high temperature-resistant cable gland with special conical VITON® sealing element.
- Brickworks
- Sewage treatment plants
- Car wash sites

Approvals



Design

- 1 fitting
- 2 washers
- 3 VITON® sealing cone
- 4 brass cones
- 5 compression screws

Note

- Counter nut to be used: SKINDICHT® SM

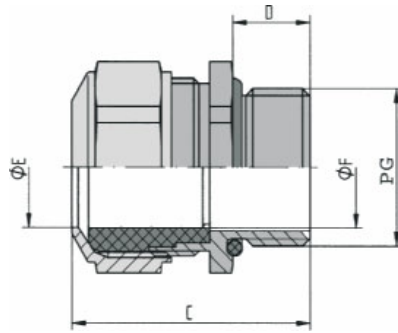
Technical data

- Caution**
The installation dimensions can be found in appendix T21
- Material**
Body: nickel-plated brass
Sealing cone: FKM
O-ring: FKM
- IP**
Protection rating
IP 68 - 10 bar
- Temperature range**
-15°C to +200°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SHV VITON®						
52024934	SHV-V 7/7/5	3,8 - 4,8	14	26,0	5,0	50
54000015	SHV-V 9/9/6	4,8 - 5,8	17	28,5	6,0	50
52024935	SHV-V 9/9/7	5,8 - 6,8	17	28,5	6,0	50
52024936	SHV-V 11/11/7	5,8 - 6,8	20	31,0	6,0	25
52024937	SHV-V 11/11/9	6,8 - 8,8	20	31,0	6,0	25
52024970	SHV-V 13,5/9/11	8,5 - 10,8	22	33,0	6,5	25
52024968	SHV-V 13,5/11/9	6,8 - 8,8	22	33,0	6,5	25
52024969	SHV-V 13,5/11/11	8,5 - 10,8	22	33,0	6,5	25
52024961	SHV-V 13,5/13,5/9	6,8 - 8,8	22	33,0	6,5	25
52024962	SHV-V 13,5/13,5/11	8,5 - 10,8	22	33,0	6,5	25
52024971	SHV-V 16/11/13	10,8 - 12,8	24	35,0	6,5	25
52024973	SHV-V 16/13,5/13	10,8 - 12,8	24	35,0	6,5	25
52024964	SHV-V 16/16/13	10,8 - 12,8	24	35,0	6,5	25
52024965	SHV-V 16/16/15	13,8 - 14,8	24	35,0	6,5	25
52024966	SHV-V 21/21/18	15,8 - 17,8	30	38,0	7,0	25
52024967	SHV-V 21/21/20	17,5 - 19,8	30	38,0	7,0	25
52024974	SHV-V 29/29/22	19,5 - 21,8	40	44,5	8,0	10

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® CN



SKINDICHT® CN

Benefits

- For high temperatures
- Resistant to oils, solvents, acids and chemicals
- Sea water-resistant
- For high mechanical stress
- High corrosion-resistance

Application range

- Chromium nickel steel cable gland with VITON® seal, specially designed for use under tough conditions.
- Pharmaceutical and petrochemical industry
- Offshore sector
- Wind power plants
- Brickworks

Approvals



Design

- PG connection thread

Note

- Refer to the chart to find a suitable counter-nut for SKINDICHT® SM CrNi

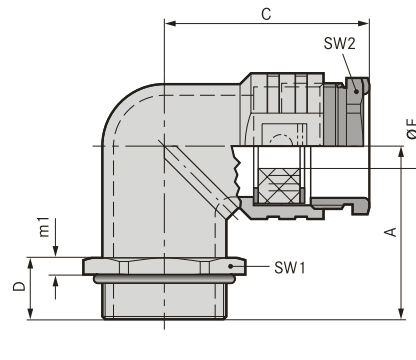
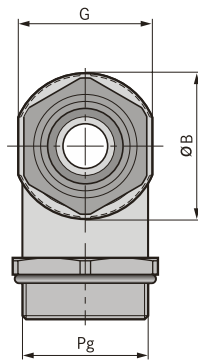
Technical data

- Caution**
The installation dimensions can be found in appendix T21
- Upon request**
TPE seal
- Material**
Body: Chrome-nickel steel in accordance with DIN, material no. 1.4305
Seal: FPM
O-ring: FPM
- Protection rating**
IP 68
- Temperature range**
-25°C to +200°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® CN						
52032520	CN 9	6 - 10	18	28.0	10.0	5
52032525	CN 11	5 - 12	22	32.0	10.0	5
52032540	CN 13,5	8 - 15	24	34.0	10.0	5
52032550	CN 16	8 - 15	24	34.0	10.0	5
52032560	CN 21	12,5 - 20,5	30	42.0	12.0	5
52032570	CN 29	19 - 27,5	41	53.0	12.0	5

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® RWV



SKINDICHT® RWV

■ **Benefits**

- Strain relief
- Sealed by incised sealing ring
- Corrosion-resistant
- Decrease in installation height
- Sea water-resistant

■ **Application range**

- Angled glands are used in areas where cables have to run in parallel to the housing wall.
- Electric motor manufacturing
- Machine and equipment manufacturing
- Plant engineering
- Light and sound applications

■ **Approvals**



■ **Design**

- PG connection thread

■ **Note**

- Counter nut to be used: SKINDICHT® SM
- For combination with other SKINDICHT® or SKINTOP® cable glands, we propose our SKINDICHT® RWV without incised sealing ring and compression screw

■ **Technical data**



Material

Body: zinc die-casting
 Compression screw and hexagon nut: nickel-plated brass
 Incised sealing ring: CR
 O-ring: NBR



Protection rating

IP 55



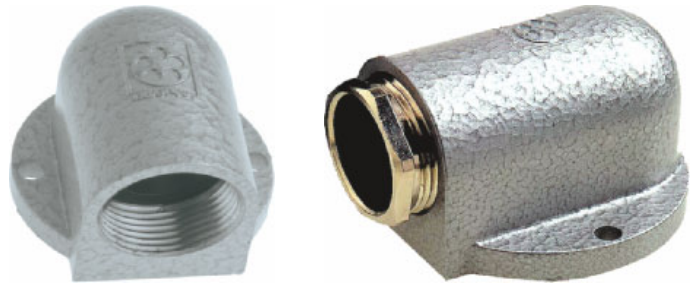
Temperature range

-20°C to +80°C
 Without incised sealing ring: -20°C to +100°C

Article number	Article designation / size	A mm	G mm	ØB mm	Incised sealing ring ØF (mm)	Overall length, C (mm)	Thread length, D (mm)	SW1/SW2 mm	Pieces / PU
SKINDICHT® RWV									
52004180	RWV 7	20.5	14	15.3	5	26.0	8.5	15.0 / 13.0	25
52004190	RWV 9	23.5	17	18.3	5/8	28.0	9.5	18.0 / 15.0	25
52004200	RWV 11	26.0	20	21.9	7/10/12.5	31.5	10.0	21.0 / 18.0	25
52004210	RWV 13,5	28.5	22	24.0	7/10.5/13/16	34.5	10.5	23.0 / 20.0	25
52004220	RWV 16	31.0	24	26.1	8/10.5/13.5/16	35.5	11.0	26.0 / 22.0	10
52005420	RWV 21	33.5	30	32.5	11/15/18/20	42.5	11.5	32.0 / 28.0	10
52004225	RWV 29	43.0	40	42.0	19/23/27/31	49.0	13.0	41.0 / 37.0	10
SKINDICHT® RWV without E+D									
52024020	RWV 7	20.5	14	15.3		20.2	8.5	15.0 / 13.0	25
52023970	RWV 9	23.5	17	18.3		21.8	9.5	18.0 / 15.0	25
52023980	RWV 11	26.0	20	21.9		24.9	10.0	21.0 / 18.0	25
52023990	RWV 13,5	28.5	22	24.0		27.4	10.5	23.0 / 20.0	25
52024000	RWV 16	31.0	24	26.1		28.5	11.0	26.0 / 22.0	10
52024010	RWV 21	33.5	30	32.5		34.8	11.5	32.0 / 28.0	10
52024015	RWV 29	43.0	40	42.0		41.2	13.0	41.0 / 37.0	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SE



SKINDICHT® SE

Benefits

- Sealed by incised sealing ring
- Corrosion-resistant
- Easy to assemble/install
- Completely safe cable entry
- Low overall height

Application range

- For high mechanical stress
- When no connection thread is provided

Approvals



Design

- PG 16 - 21 with 2 screw holes
- PG 29 - 36 with 4 screw holes

Note

- For combination with other SKINDICHT® or SKINTOP® cable glands, we propose our SKINDICHT® SE without incised sealing ring and compression screw

Technical data

Material
 Body: zinc die-casting, grey, hammer tone finish
 Incised sealing ring: CR
 O-ring: NBR
 Compression screw: nickel-plated brass

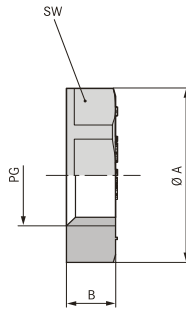
Protection rating
 IP 55

Temperature range
 -20°C to +80°C

Article number	Article designation / size	Incised sealing ring ØF (mm)	SW (mm)	Overall length (mm)	Overall width (mm)	Overall height (mm)	Pieces / PU
SKINDICHT® SE							
52004130	SE 16	8/10.5/13.5/16	22	49.2	42	36.0	10
52004140	SE 21	11/15/18/20	28	68.1	60	52.5	10
52005430	SE 29	19/23/27/31	37	83.6	66	54.0	5
52004150	SE 36	25/28/31/35	47	99.6	85	73.0	1
SKINDICHT® SE without E+D							
52024090	SE 16			42.0	42	36.0	10
52024100	SE 21			60.0	60	52.5	10
52024110	SE 29			76.0	66	54.0	5
52024120	SE 36			90.0	85	73.0	1

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® GMK



SKINDICHT® GMK

Benefits

- Supporting surface for spanner means scratches on the housing are avoided

Application range

- For locking SKINDICHT® cable glands in boreholes without thread.

Approvals



Design

- PG connection thread

Note

- SKINTOP® GMP-GL counter nuts are recommended if there are high mechanical stress and high torques for tightening are required

Technical data

- Colour delivered**
Light grey (RAL 7035)
- Material**
Polystyrene
- Temperature range**
-20°C to +70°C

Article number	Article designation / size	B in mm	SW (mm)	Pieces / PU
SKINDICHT® GMK				
52000110	GMK 7	5	19	100
52000120	GMK 9	5	22	100
52000130	GMK 11	5	24	100
52000140	GMK 13,5	6	27	100
52000150	GMK 16	6	30	100
52000160	GMK 21	7	36	50
52000170	GMK 29	7	46	50
52000180	GMK 36	8	60	25
52000190	GMK 42	8	65	25
52000200	GMK 48	8	70	25

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SM / SKINDICHT® SM-PE



SKINDICHT® SM



SKINDICHT® SM-PE

Benefits

SKINDICHT® SM-PE

- Cutting edges cut through the insulating layer, thus guaranteeing an optimum EMC contact
- Suitable for all metric glands used in earthing and EMC applications

Application range

SKINDICHT® SM

- Used when a gland has to be countered, or in through-holes on thin-walled housings

SKINDICHT® SM-PE

- For lacquered, anodised or powder-coated housings.

Approvals



Design

- PG connection thread

Technical data

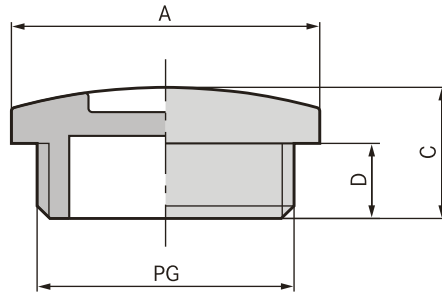


Material
Nickel-plated brass

Article number	Article designation / size	Height (mm)	SW (mm)	Pieces / PU
SKINDICHT® SM				
52003490	SM 7	2.8	15	100
52003500	SM 9	2.8	18	100
52003510	SM 11	3	21	100
52003520	SM 13,5	3	23	100
52003530	SM 16	3	26	100
52003540	SM 21	3.5	32	50
52003550	SM 29	4	41	50
52003560	SM 36	5	51	25
52003570	SM 42	5	60	25
52003580	SM 48	5.5	64	25
SKINDICHT® SM-PE				
52103200	SM-PE 7	4.7	15	100
52103210	SM-PE 9	4.7	18	100
52103220	SM-PE 11	4.7	21	100
52103230	SM-PE 13,5	4.7	23	100
52103240	SM-PE 16	4.7	26	100
52103250	SM-PE 21	5.2	32	50
52103260	SM-PE 29	5.7	41	50
52103270	SM-PE 36	6.7	51	50

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® BLK / BLK-GL



SKINDICHT® BLK / BLK-GL

■ **Benefits**

- For closing pre-threaded holes

■ **Application range**

- Control cabinet manufacturing
- Distribution box
- Junction boxes

■ **Approvals**



■ **Design**

- PG connection thread

■ **Note**

- SKINDICHT® BLK-GL offers high stability due to glass fibre reinforcement

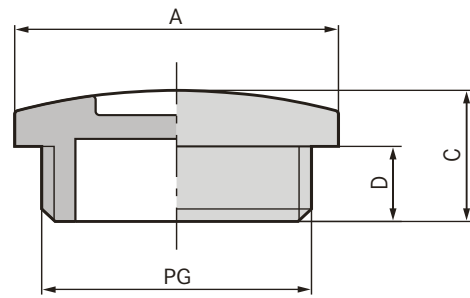
■ **Technical data**

- Upon request**
with O-ring fitted
- Colour delivered**
Light grey (RAL 7035)
- Material**
BLK: polystyrene
BLK-GL: glass fibre-reinforced polyamide
- Temperature range**
BLK: -20°C to +70°C
BLK-GL: -40°C to +100°C

Article number	Article designation / size	Thread length, D (mm)	Pieces / PU
SKINDICHT® BLK			
52005949	BLK 7	6.0	100
52005950	BLK 9	6.0	100
52005960	BLK 11	6.0	100
52005970	BLK 13,5	6.0	100
52005980	BLK 16	6.0	100
52005990	BLK 21	8.0	50
52006000	BLK 29	8.0	50
52006010	BLK 36	10.0	25
52006020	BLK 42	10.0	25
52006030	BLK 48	12.0	25
SKINDICHT® BLK-GL			
52024848	BLK - GL 7	6.0	100
52024849	BLK - GL 9	6.0	100
52024850	BLK - GL 11	6.0	100
52024851	BLK - GL 13,5	6.0	100
52024852	BLK - GL 16	6.0	100
52024853	BLK - GL 21	8.0	50
52024854	BLK - GL 29	8.0	50
52024855	BLK - GL 36	10.0	25
52024856	BLK - GL 42	10.0	25
52024857	BLK - GL 48	12.0	25

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® BL



SKINDICHT® BL

Benefits

- For closing pre-threaded holes
- Assembling with screwdriver

Application range

- Machine and equipment manufacturing
- Electric motor manufacturing

Approvals



Design

- PG connection thread

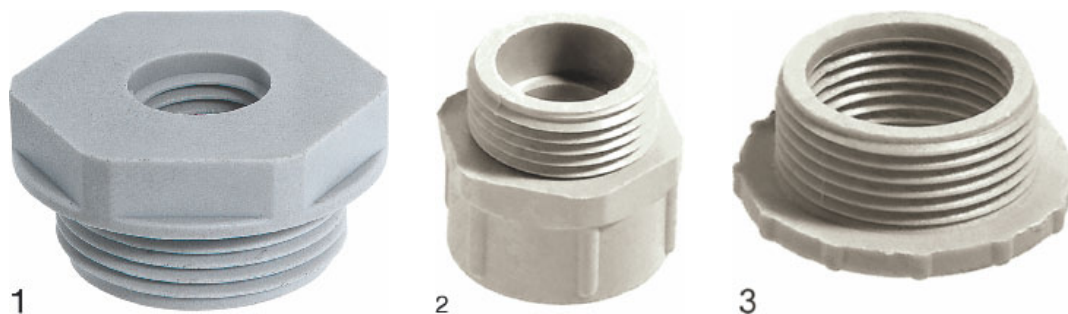
Technical data

- Material**
Dummy plug: nickel-plated brass
O-ring: NBR
- Protection rating**
IP 54
IP 68 with O-ring

Article number	Article designation / size	Pieces / PU
SKINDICHT® BL		
52002680	BL 7	100
52003390	BL 9	100
52003400	BL 11	100
52003410	BL 13,5	100
52003420	BL 16	100
52003430	BL 21	50
52003440	BL 29	50
52003450	BL 36	25
52003460	BL 42	10
52002790	BL 48	10
SKINDICHT® BL with O-ring		
54001610	BL 7 m. O-Ring	100
54000071	BL 9 m. O-Ring	100
54000040	BL 11 m. O-Ring	100
54001630	BL 13,5 m. O-Ring	100
54001640	BL 16 m. O-Ring	100
54001660	BL 21 m. O-Ring	50
54001620	BL 29 m. O-Ring	50
54001650	BL 36 m. O-Ring	25
54001670	BL 42 m. O-Ring	10
54001680	BL 48 m. O-Ring	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® KU, KUS, KUK



1 SKINDICHT® KU, KUS, KUK

Benefits

- Enables the use of cable glands with smaller connection threads than the existing threaded holes
- Glass fibre-reinforced for maximum mechanical stability

Application range

- Machines
- Devices
- Housings

Approvals



Design

- PG connection thread

Design

- SKINDICHT® KU with hexagon and flat design
- SKINDICHT® KUS with hexagon and larger height
- SKINDICHT® KUK with knurled heads

Technical data

RAL Colour delivered
Light grey (RAL 7035)

Material
Polyamide, glass fibre-reinforced

Temperature range
KU, KUS: -40°C to +100°C
KUK: -20°C to +80°C

Article number	Article designation / sizeOuter / inner	Pieces / PU
SKINDICHT® KU		
51730010	KU 11/7	50
52025100	KU 13,5/7	50
52025110	KU 16/9	50
52025120	KU 21/11	25
51730040	KU 21/13,5	25
52025130	KU 29/13,5	25
51730050	KU 29/16	25
52025140	KU 36/16	25
52025150	KU 36/21	25
52025050	KU 36/29	25
52025160	KU 42/21	25
52025170	KU 42/29	25
52025060	KU 42/36	25
52025180	KU 48/29	25
52025190	KU 48/36	25
52025070	KU 48/42	25
SKINDICHT® KUS		
52025040	KUS 9/7	50
51730060	KUS 11/9	50
51730070	KUS 13,5/11	50
51730080	KUS 16/13,5	50
SKINDICHT® KUK		
51730020	KUK 13,5/9	50
51730025	KUK 16/9	50
51730030	KUK 16/11	50
51730035	KUK 21/13,5	50
51730090	KUK 21/16	50
51730100	KUK 29/21	25
51730110	KUK 36/29	25

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX

SKINDICHT® MR

Benefits

- Enables the use of cable glands with smaller connection threads than the existing threaded holes

Application range

- Machines
- Devices
- Housings

Approvals



Design

- PG connection thread

Technical data

Material
Nickel-plated brass



Article number	Article designation / sizeOuter / inner	Pieces / PU
SKINDICHT® MR		
52003750	MR 9/7	100
52003760	MR 11/7	100
52003770	MR 11/9	100
52003780	MR 13,5/7	100
52003790	MR 13,5/9	100
52003800	MR 13,5/11	100
52003810	MR 16/7	100
52003820	MR 16/9	100
52003830	MR 16/11	100
52003840	MR 16/13,5	100
52003850	MR 21/11	50
52003860	MR 21/13,5	50
52003870	MR 21/16	50
52003880	MR 29/13,5	50
52003890	MR 29/16	50
52003900	MR 29/21	50
52003910	MR 36/16	25
52003920	MR 36/21	25
52003930	MR 36/29	25
52003940	MR 42/29	10
52003950	MR 42/36	10
52003970	MR 48/36	10
52003980	MR 48/42	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® EKU



■ Benefits

- Enables the use of cable glands with larger connection threads than the existing threaded holes
- Assembling with a wrench
- Supporting surface for spanner means scratches on the housing are avoided

■ Application range

- Machines
- Devices
- Housings

■ Approvals



■ Design

- PG connection thread

■ Technical data

RAL	Colour delivered Light grey (RAL 7035)
	Material Polyamide, glass fibre-reinforced
	Temperature range -40°C to +100°C

Article number	Article designation / sizeOuter / inner	Pieces / PU
SKINDICHT® EKU		
52025200	EKU 7/9	100
51731000	EKU 9/11	100
51731010	EKU 11/13,5	100
51731020	EKU 13,5/16	100
51731030	EKU 16/21	50
51731040	EKU 21/29	25
52025210	EKU 29/36	25
52025220	EKU 36/42	25
52025230	EKU 42/48	25

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® ME



■ Benefits

- Enables the use of cable glands with larger connection threads than the existing threaded holes

■ Application range

- Industrial connectors
- Devices
- Housings
- Machines

■ Approvals



■ Design

- PG connection thread

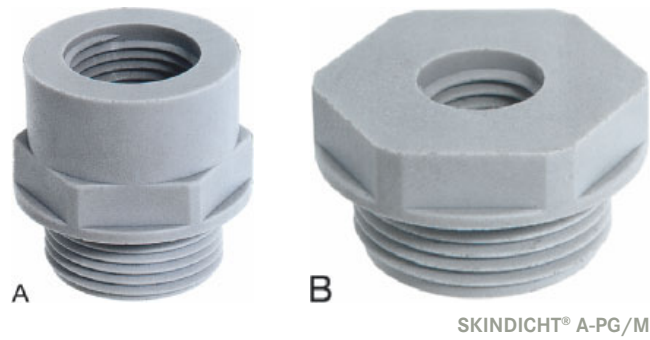
■ Technical data

	Material Nickel-plated brass
--	--

Article number	Article designation / sizeOuter / inner	Pieces / PU
SKINDICHT® ME		
52003990	ME 7/9	100
52004000	ME 9/11	100
52004010	ME 9/13,5	100
52004020	ME 11/13,5	100
52004030	ME 11/16	100
52004040	ME 11/21	100
52004050	ME 13,5/16	100
52004060	ME 13,5/21	50
52004070	ME 16/21	50
52004080	ME 16/29	50
52004090	ME 21/29	50
52004100	ME 29/36	50
52004110	ME 36/42	10
52004120	ME 42/48	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® A-PG/M



Benefits

- Adapter from a PG outer thread to a metric inner thread

Application range

- Housings
- Industrial connectors
- Machines

Approvals



Design

- PG connection thread

Design

- Form A = high
- Form B = flat

Technical data

- RAL** Colour delivered
Light grey (RAL 7035)
- Material**
Polyamide, glass fibre-reinforced
- Temperature range**
-40°C to +100°C

Article number	Form	Thread, male PG	Thread, female M2	SW (mm)	Pieces / PU
SKINDICHT® A-PG/M					
52100320	A	PG 7	12 x 1.5	16	25
52100321	A	PG 7	16 x 1.5	20	25
52100322	A	PG 9	12 x 1.5	20	25
52100323	A	PG 9	16 x 1.5	20	25
52100324	A	PG 9	20 x 1.5	24	25
52100325	A	PG 11	16 x 1.5	22	25
52100326	A	PG 11	20 x 1.5	24	25
52100327	A	PG 11	25 x 1.5	29	25
52100328	A	PG 13,5	16 x 1.5	24	25
52100329	A	PG 13,5	20 x 1.5	24	25
52100330	A	PG 13,5	25 x 1.5	29	25
52100331	A	PG 16	20 x 1.5	27	25
52100332	A	PG 16	25 x 1.5	29	25
52100333	A	PG 16	32 x 1.5	36	25
52100334	A	PG 21	25 x 1.5	33	10
52100335	A	PG 21	32 x 1.5	36	10
52100336	A	PG 21	40 x 1.5	46	10
52100337	B	PG 29	32 x 1.5	42	10
52100338	A	PG 29	40 x 1.5	46	10
52100339	A	PG 29	50 x 1.5	55	10
52100340	B	PG 36	40 x 1.5	53	10
52100341	A	PG 36	50 x 1.5	55	10
52100342	A	PG 36	63 x 1.5	68	10
52100343	B	PG 42	40 x 1.5	60	5
52100344	A	PG 42	50 x 1.5	60	5
52100345	A	PG 42	63 x 1.5	68	5
52100346	B	PG 48	50 x 1.5	65	5
52100347	A	PG 48	63 x 1.5	68	5

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® MA-PG/M



SKINDICHT® MA-PG/M

Benefits

- Adapter from a PG outer thread to a metric inner thread

Application range

- Housings
- Industrial connectors
- Machines

Approvals



Design

- PG connection thread

Design

- Form A top: knurl
- Form B bottom: smooth

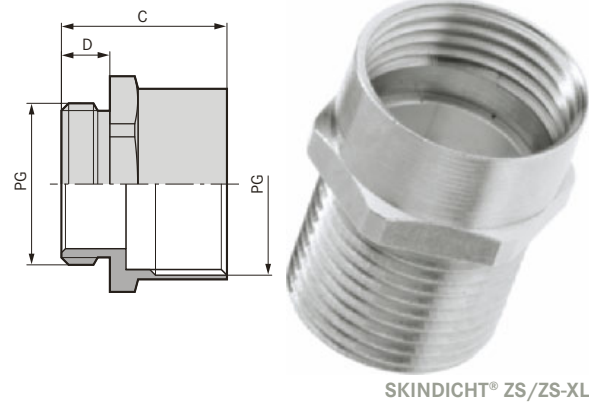
Technical data

Material
Nickel-plated brass

Article number	Form	PG size	Thread, female M2	Pieces / PU
SKINDICHT® MA-PG/M				
52104490	B	7	12 x 1.5	100
52104491	B	9	16 x 1.5	50
52104492	A	11	16 x 1.5	50
52104493	B	11	20 x 1.5	50
52104494	B	13,5	20 x 1.5	50
52104495	A	16	20 x 1.5	50
52104496	B	16	25 x 1.5	50
52104497	A	21	20 x 1.5	50
52104498	A	21	25 x 1.5	50
52104499	B	21	32 x 1.5	50
52104500	A	29	25 x 1.5	25
52104501	A	29	32 x 1.5	25
52104502	B	29	40 x 1.5	10
52104503	A	36	40 x 1.5	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® ZS/ZS-XL



SKINDICHT® ZS/ZS-XL

Benefits

- Can be used as an extension part or spare part
- Assembling with a wrench

Application range

- Hexagonal converter from a PG outer thread to a PG inner thread.
- Machines
- Devices
- Housings

Approvals



Design

- PG connection thread

Note

- SKINDICHT® ZS-XL offers a long connection thread

Technical data

Material
Nickel-plated brass

Article number	Article designation / size	SW (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® ZS				
52100010	ZS 7	14	5.0	100
52100020	ZS 9	17	6.0	100
52100030	ZS 11	20	6.0	100
52100040	ZS 13,5	22	6.5	100
52100050	ZS 16	24	6.5	50
52100060	ZS 21	30	7.0	50
52100070	ZS 29	40	8.0	25
52100080	ZS 36	50	9.0	10
52100090	ZS 42	57	10.0	10
52100100	ZS 48	64	10.0	10
SKINDICHT® ZS-XL				
52023149	ZS 7 round	14	15.0	100
52020940	ZS 9	17	15.0	100
52020930	ZS 11	20	15.0	100
52020950	ZS 13,5	22	15.0	100
52020960	ZS 16	24	15.0	50
52020970	ZS 21	30	15.0	50
52020980	ZS 29	40	15.0	25
52020990	ZS 36	50	15.0	10
52021000	ZS 42	57	15.0	10
52021010	ZS 48	64	15.0	10

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® STK



■ Benefits

- Prevents dust and dirt from getting into the housing

■ Application range

- This dust protector can be placed under the cap nut of the SKINTOP® cable glands.

■ Approvals



■ Technical data

RAL Colour delivered
White

Material
PVC

Temperature range
-20°C to +80°C

■ Note

- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

Article number	Article designation / size	Thread, male PG	Suitable for SKINDICHT® SVRN-M, SHZ-M, SKZ-M, SVR-M, SVRE-M, SHVE-M, SHV-M	Pieces / PU
SKINDICHT® STK				
52020818	STK 7	7	M 12	500
52020820	STK 9	9	M 16	500
52020830	STK 11	11	M 20/11	250
52020840	STK 13,5	13,5	M 20/13,5	250
52020850	STK 16	16	M 20/16	250
52020860	STK 21	21	M 25	250
52020870	STK 29	29	M 32	100
52020880	STK 36	36	M 40	100
52020890	STK 42	42	M 50	50
52020900	STK 48	48	M 63	50

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® E



■ Benefits

- One seal for several clamping ranges
- Rings can be individually adapted to various cable diameters

■ Application range

- Incised sealing ring for SKINDICHT® cable glands

■ Approvals



■ Note

- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

■ Technical data

RAL Colour delivered
Black

Material
CR

Temperature range
-20°C to +80°C

Article number	Article designation / size	Outer diameter x bores (mm)	Thickness (mm)	Pieces / PU
SKINDICHT® E				
52005780	E 9	13.5 x 5/8	5.5	250
52003690	E 11	16.5 x 7/10/12.5	6.0	250
52003700	E 13,5	18.5 x 7/10.5/13/16	6.5	250
52003710	E 16	20.5 x 8/10.5/13.5/16	7.5	250
52003720	E 21	26.0 x 11/15/18/20	8.0	100
52003730	E 29	35.0 x 19/23/27/31	9.5	100
52003740	E 36	45.0 x 25/28/31/35	12.0	50
52005790	E 42	52.0 x 35.5/39/42.5/46	14.0	50
52005800	E 48	57.0 x 40.5/44/47/50.5	14.0	50

Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- One seal for several clamping ranges
- Rings can be individually adapted to various cable diameters
- For high temperatures
- Resistant to oils, solvents, acids and chemicals

Application range

- Incised sealing ring made of VITON® for SKINDICHT® cable glands

Technical data

- RAL** Colour delivered
Red brown
- Material**
FKM
- Temperature range**
-10°C to +200°C



SKINDICHT® EV



Note

- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

Article number	Article designation / size	Outer diameter x bores (mm)	Thickness (mm)	Pieces / PU
SKINDICHT® EV				
52010340	EV 11	7/10/12.5	6.0	50
52010350	EV 13,5	7/10.5/13/16	6.5	50
52010360	EV 16	8/10.5/13.5/16	7.5	50
52010370	EV 21	11/15/18/20	8.0	25
52010380	EV 29	19/23/27/31	9.5	25
52010390	EV 36	25/28/31/35	12.0	25
52010410	EV 42	35.5/39/42.5/46	14.0	25

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- Resistant to oil, dust and water

Application range

- For a reliable sealing against foreign objects and liquids at the connecting thread of a gland or similar components.

Approvals



Technical data

- RAL** Colour delivered
Black
- Material**
NBR
Ozone and UV-resistant
- Temperature range**
-20°C to +100°C

Note

- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

SKINDICHT® O-Ring Perbunan® PG



Article number	Article designation / size	Inner Ø x thickness Ø (mm)	Pieces / PU
SKINDICHT® O-Ring Perbunan®			
53001010	O 7	10.0 x 1.5	100
53102011	O 9	13.0 x 1.5	100
53001020	O 11	16.0 x 1.5	100
52005740	O 13,5	18.0 x 1.5	100
53001030	O 16	20.0 x 1.5	100
52005750	O 21	26.0 x 2.0	100
53001040	O 29	34.0 x 2.0	50
52005760	O 36	44.0 x 2.0	50
53001050	O 42	50.0 x 2.0	50
52005770	O 48	55.0 x 2.0	50

Perbunan® is a registered trademark of BAYER AG
Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- For high temperatures
- Resistant to oils, solvents, acids and chemicals

Application range

- For a reliable sealing against foreign objects and liquids at the connecting thread of a gland or similar components.

Approvals



Technical data

- RAL** Colour delivered
Green
- Material**
FKM
- Temperature range**
-20°C to +200°C

Note

- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

SKINDICHT® O-Ring VITON® PG



Article number	Article designation / size	Inner Ø x thickness Ø (mm)	Pieces / PU
SKINDICHT® O-Ring VITON®			
52023607	O 7	10.0 x 1.5	100
52122011	O 9	13.0 x 1.5	100
52023602	O 11	16.0 x 1.5	100
52023601	O 13,5	18.0 x 1.5	100
52023603	O 16	20.0 x 1.5	50
52023604	O 21	26.0 x 2.0	50
52023606	O 29	34.0 x 2.0	50
52023608	O 36	44.0 x 2.0	25
52023609	O 42	50.0 x 2.0	25
52023611	O 48	55.0 x 2.0	25

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® PG cable gland accessories

SKINDICHT® sealing rings/incised seals

SKINDICHT® JT PTFE PG



Benefits

- Resistant to oil, water, alkaline solutions, acids, solvents, etc.
- Suitable for foodstuffs

Application range

- PTFE sealing disks for SKINTOP® and SKINDICHT® cable glands

Approvals



Note

- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

Technical data

	Colour delivered White
	Material PTFE
	Temperature range -120 °C to +250 °C Short-term: up to +300 °C

Article number	Article designation / size	Internal Ø/external Ø (mm)	Thickness (mm)	Pieces / PU
SKINDICHT® PTFE				
53801035	JT 7	12 / 16	2.0	100
53801045	JT 9	15 / 19	2.0	100
53801055	JT 11	18 / 22	2.0	100
53801065	JT 13,5	20 / 25	2.0	100
53801075	JT 16	22 / 27	2.0	100
53801085	JT 21	28 / 33	3.0	50
53801095	JT 29	37 / 43	3.0	50
53801105	JT 36	47 / 55	3.0	25
53801115	JT 42	54 / 63	3.0	25
53801125	JT 48	59 / 69	3.0	25

Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® PG cable gland accessories

SKINDICHT® earthing sleeves

SKINDICHT® EH



Benefits

- Alternative earthing sleeves

Application range

- Earthing sleeve for SKINDICHT® SHVE and SKINDICHT® SRE.

Approvals



Technical data

	Material Brass
--	--------------------------

Note

- Allocation example, earthing sleeve for suitable gland
- SKINDICHT® EH 13.5/5 fits SKINDICHT® SHVE 13.5/9/9/5.
- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

Article number	PG size/clear opening	Inner Ø (mm)	Flange Ø (mm)	Length (mm)	Pieces / PU
SKINDICHT® EH					
52010980	EH 9 / 3.2	3.2	13.3	11.0	100
52010985	EH 9 / 3.6	3.6	13.3	11.0	100
52010996	EH 11 / 4.5	4.5	16.7	9.0	100
52010000	EH 13,5 / 5.0	5.0	18.5	14.0	100
52010010	EH 13,5 / 6.0	6.0	18.5	14.0	100
52010020	EH 13,5 / 7.0	7.0	18.5	14.0	100
52010030	EH 16 / 8.0	8.0	20.5	14.0	50
52010040	EH 16 / 9.0	9.0	20.5	14.0	50
52010050	EH 16 / 10.0	10.0	20.5	14.0	50
52010060	EH 16 / 11.0	11.0	20.5	14.0	50
52010070	EH 21 / 12.0	12.0	26.0	16.0	50
52010080	EH 21 / 13.0	13.0	26.0	16.0	50
52010090	EH 21 / 14.0	14.0	26.0	16.0	50
52010100	EH 21 / 15.0	15.0	26.0	16.0	50
52010110	EH 21 / 16.0	16.0	26.0	16.0	50
52010120	EH 29 / 17.0	17.0	35.0	18.0	25
52010130	EH 29 / 18.0	18.0	35.0	18.0	25
52010140	EH 29 / 19.0	19.0	35.0	18.0	25
52010161	EH 36 / 22.0	22.0	45.0	10.0	10
52010162	EH 36 / 24.0	24.0	45.0	10.0	10
52010163	EH 36 / 26.0	26.0	45.0	10.0	10
52010164	EH 36 / 28.0	28.0	45.0	10.0	10

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

SKINDICHT® SHV cone seal



SKINDICHT® SHV cone seal

Benefits

- SKINDICHT® SHV Neoprene® resistant to oil, dust and water
- SKINDICHT® SHV VITON® for high temperatures
- SKINDICHT® SHV VITON® resistant to oils, solvents, acids and chemicals

Application range

- Sealing cone for SKINDICHT® cable glands.

Approvals



Note

- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

Technical data

RAL	Colour delivered CR: black FKM: red
	Material CR FKM
	Temperature range CR: -20°C to +80°C FKM: -15°C to +200°C

Article number	PG size/clear opening	Inner Ø (mm)	Length (mm)	Pieces / PU
SKINDICHT® SHV Neoprene®				
52021120	SHV 7/5.0	5.0	13.8	100
52021130	SHV 9/6.0	6.0	14.8	100
52021140	SHV 9/7.0	7.0	14.8	100
52021150	SHV 11/7.0	7.0	17.5	100
52021160	SHV 11/9.0	9.0	17.0	100
52021180	SHV 13,5/9.0	9.0	18.5	100
52021170	SHV 13,5/11.0	11.0	18.5	100
52021190	SHV 16/11.0	11.0	19.5	50
52021200	SHV 16/13.0	13.0	19.5	50
52021210	SHV 16/15.0	15.0	19.5	50
52024460	SHV 21/16.0	16.0	19.8	50
52021220	SHV 21/18.0	18.0	19.8	50
52021230	SHV 21/20.0	20.0	19.8	50
52021240	SHV 29/22.0	22.0	24.0	25
52021250	SHV 29/24.0	24.0	24.0	25
52021260	SHV 29/26.0	26.0	24.0	25
SKINDICHT® SHV VITON®				
52021259	SHV 7/5.0	5.0	13.8	100
52021146	SHV 9/6.0	6.0	14.8	100
52021261	SHV 9/7.0	7.0	14.8	100
52021262	SHV 11/7.0	7.0	17.5	100
52021263	SHV 11/9.0	9.0	17.0	100
52021271	SHV 13,5/9.0	9.0	18.5	100
52021272	SHV 13,5/11.0	11.0	18.5	100
52021265	SHV 16/13.0	13.0	19.5	50
52021269	SHV 16/15.0	15.0	19.5	50
52021268	SHV 21/18.0	18.0	19.5	50
52021266	SHV 21/20.0	20.0	19.8	50
52021267	SHV 29/22.0	22.0	19.8	50

Neoprene® and Viton® are registered trademarks of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

SKINDICHT® SNR



Benefits

- Alternative anti-kink sleeves

Application range




- Anti-kink sleeves for improved protection against kinking in SKINDICHT® cable glands.

Approvals



Note

- Delivery will be made in the largest possible packing unit (bulk goods), minimum order quantity is one packing unit

■ Technical data	
	Colour delivered Black
	Material CR
	Temperature range -20°C to +80°C

Article number	External/internal PG size	Max. cable Ø (mm)	min. cable Ø (mm)	Suitable SKINDICHT® gland	Suitable SKINDICHT® gland	Pieces / PU
SKINDICHT® SNR						
52001970	SNR 7/5	5.0	3.5	SH 7	SR 7005	100
52001980	SNR 9/7	7.0	5.5	SH 9	SR 9007	100
52001990	SNR 11/7	7.0	5.5	SH 11	SR 1107	100
52002000	SNR 11/9	9.0	7.5	SH 11	SR 1109	100
52002010	SNR 13/9	9.0	7.5	SH 13,5	SR 1309	100
52002020	SNR 13/11	11.0	9.0	SH 13,5	SR 1311	100
52002030	SNR 13/13	13.0	11.0	SH 13,5	SR 1313	100
52002040	SNR 16/13	13.0	11.5	SH 16	SR 1613	100
52002050	SNR 16/15	15.0	13.0	SH 16	SR 1615	100
52002060	SNR 21/15	15.0	13.5	SH 21	SR 2115	50
52002070	SNR 21/17	17.0	15.0	SH 21	SR 2117	50
52002080	SNR 21/19	19.0	17.0	SH 21	SR 2119	50
52002090	SNR 21/20	20.0	18.0	SH 21	SR 2120	50
52002100	SNR 29/20	20.0	18.0	SH 29	SR 2920	25
52002110	SNR 29/23	23.0	21.0	SH 29	SR 2923	25
52002120	SNR 29/25	25.0	23.0	SH 29	SR 2925	25
52002130	SNR 36/26	26.0	23.0	SH 36	SR 3626	25
52002140	SNR 36/30	30.0	27.0	SH 36	SR 3630	25
52002150	SNR 36/33	33.0	30.0	SH 36	SR 3633	25
52002160	SNR 36/35	35.0	32.0	SH 36	SR 3635	25
52002170	SNR 42/35	35.0	32.0	SH 42	SR 4235	10
52002180	SNR 42/38	38.0	35.0	SH 42	SR 4238	10
52002190	SNR 42/40	40.0	36.0	SH 42	SR 4240	10
52002200	SNR 48/40	40.0	36.0	SH 48	SR 4840	10
52002210	SNR 48/44	44.0	40.0	SH 48	SR 4244	10

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Plastic protective cable conduit systems

SILVYN® SI/SP/SP-PU/BRAID	758
SILVYN® EL/ELÖ/ELT	769
SILVYN® FPS/FD-PU	774

Metal protective cable conduit systems

SILVYN® AS/EDU-AS/AS-P	777
------------------------	-----

Plastic protective cable conduit systems

SILVYN® SI/SP/SP-PU	779
SILVYN® FPS/FD-PU	780

Parallel corrugated protective cable conduit systems

SILVYN® RILL	782
SILVYN® HCC	794
SILVYN® FPAS	797
Protective cable conduit system SILVYN® MAXI PA	806
SILVYN® SPLIT	808
SILVYN® RILL PA6 SINUS	811

Metal protective cable conduit systems

SILVYN® AS/EDU-AS/AS-P	812
Protective cable conduit system SILVYN® SSUE	820
SILVYN® UI 511 stainless steel	822

Impermeable protective cable conduit systems

Protective cable conduit system SILVYN® CNP	824
Impermeable conduits	826
Protective cable conduit system SILVYN® LCC-2 / LCCH-2	834
Protective cable conduit system SILVYN® LTP	838

SILVYN® processing tools

Cutting tools for protective cable conduit systems	840
SILVYN® mounting angles	841
SILVYN® conduit cable clamps	842

SILVYN®

Protective cable conduit- and cable carrier systems



ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Plastic protective cable conduit systems

SILVYN characteristics	757
SILVYN® SI/SP/SP-PU/BRAID	
SILVYN® BRAID PA6 / SILVYN® SNAP PET / SILVYN® SHRINK BRAID PET	New 758
SILVYN® SI	759
SILVYN® SP	760
SILVYN® SP-PU	761
SILVYN® SSV-M	762
SILVYN® SSVZ-M	763
SILVYN® USK-M	764
SILVYN® USK	765
SILVYN® SSV	766
SILVYN® SSVZ	767
SILVYN® SCH	768
SILVYN® EL/ELÖ/ELT	
SILVYN® EL	New 769
SILVYN® ELÖ	New 770
SILVYN® ELT	New 771
SILVYN® MPC / SILVYN® MPC-M	New 772
SILVYN® MPC 90° / SILVYN® MPC 90° M	New 773
SILVYN® FPS/FD-PU	
SILVYN® FPS	774
SILVYN® FD-PU	775
SILVYN® MSK-M EE	776

Metal protective cable conduit systems

SILVYN® AS/EDU-AS/AS-P	
SILVYN® US-M	777
SILVYN® US	778

Plastic protective cable conduit systems

SILVYN® SI/SP/SP-PU	
SILVYN® USK-M	779
SILVYN® FPS/FD-PU	
SILVYN® LKI / SILVYN® LKI-M	780
SILVYN® EE-K	781

Parallel corrugated protective cable conduit systems

SILVYN® RILL	
SILVYN® RILL PA 6	782
SILVYN® RILL PA 12	783
SILVYN® KLICK-GM	784
SILVYN® KLICK 90° M	785
SILVYN® KLICK GPZ-M	786
SILVYN® KSE	787
SILVYN® KLICK-GP	788
SILVYN® KLICK-GPZ	789
SILVYN® KLICK 90° PG	790
SILVYN® KLICK-Y / SILVYN® KLICK-Y (TPE)	791
SILVYN® KLICK-S / SILVYN® KLICK-D / SILVYN® KLICK-V	792
SILVYN® KLICK-RH	793
SILVYN® K-EM	793
SILVYN® HCC	
SILVYN® HCC	794
SILVYN® HG-M / SILVYN® HW-M	795
SILVYN® DUO-M	796
SILVYN® SCLX	796
SILVYN® FPAS	
SILVYN® FPAS	797
SILVYN® FPAG-M	798
SILVYN® FPAX-M	799
SILVYN® FPAG 90° M	800
SILVYN® FLEXILOK PG / SILVYN® FLEXILOK M	801
SILVYN® FLEXILOK 90° PG / SILVYN® FLEXILOK 90° M	802
SILVYN® FPAG 90° PG / SILVYN® FPAG	803
SILVYN® FCL	804
SILVYN® FPAC	805
SILVYN® KSE-M	805
Protective cable conduit system SILVYN® MAXI PA	
SILVYN® MAXI PA	806
SILVYN® AFW-PA / SILVYN® gasket AFG-PA / AFW-PA / SILVYN® AFG-PA	807

SILVYN® SPLIT	
SILVYN® SPLIT	808
SILVYN® SPLIT COS / SILVYN® SPLIT GMP-M / SILVYN® SPLIT COV	809
SILVYN® SPLIT GMP-M	New 810
SILVYN® RILL PA6 SINUS	
SILVYN® RILL PA6 SINUS	811

Metal protective cable conduit systems


SILVYN® AS/EDU-AS/AS-P	
SILVYN® AS	812
SILVYN® EDU-AS	813
SILVYN® EMC AS-CU	814
SILVYN® AS-P	815
SILVYN® MSK-M US	816
SILVYN® US-M	817
SILVYN® US	818
SILVYN® US-MS-DR / SILVYN® US-EDU-AS / SILVYN® US-AS	819
Protective cable conduit system SILVYN® SSUE	
SILVYN® SSUE	820
SILVYN® LGEF-M / SILVYN® LGES-M	821
SILVYN® UI 511 stainless steel	
SILVYN® UI 511	822
SILVYN® UI 511 -EG / SILVYN® UI 511 -G	823

Impermeable protective cable conduit systems

Protective cable conduit system SILVYN® CNP	
SILVYN® CNP / SILVYN® CNP conduit gland	824
SILVYN® HIPOJACKET CR / SILVYN® HIPROSILTAPE / SILVYN® HIPOJACKET	New 825
Impermeable conduits	
SILVYN® HTDL	826
SILVYN® EF	827
SILVYN® OR	827
SILVYN® HCX	828
SILVYN® HFX	828
SILVYN® AMW-M / SILVYN® AMHW-M / SILVYN® AMG-M	829
SILVYN® AMG	830
SILVYN® FDG/FDHW/FDW	831
SILVYN® FG	New 832
SILVYN® FG AMG-M	New 833
SILVYN® TB-E	833
Protective cable conduit system SILVYN® LCC-2 / LCCH-2	
SILVYN® LCC-2	834
SILVYN® LCCH-2	835
SILVYN® LGS-2 / SILVYN® LGS-2-M / SILVYN® LGF-2-M	836
SILVYN® LCW-M / SILVYN® LCG-M	837
Protective cable conduit system SILVYN® LTP	
SILVYN® LTP	838
SILVYN® LTPW-M / SILVYN® LTPS-M / SILVYN® LTPG-M	839

SILVYN® processing tools

Cutting tools for protective cable conduit systems	
SILVYN® CC01	840
SILVYN® ANAC-WZ	840
SILVYN® BMC-M	840
SILVYN® mounting angles	
SILVYN® BW-K-M	841
SILVYN® BW-M	841
SILVYN® conduit cable clamps	
SILVYN® RKS	842
SILVYN® CHAIN Serie Light / Medium	843
SILVYN® CHAIN Serie Heavy/ Sliding	844
SILVYN® CHAIN Serie Protection / Robot	845
SILVYN® CHAIN Serie Steel / Installation types	846
Overview cables for power chain application	847
SILVYN® CHAIN KITS	New 848

Conduit Types		Characteristics													
	Nominal Width from - to mm	Temperature Range	Material	Flexibility	Compression Strength	Tensile Strength	Flexion Behaviour	Oil Resistance	Solvent Resistance	Protection against hot chips	Reversed Bending Fatigue Strength	Flame Resistance	Halogen-free	UV Resistance	Approvals
	Protective conduits plastic														
SILVYN® BRAID PA6	4,0 – 32,0	-55 °C to +125° C	Polyamide 6	●	○	●	●	●	●	○	●	●	●	●	-
SILVYN® SNAP PET	25,0	-55 °C to +150° C	Polyester	●	○	●	●	●	●	○	●	●	○	●	-
SILVYN® SHRINK BRAID PET	6,0 – 35,0	-55 °C to +125° C	Polyamide 6	●	○	●	●	●	●	○	●	●	○	●	-
SILVYN® SI	7,0 – 32,0	-5 °C to +80° C	Soft PVC	●	○	●	●	●	●	○	●	●	○	●	-
SILVYN® SP	10,0 – 50,0	-20 °C to +60° C	Soft PVC with Hard PVC Spiral	●	●	●	●	●	●	○	●	●	○	●	-
SILVYN® SP-PU	10,0 – 38,0	-20 °C to +90° C	PUR with Hard PVC Spiral	●	●	●	●	●	●	○	●	●	○	●	-
SILVYN® EL	10,0 – 50,0	-20 °C to +70° C	Soft PVC with Hard PVC Spiral	●	●	●	●	●	●	○	●	●	○	●	UR
SILVYN® ELÖ	10,0 – 50,0	-20 °C to +70° C	Soft PVC with Hard PVC Spiral	●	●	●	●	●	●	○	●	●	○	●	UR
SILVYN® ELT	10,0 – 50,0	-20 °C to +90° C	Soft PVC with Hard PVC Spiral	●	●	●	●	●	●	○	●	●	○	●	UR
SILVYN® FPS	7,0 – 48,0	-20 °C to +80° C	Soft PVC with insul. Spring Steel Wire	●	●	●	●	●	●	○	●	●	○	●	UR, VDE, NEMKO
SILVYN® FD-PU	7,0 – 48,0	-40 °C to +80° C	PUR with insul. Spring Steel Wire	●	●	●	●	●	●	○	●	●	○	●	VDE
Protective conduits Polyamide corrugated															
SILVYN® RILL PA 6	6,5 – 48,0	-40 °C to +115° C	Polyamide 6	●	●	●	●	●	●	○	●	●	●	●	UR, VDE, GGVS, DNV, Lloyds, DB
SILVYN® RILL PA12	6,5 – 48,0	-50 °C to +100° C	Polyamide 12	●	●	●	●	●	●	○	●	●	●	●	VDE, Lloyds, DB
SILVYN® HCC	9,4 – 54,6	-25 °C to +100° C	Polyamide 6	●	●	●	●	●	●	○	●	●	●	●	DB
SILVYN® FPAS	6,3 – 56,3	-40 °C to +120° C	Polyamide 6	●	●	●	●	●	●	○	●	●	●	●	UR, Lloyds, Link up
SILVYN® SPLIT	8,9 – 43,1	-40 °C to +120° C	Polyamide 6	●	●	●	●	●	●	○	●	●	●	●	-
SILVYN® RILL PA6 SINUS	6,7 – 23,2	-40 °C to +140° C	Polyamide 6	●	○	●	●	●	●	○	●	●	●	●	GGVS, NFR-13-903
SILVYN® MAXI PA	70,0 – 95,0	-40 °C to +115° C	Polyamide 6	●	●	●	●	●	●	○	●	●	●	●	UR
Protective conduits metal															
SILVYN® AS	8,0 – 51,0	to +220 °C	Galvanized Steel Strip	●	●	●	●	●	●	●	●	●	●	●	VDE
SILVYN® EDU - AS	7,0 – 49,0	to +220 °C	Galvanized Steel, Braiding: galvanized steel wire	●	●	●	●	●	●	●	●	●	●	●	VDE
SILVYN® EMC AS-CU	7,0 – 49,0	to +220 °C	Galvanized Steel, Braiding: tinned copper	●	●	●	●	●	●	●	●	●	●	●	VDE
SILVYN® AS - P	7,0 – 49,0	-25 °C to +80 °C	Galvanized Steel, Coating PVC	●	●	●	●	●	●	○	●	●	○	●	VDE
SILVYN® SSUE	6,8 – 28,1	-50 °C to +400 °C	Stainless Steel AISI 316	●	●	●	●	●	●	●	●	●	●	●	Link up
SILVYN® UI 511	9,6 – 52	-100 °C to +600 °C	Stainless Steel AISI 304	●	●	●	●	●	●	●	●	●	●	●	-
SILVYN® HIPROJACKET	6,0 – 76	-40 °C to +1640 °C	fibre glass with iron oxide silicone coat	●	○	●	●	●	●	●	●	●	●	●	SNCF (rolling stock)
Protective conduits liquidtight															
SILVYN® CNP	12,6 – 40,7	-20 °C to +60 °C	PVC Mix with Nylon Braid	●	○	●	●	●	●	○	●	●	○	●	UL, CSA
SILVYN® HTDL	12,6 – 51,6	-40 °C to +105 °C	Galvanized Steel, Copper wire, Coating PVC Mix	●	●	●	●	●	●	○	●	●	○	●	UL, CSA
SILVYN® EF	10,1 – 51,6	-25 °C to +70 °C	Galvanized Steel, Coating PVC Mix	●	●	●	●	●	●	○	●	●	○	●	-
SILVYN® OR	12,6 – 51,6	-15 °C to +100 °C	Galvanized Steel, Coating PVC Mix	●	●	●	●	●	●	○	●	●	○	●	-
SILVYN® HCX	12,6 – 35,1	-55 °C to +145 °C	Galvanized Steel, Coating Elastomer plastic	●	●	●	●	●	●	○	●	●	○	●	SNCF (rolling stock)
SILVYN® HFX	10,1 – 35,1	-45 °C to +105 °C	Galvanized Steel, Coating PUR	●	●	●	●	●	●	○	●	●	○	●	SNCF (rolling stock)
SILVYN® FG	12,6 – 51,6	-20 °C to +80 °C	Galvanized Steel, PVC-mix special sheath	●	●	●	●	●	●	○	●	●	○	●	FDA
SILVYN® LCC - 2	6,8 – 57,5	-15 °C to +70 °C	Galvanized Steel, Coating PVC	●	●	●	●	●	●	○	●	●	○	●	-
SILVYN® LCCH - 2	10,2 – 48,4	-25 °C to +90 °C	Galvanized Steel, Coating plastic halogen-free	●	●	●	●	●	●	○	●	●	○	●	UR, Lloyds, Link up
SILVYN® LTP	10,0 – 63,0	-20 °C to +105 °C	Galvanized Steel, Coating Soft PVC	●	●	●	●	●	●	○	●	●	○	●	Lloyds

● = very high ● = high ● = medium ● = low ○ = none

New

SILVYN® BRAID PA6 / SILVYN® SNAP PET / SILVYN® SHRINK BRAID PET



SILVYN® BRAID PA6

SILVYN® SNAP PET

SILVYN® SHRINK BRAID PET

Benefits

SILVYN® BRAID PA6

- Protection against dust
- Abrasion protection
- Cut into length without frizzle on the conduit's end
- Simple, fast cable bundling
- Can be cut without the need for a thermo-cutting tool

SILVYN® SNAP PET

- Protection against dust
- Cables can be guided in or out of the SILVYN SNAP at any point.
- Tidies away cables
- Simple, fast cable bundling
- Self-wrapping

SILVYN® SHRINK BRAID PET

- Protection against dust
- Additional abrasion protection for critical areas
- Cut into length without frizzle on the conduit's end
- Simple, fast cable bundling

Application range

SILVYN® BRAID PA6

- Easy cable protection
- Additional insulation
- Bundling and guiding of cables and wires
- Low rodent-protection

SILVYN® SNAP PET

- Easy cable protection
- Bundling and guiding of cables and wires
- Cable harness

SILVYN® SHRINK BRAID PET

- Easy cable protection
- Additional insulation
- Bundling and guiding of cables and wires
- Rodent-protection

Product features

SILVYN® BRAID PA6

- Abrasion-resistant
- Flexible
- Can be cut at cold temperatures

SILVYN® SNAP PET

- Abrasion-resistant
- Flexible
- Abrasion-resistant
- Self-wrapping
- Cut longitudinally

SILVYN® SHRINK BRAID PET

- Abrasion-resistant
- Flexible
- Shrinkable
- Shrinking ratio: 2:1
- Maximum length lost after shrinkage is less than 15 %

Approvals



Design

SILVYN® BRAID PA6

- Polyamide 6.6 - halogen-free

SILVYN® SNAP PET

- Polyester - PET with shrinkable Polyolefin fibres

SILVYN® SHRINK BRAID PET

- Polyester - PET with shrinkable Polyolefin fibres

Suitable tools

SILVYN® BRAID PA6

- SILVYN® CC01 refer to page 840
- 501 multipurpose shears refer to page [P1242]
- Multipurpose shears A and B refer to page 902

SILVYN® SNAP PET

- SILVYN® CC01 refer to page 840

SILVYN® SHRINK BRAID PET

- Cutting tools for various applications refer to page 902
- SILVYN® CC01 refer to page 840



Info

- Cut into length without frizzle on the conduit's end
- Saves time

Technical data



Upon request

SILVYN® BRAID PA6

Bulk containers on rolls

SILVYN® SHRINK BRAID PET

Bulk containers on rolls



Note

SILVYN® BRAID PA6

Halogen and cadmium-free
Self-extinguishing according to DIN 75200/
FMVSS302 and DIN5510

SILVYN® SNAP PET

Halogen and cadmium-free
Self-extinguishing in acc. UL 94 V0

SILVYN® SHRINK BRAID PET

No dielectric strength
Self-extinguishing according to DIN 75200/
FMVSS302 and DIN5510



Colour delivered

SILVYN® BRAID PA6

Black (RAL 9005), UV-resistant

SILVYN® SNAP PET

Black, white, grey, orange

SILVYN® SHRINK BRAID PET

Black (RAL 9005), UV-resistant



Material

SILVYN® BRAID PA6

Polyamide 6.6 - halogen-free

SILVYN® SNAP PET

Polyester - PET braid sidewise rolled up

SILVYN® SHRINK BRAID PET

Polyamide 6.6 - halogen-free



Temperature range

SILVYN® BRAID PA6

-55°C to +125°C

SILVYN® SNAP PET

-55°C to +150°C

SILVYN® SHRINK BRAID PET

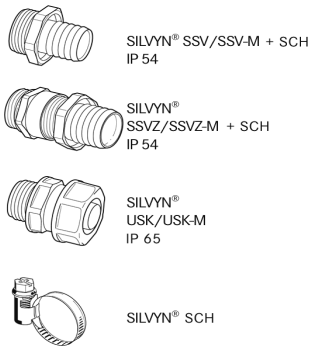
-55°C to +125°C

Article number	D (mm)	Clamping range (mm)	PU (m)
SILVYN® BRAID PA6			
61721260		4.0 - 10.0	20
61721261		10.0 - 14.0	15
61721262		14.0 - 24.0	15
61721263		14.0 - 24.0	10
61721264		18.0 - 26.0	10
61721265		32.0 - 44.0	5
SILVYN® SNAP PET			
61721280	25.0		25
61721281	25.0		25
61721283	25.0		25
61721282	25.0		25
SILVYN® SHRINK BRAID PET			
61721270	27.0	6.0 - 12.0	5
61721271	48.0	12.0 - 25.0	5
61721272	56.0	15.0 - 30.0	5
61721274	115.0	35.0 - 70.0	5
61721273	86.0	25.0 - 50.0	5

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX

SILVYN® SI



SILVYN® SI

Benefits

- Protection against dust
- Protection against humidity
- Low abrasion protection

Application range

- Easy cable protection
- Additional insulation
- Bundling and guiding of cables and wires

Product features

- Flexible
- Soft

Approvals



Design

- Soft PVC conduit

Technical data

Note
 Flame-retardant and self-extinguishing
 Dielectric strength: 25 kV/mm
 Tear-resistance: 23 N/mm²
 Shore A hardness: 75 °C to 90 °C

Colour delivered
 Silver grey (RAL 7001)

Material
 Soft PVC

Temperature range
 -5°C to +80°C

Article number	Internal Ø x external Ø (mm)	Inner Ø (mm)	Suitable for SILVYN® SSV-M/SSVZ-M	Suitable for SILVYN® SSV/SSVZ	Suitable for SILVYN® SCH	PU ring (m)
SILVYN® SI						
61713210	7.0 x 9.0	7.0	12.1/-			50
61713240	9.0 x 12.0	9.0	12.2/-			50
61713270	11.0 x 14.0	11.0	16.1 / -		10 - 16 S	50
61713300	13.0 x 16.0	13.0	16.2 / -		12 - 20 S	50
61713330	14.0 x 18.0	14.0	20.1 / 20/11/14		12 - 20 S	50
61713360	18.0 x 22.0	18.0	20.3 / 20/13/18	13,5,1	16 - 25 S	50
61713390	23.0 x 28.0	23.0	25 / 25/21/24	21,1	25 - 40 S	50
61713420	32.0 x 38.0	32.0	32 / 32/29/32	29,2	32 - 50 S	50

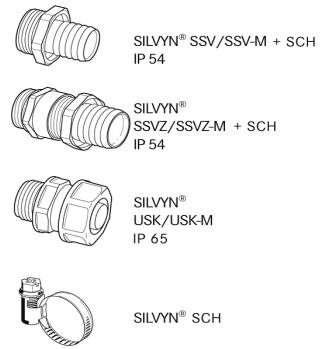
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® SSV-M refer to page 762
- SILVYN® SSVZ-M refer to page 763
- SILVYN® MPC-M refer to page 772
- SILVYN® MPC refer to page 772
- SILVYN® MPC 90° M refer to page 773
- SILVYN® MPC 90° refer to page 773
- SILVYN® SSV refer to page 766
- SILVYN® SSVZ refer to page 767
- SILVYN® SCH refer to page 768

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

SILVYN® SP



SILVYN® SP

■ Benefits

- Protection against mechanical stress
- Protection against dust
- Protection against humidity
- Low abrasion protection

■ Application range

- Cable protection
- Additional insulation
- Bundling and guiding of cables and wires

■ Product features

- Flexible
- Dimensionally stable

■ Approvals



■ Design

- Hard PVC inner spiral
- Soft PVC outer sheath

■ Note

- Black (RAL 9005) is available upon request

■ Technical data

RAL	Colour delivered Silver grey (RAL 7001)
	Material Soft PVC with hard PVC spiral, SBR/NBR
	Temperature range -15 °C to +60 °C

Article number	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Suitable for SILVYN® SSV-M/SSVZ-M	Suitable for SILVYN® USK-M	Suitable for SILVYN® SSV/SSVZ	Suitable for SILVYN® USK	Suitable for SILVYN® SCH	PU ring (m)
SILVYN® SP									
61714000	10.0 x 14.0	50	10.0	16.1 / 16/9/10	12 x 1,5	9,1	9	10 - 16 S	25
61714010	12.0 x 16.0	60	12.0	16.2 / 16/9/12	16 x 1,5	9,2	11	12 - 20 S	25
61714020	14.0 x 18.0	70	14.0	20.1 / 20/11/14		11,1	13,5	12 - 20 S	25
61714100	16.0 x 20.0	70	16.0	- / 20/11/16	20 x 1,5	11,2	16	16 - 25 S	25
61714110	22.0 x 27.0	90	22.0	25 / 20/16/22	25 x 1,5	16,1	21	20 - 32 S	25
61714120	30.0 x 36.0	140	30.0	32 / 32/29/30	32 x 1,5	29,1	29	25 - 40 S	25
61714070	38.0 x 44.0	190	38.0	40 / 40/36/38	40 x 1,5	36,1	36	32 - 50 S	25
61714090	50.0 x 56.0	270	50.0	63 / 63/48/50	50 x 1,5	48,1	48	40 - 60 S	25

Photographs are not to scale and do not represent detailed images of the respective products.

■ Similar products

- SILVYN® SP-PU refer to page 761

■ Accessories

- SILVYN® SSV-M refer to page 762
- SILVYN® SSVZ-M refer to page 763
- SILVYN® USK-M refer to page 764
- SILVYN® MPC-M refer to page 772
- SILVYN® MPC refer to page 772
- SILVYN® MPC 90° M refer to page 773
- SILVYN® MPC 90° refer to page 773
- SILVYN® USK refer to page 765
- SILVYN® SSV refer to page 766
- SILVYN® SSVZ refer to page 767
- SILVYN® SCH refer to page 768

SILVYN® SP-PU



SILVYN® SP-PU

Benefits

- Protection against mechanical stress
- Abrasion protection
- Protection against chemicals
- UV-resistant and weather-resistant

Application range

- Cable protection
- Bundling and guiding of cables and wires
- Outdoors
- In harsh environment

Product features

- Tear-resistant
- Oil and petrol-resistant
- Plasticiser-free
- Resistant to microbes
- Dimensionally stable

Approvals



Design

- Hard PVC inner spiral
- Polyurethane outer sheath

Technical data

- RAL Colour delivered**
Black (RAL 9005), UV-resistant
- Material**
PUR with hard PVC spiral
- Temperature range**
-20 °C to +90 °C

Article number	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Suitable for SILVYN® SSV-M/SSVZ-M	Suitable for SILVYN® USK-M	Suitable for SILVYN® SSV/SSVZ	Suitable for SILVYN® USK	Suitable for SILVYN® SCH	PU ring (m)
SILVYN® SP-PU									
61793620	10.0 x 14.0	50	10.0	16.1 / 16/9/10	12 x 1,5	9,1	9	10 - 16 S	25
61793630	12.0 x 16.0	60	12.0	16.2 / 16/9/12	16 x 1,5	9,2	11	12 - 20 S	25
61793640	14.0 x 18.0	70	14.0	20.1 / -	-	11,1	13,5	12 - 20 S	25
61793650	16.0 x 20.0	80	16.0	- / 20/11/16	20 x 1,5	11,2	16	16 - 25 S	25
61793660	22.0 x 27.0	110	22.0	25 / 20/16/22	25 x 1,5	16,1	21	20 - 32 S	25
61793670	30.0 x 36.0	150	30.0	32 / 32/29/30	32 x 1,5	29,1	29	25 - 40 S	25
61793680	38.0 x 44.0	200	38.0	40 / 40/36/38	40 x 1,5	36,1	36	32 - 50 S	25

Photographs are not to scale and do not represent detailed images of the respective products.

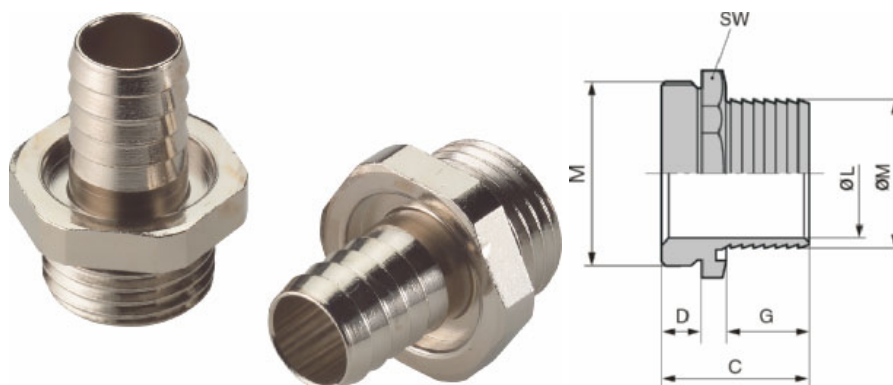
Similar products

- SILVYN® FD-PU refer to page 775

Accessories

- SILVYN® SSV-M refer to page 762
- SILVYN® SSVZ-M refer to page 763
- SILVYN® USK-M refer to page 764
- SILVYN® MPC-M refer to page 772
- SILVYN® MPC refer to page 772
- SILVYN® MPC 90° M refer to page 773
- SILVYN® MPC 90° refer to page 773
- SILVYN® USK refer to page 765
- SILVYN® SSV refer to page 766
- SILVYN® SSVZ refer to page 767
- SILVYN® SCH refer to page 768

SILVYN® SSV-M



SILVYN® SSV-M

Benefits

- Conduit gland with high tensile strength for plastic conduits

Application range

- In combination with protective conduit
- SILVYN® SI
- SILVYN® SP
- SILVYN® SP-PU

Product features

- High-tensile
- Robust
- Compact design

Approvals



Design

- Metric connection thread
- Conduit entry with special grip profile

Note

- Necessary conduit clamp SILVYN® SCH

Suitable conduits

- SILVYN® SI Page 759
- SILVYN® SP Page 760
- SILVYN® SP-PU Page 761

Technical data

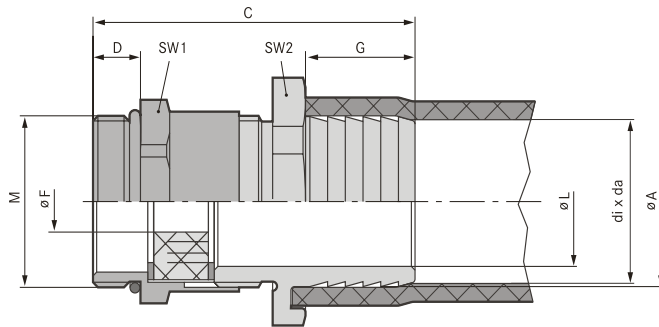


Material
Body: nickel-plated brass
O-ring: NBR

Article number	Connection thread M	Clear opening (mm)	Overall length, C (mm)	Thread length, D (mm)	SW (mm)	Suitable for SILVYN® SCH	Suitable for SILVYN® SI	Suitable for SILVYN® SP	Suitable for SILVYN® SP-PU	Pieces / PU
SILVYN® SSV-M										
52002827	12 x 1.5/1	7.0	25.0	8.0	16.0	10 - 16 S	7.0 x 9.0			50
52002828	12 x 1.5/2	9.0	25.0	8.0	19.0	10 - 16 S	9.0 x 12.0			50
52002840	16/1 x 1.5	8.0	25.0	8.0	19.0	10 - 16 S	11 x 14	10 x 14	10 x 14	50
52002839	16/2 x 1.5	10.0	25.0	8.0	19.0	12 - 20 S	13 x 16	12 x 16	12 x 16	50
52002841	20/1 x 1.5	12.0	25.0	8.0	22.0	16 - 25 S	14 x 18			50
52002842	20/3 x 1.5	15.5	25.0	8.0	25.0	20 - 32 S	18 x 23			50
52002843	25x1.5	19.0	29.5	8.5	32.0	20 - 32 S	23 x 28	22 x 27	22 x 27	25
52002844	32 x 1.5	27.0	32.5	9.5	40.0	32 - 50 S	32 x 38	30 x 36	30 x 36	25
52002845	40x1.5	34.0	36.0	11.0	50.0	32 - 50 S		38 x 44	38 x 44	10
52002846	50 x 1.5	41.0	39.0	12.0	57.0	40 - 60 S		45 x 51		5
52002847	63 x 1.5	46.0	43.0	12.0	67.0	40 - 60 S		50 x 56		5

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® SSVZ-M



SILVYN® SSVZ-M

Benefits

- Conduit gland with high tensile strength for plastic conduits
- High-tensile cable protection

Application range

- In combination with protective conduit
- SILVYN® SI
- SILVYN® SP
- SILVYN® SP-PU

Product features

- High-tensile
- Robust
- Compact design
- Cable strain relief
- Cable sealing

Approvals



Design

- Metric connection thread
- Integrated cable gland
- Conduit entry with special grip profile

Note

- Necessary conduit clamp SILVYN® SCH
- With long connection thread (on request)
- With VITON® incised sealing and O-ring (on request)

Suitable conduits

- SILVYN® SI Page 759
- SILVYN® SP Page 760
- SILVYN® SP-PU Page 761

Technical data



Material
 Body: nickel-plated brass
 Incised sealing ring: CR
 O-ring: NBR



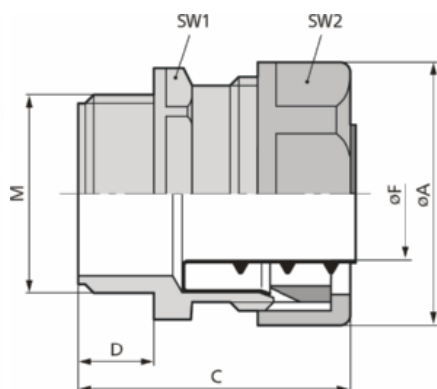
Temperature range
 -20°C to +80°C

Article number	Connection thread M	Clear opening (mm)	Function thread PG	Overall length, C (mm)	Thread length, D (mm)	SW 1/2 mm	Suitable for SILVYN® SCH	Suitable for SILVYN® SI	Suitable for SILVYN® SP	Suitable for SILVYN® SP-PU	Pieces / PU
SILVYN® SSVZ-M											
55501850	16 x 1.5/1	8.0	9.0	39.0	5.0	19 / 18	10 - 16 S		10 x 14	10 x 14	50
55501860	16 x 1.5/2	10.0	9.0	39.0	5.0	19 / 18	12 - 20 S		12 x 16	12 x 16	50
55501870	20 x 1.5/1	12.0	11.0	39.6	6.0	22 / 22	16 - 25 S	14 x 18	14 x 18	14 x 18	50
55501880	20 x 1.5/2	12.5	11.0	39.6	6.0	22 / 22	16 - 25 S		16 x 20	16 x 20	50
55501890	20 x 1.5/3	15.5	13.0	43.0	6.0	25 / 22	20 - 32 S	18 x 23			50
55501900	20 x 1.5/4	16.0	16.0	44.0	6.0	30 / 24	20 - 32 S		22 x 27	22 x 27	25
55501910	25 x 1.5	20.0	21.0	48.0	7.0	32 / 30	20 - 32 S	23 x 28			25
55501920	32 x 1.5/1	27.0	29.0	53.6	8.0	40 / 40	25 - 40 S		30 x 36	30 x 36	25
55501930	32 x 1.5/2	30.0	29.0	53.6	8.0	42 / 40	32 - 50 S	32 x 38			25
55501940	40 x 1.5	34.0	36.0	61.6	8.0	52 / 50	32 - 50 S		38 x 44	38 x 44	10
55501950	50 x 1.5	41.0	42.0	68.6	9.0	57 / 57	40 - 60 S		45 x 51		5
55501960	63 x 1.5	46.0	48.0	71.6	10.0	64 / 66	40 - 60 S		50 x 56		5

Viton® is a registered trademark of DuPont de Nemours

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® USK-M



SILVYN® USK-M

■ Benefits

- Fast and easy assembly
- Vibration protection
- No extra parts necessary

■ Application range

- In combination with protective conduit
- SILVYN® FPS/ FD-PU
- SILVYN® SI/SP/SP-PU
- Indoor applications
- Light mechanical stress

■ Product features

- Large wrench sizes

■ Design

- Metric connection thread
- Hexagonal collar
- Threaded sleeve
- Cap nut

■ Note

- Included: SILVYN® EE-K inner sleeve

■ Suitable conduits

- SILVYN® FPS Page 774
- SILVYN® FD-PU Page 775
- SILVYN® SP Page 760
- SILVYN® SP-PU Page 761

■ Technical data

RAL	Colour delivered Silver grey (RAL 7001)
Material	PP
IP	Protection rating IP 54
Temperature range	-10°C to +110°C

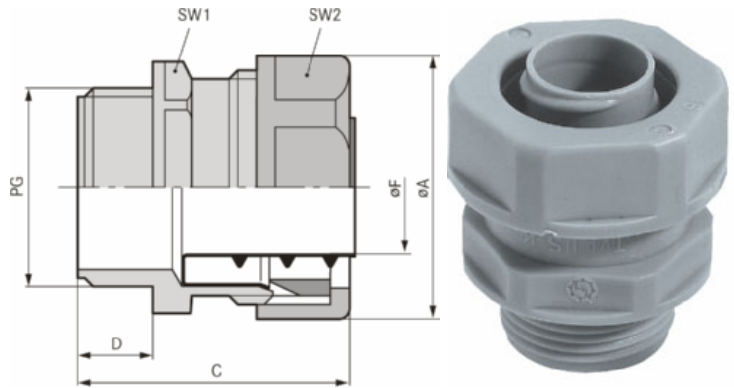
■ Approvals



Article number	Connection thread M	Clear opening (mm)	Overall length, C (mm)	Thread length, D (mm)	SW 1/2 mm	Suitable for SILVYN® FD-PU/ FPS	Suitable for SILVYN® SP	Suitable for SILVYN® SP-PU	Pieces / PU
SILVYN® USK-M									
55501300	10 x 1.0	6.0	40.0	10.0	18 / 16	7 x 10			50
55501310	12 x 1.5	9.0	43.0	12.0	23 / 21	10 x 14	10 x 14	10 x 14	50
55501320	16 x 1.5	13.0	43.0	12.0	27 / 24	13 x 17	12 x 16	12 x 16	50
55501330	20 x 1.5	14.5	44.0	13.0	32 / 29	16 x 21	16 x 20	16 x 20	50
55501340	25 x 1.5	19.5	50.0	13.0	40 / 36	22 x 27	22 x 27	22 x 27	25
55501350	32 x 1.5	27.0	51.0	15.0	49 / 45	29 x 36	30 x 36	30 x 36	25
55501360	40 x 1.5	36.0	51.0	15.0	58 / 53	38 x 45	38 x 44	38 x 44	25
55501370	50 x 1.5	46.0	58.0	16.0	70 / 65	48 x 56	50 x 56		10

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® USK



SILVYN® USK

Benefits

- Fast and easy assembly
- Vibration protection
- No extra parts necessary

Application range

- In combination with protective conduit
- SILVYN® FPS/ FD-PU
- SILVYN® SI/SP/SP-PU
- Indoor applications
- Light mechanical stress

Product features

- Large wrench sizes

Design

- PG connection thread
- Hexagonal collar
- Threaded sleeve
- Cap nut

Note

- Included: SILVYN® EE-K inner sleeve

Suitable conduits

- SILVYN® FPS Page 774
- SILVYN® FD-PU Page 775
- SILVYN® SP Page 760
- SILVYN® SP-PU Page 761

Technical data

RAL Colour delivered
Silver grey (RAL 7001)

Material
PP

IP Protection rating
IP 54

Temperature range
-10°C to +110°C

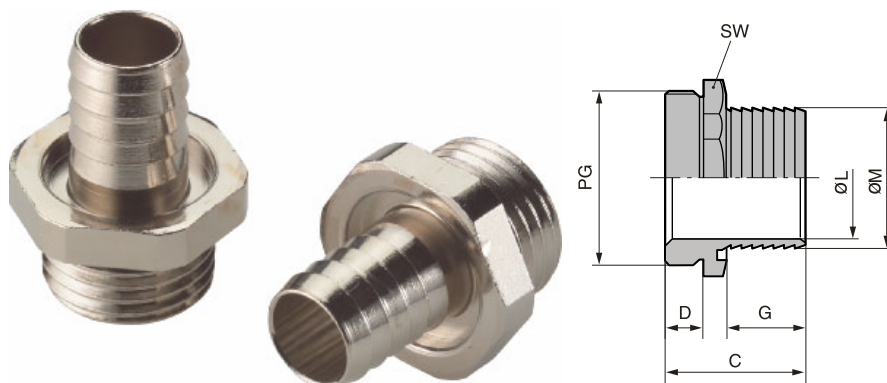
Approvals



Article number	PG size	Clear opening (mm)	Overall length, C (mm)	Thread length, D (mm)	SW 1/2 mm	Suitable for SILVYN® FD-PU/FPS	Suitable for SILVYN® SP/SP-PU	Pieces / PU
SILVYN® USK								
52005810	7	6.0	40.0	10.0	18 / 16	7 x 10		50
52005820	9	9.0	41.0	10.0	23 / 21	10 x 14	10 x 14	50
52005830	11	11.0	41.0	10.0	27 / 24	13 x 17	12 x 16	50
52005840	13.5	13.0	41.0	10.0	29 / 26	15 x 19	14 x 18	50
52005850	16	14.5	42.0	11.0	32 / 29	16 x 21	16 x 20	50
52005860	21	19.5	48.0	11.0	40 / 36	22 x 27	22 x 27	25
52005870	29	27.0	48.0	12.0	49 / 45	29 x 36	30 x 36	25
52005880	36	36.0	48.0	12.0	63 / 53	38 x 45	38 x 44	25
52005900	48	46.0	57.0	15.0	70 / 65	48 x 56	50 x 56/-	10

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® SSV



SILVYN® SSV

■ Benefits

- Conduit gland with high tensile strength for plastic conduits

■ Application range

- In combination with protective conduit
- SILVYN® SI
- SILVYN® SP
- SILVYN® SP-PU

■ Product features

- High-tensile
- Robust
- Compact design

■ Approvals



■ Design

- PG connection thread
- Conduit entry with special grip profile

■ Note

- Necessary conduit clamp SILVYN® SCH

■ Suitable conduits

- SILVYN® SI Page 759
- SILVYN® SP Page 760
- SILVYN® SP-PU Page 761

■ Technical data



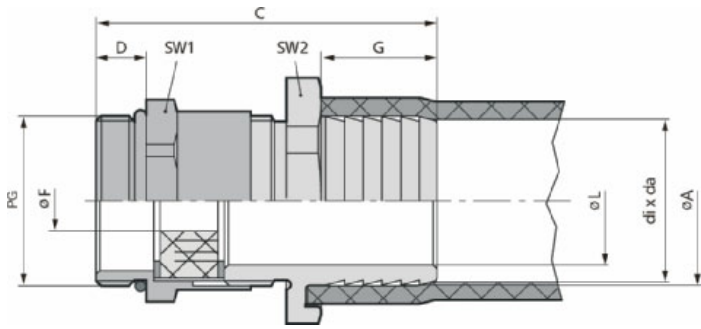
Material

Body: nickel-plated brass
O-ring: NBR

Article number	Article designation	PG size	Clear opening (mm)	Overall length, C (mm)	Thread length, D (mm)	SW (mm)	Suitable for SILVYN® SCH	Suitable for SILVYN® SI	Suitable for SILVYN® SP	Suitable for SILVYN® SP-PU	Pieces / PU
SILVYN® SSV											
52003070	SILVYN SSV PG 9 / 1	9	8.0	25.0	5.5	19.0	10 - 16 S		10 x 14	10 x 14	100
53800020	SILVYN SSV PG 9 / 2	9	10.0	25.0	5.5	19.0	12 - 20 S		12 x 16	12 x 16	100
52003080	SILVYN SSVZ PG 11 / 1	11	12.0	25.0	6.0	22.0	16 - 25 S		14 x 18	14 x 18	50
52024560	SILVYN SSVZ PG 11 / 1	11	14.0	25.0	6.0	22.0	16 - 25 S		16 x 20	16 x 20	50
52003090	SILVYN SSV PG 13,5	13,5	15.5	27.5	6.5	25.0	20 - 32 S	18 x 22			50
52003100	SILVYN SSV PG 13,5	16	19.0	27.5	7.5	30.0	20 - 32 S		22 x 27	22 x 27	25
52003110	SILVYN SSV PG 21	21	21.0	30.0	8.0	32.0	20 - 32 S	23 x 28			25
53800080	SILVYN SSV PG 29 / 1	29	27.0	33.0	9.5	40.0	25 - 40 S		30 x 36	30 x 36	25
52024640	SILVYN SSV PG 29 / 2	29	30.0	33.0	9.5	42.0	32 - 50 S	32 x 38			25
52002980	SILVYN SSV PG 36	36	34.0	37.0	12.0	52.0	32 - 50 S		38 x 44	38 x 44	10
52002990	SILVYN SSV PG 42	42	41.0	41.0	14.0	57.0	40 - 60 S		45 x 51		5
52013000	SILVYN SSV PG 48	48	46.0	44.0	14.0	64.0	40 - 60 S		50 x 56		5

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® SSVZ



SILVYN® SSVZ

Benefits

- Conduit gland with high tensile strength for plastic conduits
- High-tensile cable protection

Application range

- In combination with protective conduit
- SILVYN® SI
- SILVYN® SP
- SILVYN® SP-PU

Product features

- High-tensile
- Robust
- Compact design
- Cable strain relief
- Cable sealing

Approvals



Design

- PG connection thread
- Integrated cable gland
- Conduit entry with special grip profile

Note

- Necessary conduit clamp SILVYN® SCH
- With long connection thread (on request)
- With VITON® incised sealing and O-ring (on request)

Suitable conduits

- SILVYN® SI Page 759
- SILVYN® SP Page 760
- SILVYN® SP-PU Page 761

Technical data

- Upon request**
 - With 15 mm connection thread
 - With VITON® incised sealing and O-ring (on request)
- Material**
 - Body: nickel-plated brass
 - Incised sealing ring: CR
 - O-ring: NBR
- Temperature range**
 - 20 °C to +80 °C

Article number	Article designation	PG size	Clear opening (mm)	Overall length, C (mm)	Thread length, D (mm)	SW 1/2 mm	Suitable for SILVYN® SCH	Suitable for SILVYN® SI	Suitable for SILVYN® SP	Suitable for SILVYN® SP-PU	Pieces / PU
SILVYN® SSVZ											
52021070	SILVYN SSVZ PG 9/1	9.1	8.0	39.1	6.0	19 / 17	10 - 16 S		10 x 14	10 x 14	50
52021080	SILVYN SSVZ PG 9/2	9.2	10.0	39.1	6.0	19 / 17	12 - 20 S		12 x 16	12 x 16	50
52003020	SILVYN SSVZ PG 11/1	11.1	12.0	39.6	6.0	22 / 20	16 - 25 S		14 x 18	14 x 18	50
52024670	SILVYN SSVZ PG 11/2	11.2	14.0	39.6	6.0	22 / 20	16 - 25 S		16 x 20	16 x 20	50
52003030	SILVYN SSVZ PG 13,5	13.5	15.5	43.1	6.5	25 / 22	20 - 32 S	18 x 22			50
52003040	SILVYN SSVZ PG 16	16.1	19.0	44.1	6.5	30 / 24	20 - 32 S		22 x 27	22 x 27	25
52003050	SILVYN SSVZ PG 21	21.1	21.0	48.1	7.0	32 / 30	20 - 32 S	23 x 28			25
52003060	SILVYN SSVZ PG 29/1	29.1	27.0	53.6	8.0	40 / 40	25 - 40 S		30 x 36	30 x 36	25
52024680	SILVYN SSVZ PG 29/2	29.2	30.0	53.6	8.0	42 / 40	32 - 50 S	32 x 38			25

Viton® is a registered trademark of DuPont de Nemours
Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® SCH



SILVYN® SCH

■ Benefits

- Ensures the tensile strength
- Clamps various conduit sizes with one clamp

■ Application range

- In combination with
- SILVYN® SSV-M/SSVZ-M
- SILVYN® SSV/SSV-Z

■ Product features

- Variable range of clamping force

■ Approvals



■ Design

- Galvanized steel ring
- Worm gear drive

■ Suitable conduits

- SILVYN® SI Page 759
- SILVYN® SP Page 760
- SILVYN® SP-PU Page 761

■ Technical data



Material
Steel, galvanized

Article number	Article designation	Clamping range (mm)	Suitable for SILVYN® SI/SP/SP-PU	Pieces / PU
SILVYN® SCH				
52003130	10 - 16 S	10.0 - 16.0	10 x 14 / 11 x 14	100
52003140	12 - 20 S	12.0 - 20.0	12 x 16 / 13 x 16 / 14 x 18	100
52003160	16 - 25 S	16.0 - 25.0	16 x 20 / 18 x 22 / 18 x 23	100
52003170	20 - 32 S	20.0 - 32.0	22 x 27	100
52009050	25 - 40 S	25.0 - 40.0	30 x 36 / 23 x 28	100
52009061	35 - 50 S	35.0 - 50.0	32 x 38 / 38 x 44	50
52009040	40 - 60 S	40.0 - 60.0	45 x 51 / 50 x 56	25

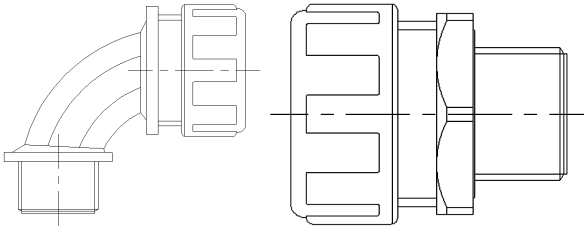
Photographs are not to scale and do not represent detailed images of the respective products.

■ Accessories

- SILVYN® SSV-M refer to page 762
- SILVYN® SSVZ-M refer to page 763
- SILVYN® SSV refer to page 766
- SILVYN® SSVZ refer to page 767

New

SILVYN® EL



SILVYN® EL

Benefits

- Easy assembly of cables and wires
- Bendable
- Crush-resistant
- A fully insulated system when used in combination with SILVYN® MPC/MPC-M

Application range

- Mechanical engineering
- Vehicle construction
- Vending machine construction
- Exporters

Product features

- Flexible
- Smooth inner wall
- Dimensionally stable

Approvals



- UL FILENUMBER E308201

Design

- Integrated hard PVC spiral
- Soft PVC outer sheath

Note

- On request

Technical data

RAL	Colour delivered Silver grey (RAL 7001)
	Material Special soft PVC sheath with hard PVC spiral
	Temperature range -20 °C to +70 °C

Article number	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Suitable for SILVYN® MPC-M/MPC 90°M	Suitable for SILVYN® MPC	Suitable for SILVYN® MPC 90°	PU ring (m)
SILVYN® EL							
61747360	10.0 x 14.7	20	10.0	16 x 1,5	9	9	30
61747370	12.0 x 16.6	25	12.0	16 x 1,5	11/ 13,5	11/ 13,5	30
61747380	16.0 x 20.7	30	16.0	20 x 1,5	13,5/ 16	13,5/ 16	30
61747390	22.0 x 27.7	40	22.0	25 x 1,5	21	21	30
61747400	25.0 x 30.6	45	25.0	32 x 1,5	29	29	30
61747410	28.0 x 33.5	50	28.0	32 x 1,5	29	29	30
61747420	35.0 x 41.0	60	35.0	40 x 1,5	36	36	30
61747430	40.0 x 46.4	70	40.0	50 x 1,5	48		30
61747440	50.0 x 57.2	85	50.0	63 x 1,5	48		30

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

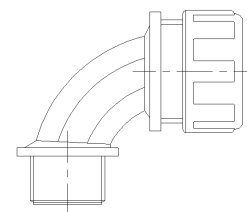
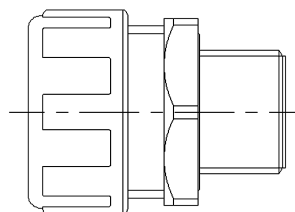
- SILVYN® ELÖ refer to page 770
- SILVYN® ELT refer to page 771

Accessories

- SILVYN® MPC-M refer to page 772
- SILVYN® MPC refer to page 772
- SILVYN® MPC 90° M refer to page 773
- SILVYN® MPC 90° refer to page 773

New

SILVYN® ELÖ



SILVYN® ELÖ

■ Benefits

- Resistant to grease, cooling agents and oils, especially ASTM2 testing oil
- Easy assembly of cables and wires
- Bendable
- Crush-resistant
- A fully insulated system when used in combination with SILVYN® MPC/MPC-M

■ Application range

- Mechanical engineering
- Machine tools
- Vending machine construction
- Applications with strong chemical influences

■ Product features

- Oil-resistant
- Flexible
- Smooth inner wall
- Dimensionally stable

■ Approvals

- UL FILE NUMBER E308201

■ Design

- Integrated hard PVC spiral
- Special soft PVC sheath

■ Technical data

- RAL** Colour delivered
Green (RAL 6001)
- Material**
Special soft PVC sheath with hard PVC spiral
- Temperature range**
-20 °C to +70 °C

Article number	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Suitable for SILVYN® MPC-M/MPC 90°M	Suitable for SILVYN® MPC	Suitable for SILVYN® MPC 90°	PU ring (m)
SILVYN® ELÖ							
61751610	10.0 x 14.7	20	10.0	12 x 1,5	9	9	30
61751620	12.0 x 16.6	25	12.0	16 x 1,5	11/13,5	11/13,5	30
61751630	16.0 x 20.7	30	16.0	20 x 1,5	13,5/ 16	13,5/ 16	30
61751640	22.0 x 27.7	40	22.0	25 x 1,5	21	21	30
61751650	25.0 x 30.6	45	25.0	32 x 1,5	21	21	30
61751660	28.0 x 33.5	50	28.0	32 x 1,5	29	29	30
61751670	35.0 x 41.0	60	35.0	40 x 1,5	36	36	30
61751680	40.0 x 46.4	70	40.0	50 x 1,5	42		30
61751690	50.0 x 57.2	85	50.0	63 x 1,5	48		30

Photographs are not to scale and do not represent detailed images of the respective products.

■ Similar products

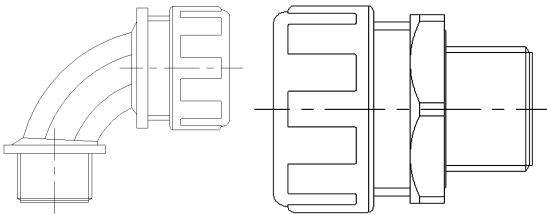
- SILVYN® EL refer to page 769
- SILVYN® ELT refer to page 771

■ Accessories

- SILVYN® MPC-M refer to page 772
- SILVYN® MPC refer to page 772
- SILVYN® MPC 90° M refer to page 773
- SILVYN® MPC 90° refer to page 773

New

SILVYN® ELT



SILVYN® ELT

Benefits

- Heat-resistant
- Easy assembly of cables and wires
- Bendable
- Crush-resistant
- A fully insulated system when used in combination with SILVYN® MPC/MPC-M

Application range

- Mechanical engineering
- Machine tools
- Vending machine construction
- Applications with higher temperatures

Product features

- Heat-resistant
- Flexible
- Smooth inner wall
- Dimensionally stable

Approvals



- UL FILE NUMBER E308201

Design

- Integrated hard PVC spiral
- Modified soft PVC sheath

Technical data

- RAL** Colour delivered
Blue (RAL 5012)
- Material**
Special soft PVC sheath with hard PVC spiral
- Temperature range**
-20 °C to +90 °C

Article number	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Suitable for SILVYN® MPC-M/MPC 90°M	Suitable for SILVYN® MPC	Suitable for SILVYN® MPC 90°	PU ring (m)
SILVYN® ELT							
61751700	10.0 x 14.7	20	10.0	12 x 1,5	9	9	30
61751710	12.0 x 16.6	25	12.0	16 x 1,5	11/13,5	11/13,5	30
61751720	16.0 x 20.7	30	16.0	20 x 1,5	13,5/16	13,5/16	30
61751730	22.0 x 27.7	40	22.0	25 x 1,5	21	21	30
61751740	25.0 x 30.6	45	25.0	32 x 1,5	29	29	30
61751750	28.0 x 33.5	50	28.0	32 x 1,5	29	29	30
61751760	35.0 x 41.0	60	35.0	40 x 1,5	36	36	30
61751770	40.0 x 46.4	70	40.0	50 x 1,5	42		30
61751780	50.0 x 57.2	85	50.0	63 x 1,5	48		30

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SILVYN® EL refer to page 769
- SILVYN® ELÖ refer to page 770

Accessories

- SILVYN® MPC-M refer to page 772
- SILVYN® MPC refer to page 772
- SILVYN® MPC 90° M refer to page 773
- SILVYN® MPC 90° refer to page 773

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Plastic protective cable conduit systems

SILVYN® EL/ELÖ/ELT

New

SILVYN® MPC / SILVYN® MPC-M



■ Benefits

- Can be used universally
- Fast and easy assembly

■ Application range

- In combination with protective conduit
- SILVYN® SI/SP/SP-PU (smooth conduits)
- SILVYN® EL/ELÖ/ELT (corrugated conduits)

■ Product features

- Dust protection
- Moisture-protection
- High-tensile

■ Approvals



- UL FILENUMBER E308201

■ Design

SILVYN® MPC-M

- Metric connection thread
- Hexagonal collar with integrated conduit connection

SILVYN® MPC

- PG connection thread
- Hexagonal collar with integrated conduit connection

■ Suitable conduits

SILVYN® MPC-M

- SILVYN® EL Page 769
- SILVYN® SI Page 759
- SILVYN® ELÖ Page 770
- SILVYN® SP Page 760
- SILVYN® ELT Page 771
- SILVYN® SP-PU Page 761

■ Technical data

- Upon request**
With 45° elbow
- Colour delivered**
Black (RAL 9005), UV-resistant
- Material**
PA66
Halogen-free
- Protection rating**
IP 65
- Temperature range**
-50°C to +135°C

Article number	Article designation	PG size	Connection thread M	Clear opening (mm)	Suitable for SILVYN® SI	Suitable for SILVYN® SP/SP-PU	SILVYN® EL/ELÖ/ELT	Pieces / PU
SILVYN® MPC-M black								
55502460	SILVYN MPC M16/1		16 x 1.5	8.0	11 x 14		10 x 14.7	10
55502461	SILVYN MPC M16/2		16 x 1.5	11.0	13 x 16	12 x 16	12 x 16,6	10
55502462	SILVYN MPC-M 20/1		20 x 1.5	14.0	13 x 16	12 x 16	12 x 16,6	10
55502463	SILVYN MPC M20/2		20 x 1.5	14.0		16 x 20	16 x 20,7	10
55502464	SILVYN MPC M25		25 x 1.5	19.0		22 x 27	22 x 27,7	10
55502465	SILVYN MPC M32/1		32 x 1.5	23.0			25,0 x 30,6	10
55502469	SILVYN MPC M16/1		32 x 1.5	25.0			28 x 33,5	10
55502466	SILVYN MPC M40		40 x 1.5	33.0			35 x 41,0	2
55502467	SILVYN MPC M50		50 x 1.5	37.0			40 x 46,4	2
55502468	SILVYN MPC M63		63 x 1.5	48.0		50 x 56	50 x 57,2	1
SILVYN® MPC-M grey								
55502441	SILVYN MPC M16/1		16 x 1.5	8.0	11 x 14		10 x 14.7	10
55502442	SILVYN MPC M16/2		16 x 1.5	11.0	13 x 16	12 x 16	12 x 16,6	10
55502443	SILVYN MPC-M 20/1		20 x 1.5	14.0	13 x 16	12 x 16	12 x 16,6	10
55502444	SILVYN MPC M20/2		20 x 1.5	14.0		16 x 20	16 x 20,7	10
55502445	SILVYN MPC M25		25 x 1.5	19.0		22 x 27	22 x 27,7	10
55502446	SILVYN MPC M32/1		32 x 1.5	23.0			25,0 x 30,6	10
55502447	SILVYN MPC M16/1		32 x 1.5	25.0			28 x 33,5	10
55502448	SILVYN MPC M40		40 x 1.5	33.0			35 x 41,0	2
55502449	SILVYN MPC M50		50 x 1.5	37.0			40 x 46,4	2
55502439	SILVYN MPC M63		63 x 1.5	48.0		50 x 56	50 x 57,2	1
SILVYN® MPC black								
55502470	SILVYN MPC 9	9		8.0	11 x 14		10 x 14.7	10
55502471	SILVYN MPC 11	11		11.0	13 x 16	12 x 16	12 x 16,6	10
55502472	SILVYN MPC 13,5/1	13.5		11.0	13 x 16	12 x 16	12 x 16,6	10
55502494	SILVYN MPC 13,5/2	13.5		11.0		16 x 20	16 x 20,7	10
55502473	SILVYN MPC 16	16		14.0		16 x 20	16 x 20,7	10
55502474	SILVYN MPC 21	21		19.0		22 x 27	22 x 27,7	10
55502495	SILVYN MPC 29/2	29		25.0			28 x 33,5	10
55502476	SILVYN MPC 29/1	29		23.0			25,0 x 30,6	10
55502477	SILVYN MPC 36	36		33.0			35 x 41,0	2
55502478	SILVYN MPC 42	42		37.0			40 x 46,4	2
55502479	SILVYN MPC 48	48		48.0			50 x 57,2	2
SILVYN® MPC grey								
55502496	SILVYN MPC 9	9			11 x 14		10 x 14.7	10
55502497	SILVYN MPC 11	11		11.0	13 x 16	12 x 16	12 x 16,6	10
55502498	SILVYN MPC 13,5/1	13.5		11.0	13 x 16	12 x 16	12 x 16,6	10
55502499	SILVYN MPC 13,5/2	13.5		11.0		16 x 20	16 x 20,7	10
55502451	SILVYN MPC 16	16		14.0		16 x 20	16 x 20,7	10
55502452	SILVYN MPC 21	21		19.0		22 x 27	22 x 27,7	10
55502453	SILVYN MPC 29/1	29		23.0			25,0 x 30,6	10
55502454	SILVYN MPC 29/2	29		25.0			28 x 33,5	10
55502455	SILVYN MPC 36	36		33.0			35 x 41,0	2
55502456	SILVYN MPC 42	42		37.0			40 x 46,4	2
55502457	SILVYN MPC 48	48		48.0			50 x 57,2	2

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

New

SILVYN® MPC 90° / SILVYN® MPC 90° M



Benefits

- Can be used universally
- Fast and easy assembly
- 90° elbow enables best assembling

Application range

- 90° elbow enables best assembling
- In combination with protective conduit
- SILVYN® SI/SP/SP-PU (smooth conduits)
- SILVYN® EL/ELÖ/ELT (corrugated conduits)

Product features

- Dust protection
- Moisture-protection
- High-tensile

Approvals



- UL FILENUMBER E308201

Design

SILVYN® MPC 90° M

- Metric connection thread
- 90° elbow with integrated conduit connection

SILVYN® MPC 90°

- PG connection thread
- 90° elbow with integrated conduit connection

Suitable conduits

- SILVYN® EL Page 769
- SILVYN® SI Page 759
- SILVYN® ELÖ Page 770
- SILVYN® SP Page 760
- SILVYN® ELT Page 771
- SILVYN® SP-PU Page 761

Technical data



Upon request
Grey, RAL 7001



Colour delivered
Black (RAL 9005), UV-resistant



Material
PA 66
Halogen-free



Protection rating
IP 65



Temperature range
-50°C to +135°C

Article number	Article designation	PG size	Connection thread M	Clear opening (mm)	Suitable for SILVYN® SI	Suitable for SILVYN® SP/SP-PU	SILVYN® EL/ELÖ/ELT	Pieces / PU
SILVYN MPC 90° M BLACK								
55502480	SILVYN MPC 90° M 16x1,5		16 x 1,5	11.0			12 x 16,6	10
55502481	SILVYN MPC 90° M 20x1,5/1		20 x 1,5	11.0	13 x 16	12 x 16	12 x 16,6	10
55502482	SILVYN MPC 90° M 20x1,5/2		20 x 1,5	14.0		16 x 20	16 x 20,7	10
55502483	SILVYN MPC 90° M 25x1,5		25 x 1,5	19.0		22 x 27	22 x 27,7	10
55502484	SILVYN MPC 90° M 32x1,5		32 x 1,5	25.0			28 x 33,5	10
55502485	SILVYN MPC 90° M 40x1,5		40 x 1,5	33.0			35 x 41,0	2
SILVYN MPC 90° M GREY								
55502458	SILVYN MPC 90° M 16x1,5		16 x 1,5	11.0			12 x 16,6	10
55502459	SILVYN MPC 90° M 20x1,5/1		20 x 1,5	11.0	13 x 16	12 x 16	12 x 16,6	10
55502366	SILVYN MPC 90° M 20x1,5/2		20 x 1,5	14.0		16 x 20	16 x 20,7	10
55502367	SILVYN MPC 90° M 25x1,5		25 x 1,5	19.0		22 x 27	22 x 27,7	10
55502368	SILVYN MPC 90° M 32x1,5		32 x 1,5	25.0			28 x 33,5	10
55502369	SILVYN MPC 90° M 40x1,5		40 x 1,5	33.0			35 x 41,0	2
SILVYN MPC 90° BLACK								
55502486	SILVYN MPC 90° PG 11	11		11.0			12 x 16,6	10
55502487	SILVYN MPC 90° PG 13,5	13,5		11.0	13 x 16	12 x 16	12 x 16,6	10
55502488	SILVYN MPC 90° PG 16	16		11.0			16 x 20,7	10
55502489	SILVYN MPC 90° PG 21	21		19.0		16 x 20	22 x 27,7	10
55502490	SILVYN MPC 90° PG 29	29		14.0		16 x 20	28 x 33,5	10
55502493	SILVYN MPC 90° PG 36	36		33.0			35 x 41,0	2
SILVYN MPC 90° GREY								
55502370	SILVYN MPC 90° PG 11	11		11.0			12 x 16,6	10
55502371	SILVYN MPC 90° PG 13,5	13,5		11.0	13 x 16	12 x 16	12 x 16,6	10
55502372	SILVYN MPC 90° PG 16	16		11.0			16 x 20,7	10
55502373	SILVYN MPC 90° PG 21	21		19.0		16 x 20	22 x 27,7	10
55502374	SILVYN MPC 90° PG 29	29		14.0		16 x 20	28 x 33,5	10
55502375	SILVYN MPC 90° PG 36	36		33.0			35 x 41,0	2

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® FPS



SILVYN® FPS

Benefits

- Dimensionally stable
- Crushable and extendable
- Highly oil and acid-resistant
- Air-tight and impermeable

Application range

- Mechanical engineering
- In drag chains (SILVYN® CHAIN)
- Robot-building
- Moving applications
- Indoor applications

Product features

- Cadmium-free

Approvals



Design

- PVC-insulated steel spring wire
- Soft PVC outer sheath

Note

- PU = 50 m (on request)

Technical data

RAL	Colour delivered Grey
	Material Soft PVC with insulated spring steel wire
	Temperature range -20°C to +80°C

Article number	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Suitable for SILVYN® USK-M/US-M	Suitable for SILVYN® LKI-M/MSK-M	Suitable for SILVYN® USK/US/LKI/EE-K	PU ring (m)
SILVYN® FPS							
61711550	7.0 x 10.0	8	7.0	10 x 1,0	12 x 1,5	7	25
61711590	10.0 x 14.0	10	10.0	12 x 1,5	16 x 1,5	9	25
61711630	13.0 x 17.0	13	13.0	16 x 1,5	20 x 1,5	11	25
61711670	15.0 x 19.0	15	15.0			13,5	25
61711710	16.0 x 21.0	17	16.0	20 x 1,5	25 x 1,5	16	25
61711750	22.0 x 27.0	20	22.0	25 x 1,5	32 x 1,5	21	25
61711790	29.0 x 36.0	25	29.0	32 x 1,5	40 x 1,5	29	25
61711830	38.0 x 45.0	36	38.0	40 x 1,5	50 x 1,5	36	25
61711910	48.0 x 56.0	40	48.0	50 x 1,5	63 x 1,5	48	25
SILVYN® FPS 10M							
61721690	7.0 x 10.0	8	7.0	10 x 1,0	12 x 1,5	7	10
61721700	10.0 x 14.0	10	10.0	12 x 1,5	16 x 1,5	9	10
61721710	13.0 x 17.0	13	13.0	16 x 1,5	20 x 1,5	11	10
61721720	15.0 x 19.0	15	15.0			13,5	10
61721730	16.0 x 21.0	17	16.0	20 x 1,5	25 x 1,5	16	10
61721740	22.0 x 27.0	20	22.0	25 x 1,5	32 x 1,5	21	10
61721750	29.0 x 36.0	25	29.0	32 x 1,5	40 x 1,5	29	10
61721760	38.0 x 45.0	36	38.0	40 x 1,5	50 x 1,5	36	10
61721780	48.0 x 56.0	40	48.0	50 x 1,5	63 x 1,5	48	10

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SILVYN® FD-PU refer to page 775

Accessories

- SILVYN® MSK-M EE refer to page 776
- SILVYN® US-M refer to page 777
- SILVYN® LKI-M refer to page 780
- SILVYN® US refer to page 778
- SILVYN® USK-M refer to page 764
- SILVYN® LKI refer to page 780
- SILVYN® EE-K refer to page 781

SILVYN® FD-PU



SILVYN® FD-PU

Benefits

- Dimensionally stable
- Highly flexible at cold temperatures
- Crushable and extendable
- High resistance to oil, petrol, acids and greases
- Air-tight and impermeable

Application range

- Outdoors
- Mechanical engineering
- In drag chains (SILVYN® CHAIN)
- Robot-building
- Moving applications

Product features

- Halogen and cadmium-free
- Abrasion and microbe-resistant
- Fire behaviour of outer sheath according to UL 94V-0

Approvals



Design

- PVC-insulated steel spring wire
- PUR outer sheath

Note

- PU = 50 m (on request)

Technical data

RAL	Colour delivered Metallic blue
	Material PUR with PVC-insulated spring steel wire Fire behaviour according to UL 94V-0
	Temperature range -40 °C to +80 °C

Article number	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Weight (kg/m)	Suitable for SILVYN® USK-M/US-M	Suitable for SILVYN® LKI-M/MSK-M	Suitable for SILVYN® USK/US/LKI/EE-K	PU ring (m)
SILVYN® FD-PU								
64453660	7.0 x 10.0	10	7.0	0.09	10 x 1,0	12 x 1,5	7	10
64453670	10.0 x 14.0	14	10.0	0.11	12 x 1,5	16 x 1,5	9	10
64453680	13.0 x 17.0	17	13.0	0.22	16 x 1,5	20 x 1,5	11	10
64453690	15.0 x 19.0	19	15.0	0.28			13,5	10
64453700	16.0 x 21.0	21	16.0	0.3	20 x 1,5	25 x 1,5	16	10
64453710	22.0 x 27.0	27	22.0	0.33	25 x 1,5	32 x 1,5	21	10
64453720	29.0 x 36.0	36	29.0	0.45	32 x 1,5	40 x 1,5	29	10
64453730	38.0 x 45.0	45	38.0	0.56	40 x 1,5	50 x 1,5	36	10
64453750	48.0 x 56.0	56	48.0	0.82	50 x 1,5	63 x 1,5	48	10

Photographs are not to scale and do not represent detailed images of the respective products.

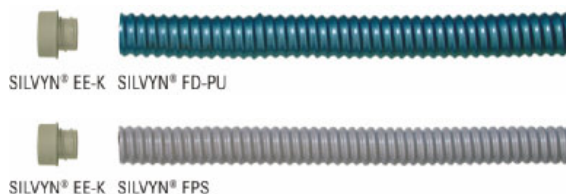
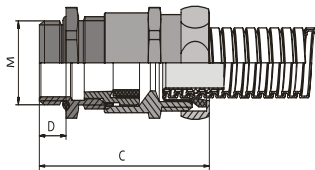
Accessories

- SILVYN® MSK-M EE refer to page 776
- SILVYN® US-M refer to page 777
- SILVYN® LKI-M refer to page 780
- SILVYN® US refer to page 778
- SILVYN® USK-M refer to page 764
- SILVYN® LKI refer to page 780
- SILVYN® EE-K refer to page 781

Plastic protective cable conduit systems

SILVYN® FPS/FD-PU

SILVYN® MSK-M EE



SILVYN® MSK-M EE

■ **Benefits**

- Optimum cable and conduit strain relief
- Maximum cable sealing
- Fast and easy assembly
- Wide clamping range
- Anti-turn protection

■ **Application range**

- In combination with protective conduit
- SILVYN® FPS
- SILVYN® FD-PU
- Indoor / outdoor applications
- Used in areas where cables and wires need to be provided with strain relief and additional sealing

■ **Product features**

- Combination of SILVYN® and SKINTOP®

■ **Approvals**



■ **Design**

- Optional:
- SKINTOP® MS-M cable gland
- SKINTOP® MS-SC-M EMC connection
- SKINTOP® DIX multiple sealing insert
- SILVYN® conduit connection via inner sleeve and cap nut

■ **Note**

- With XL connection thread (on request)
- With ATEX approval (upon request)

■ **Suitable conduits**

- SILVYN® FPS Page 774
- SILVYN® FD-PU Page 775

■ **Technical data**



Material

Basis type:
Body: nickel-plated brass
Conduit connector seal: CR/NBR
Tube seal: TPE



Protection rating

Cable: IP 68
Conduit:
IP 65 with SILVYN® FPS, FD-PU



Temperature range

-30°C to +100°C

Article number	Article designation	Suitable for conduit OØ (mm)	Pieces / PU
SILVYN® MSK-M for SILVYN® FPS/FD-PU			
55506070	MSK-M M12x1,5 EE	FPS, FD-PU 7 x 10	5
55506071	MSK-M M16x1,5 EE	FPS, FD-PU 10 x 14	5
55506072	MSK-M M20x1,5 EE	FPS, FD-PU 13 x 17	5
55506073	MSK-M M25x1,5 EE	FPS, FD-PU 16 x 21	5
55506074	MSK-M M32x1,5 EE	FPS, FD-PU 22 x 27	5
55506075	MSK-M M40x1,5 EE	FPS, FD-PU 29 x 36	1
55506076	MSK-M M50x1,5 EE	FPS, FD-PU 38 x 45	1
55506077	MSK-M M63x1,5 EE	FPS, FD-PU 48 x 56	1
SILVYN® MSK-M for SILVYN® FPS/FD-PU			
55506100	MSK-SC-M M12x1,5 EE	FPS, FD-PU 7 x 10	5
55506101	MSK-SC-M M16x1,5 EE	FPS, FD-PU 10 x 14	5
55506102	MSK-SC-M M20x1,5 EE	FPS, FD-PU 13 x 17	5
55506103	MSK-SC-M M25x1,5 EE	FPS, FD-PU 16 x 21	5
55506104	MSK-SC-M M32x1,5 EE	FPS, FD-PU 22 x 27	5
55506105	MSK-SC-M M40x1,5 EE	FPS, FD-PU 29 x 36	1
55506106	MSK-SC-M M50x1,5 EE	FPS, FD-PU 38 x 45	1
SILVYN® MSK-M for SILVYN® FPS/FD-PU			
55506000	MSK-M M25 D450x1,5 EE	FPS, FD-PU 16 x 21	5
55506001	MSK-M M32 D470x1,5 EE	FPS, FD-PU 22 x 27	5

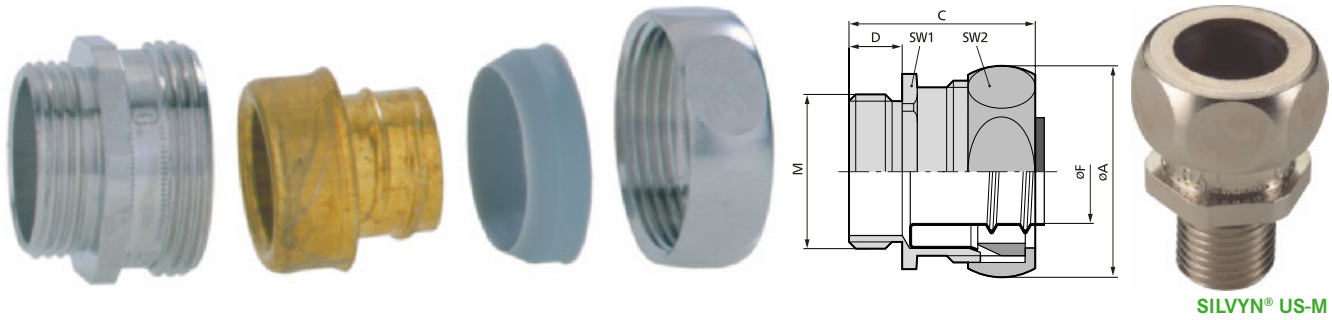
Other variations with multiple SKINTOP® DIX-M sealing inserts are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

■ **Accessories**

- SKINTOP® DIX-M refer to page 672
- SKINTOP® DIX-M AUTOMATION refer to page 673
- SKINTOP® DIX-DV refer to page 675

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SILVYN® US-M



Benefits

- High tensile strength
- Space-saving
- Vibration protection
- Can be used universally

Application range

- In combination with protective conduit
- SILVYN® FPS/FD-PU
- SILVYN®AS/EDU-AS/EMC AS-CU/AS-P
- Mechanical engineering
- Plant engineering

Product features

- Compact design
- Can be used as an EMC gland by using the SILVYN® US-MS-DR brass ring

Approvals



Design

- Metric connection thread
- Hexagonal collar
- Inner sleeve (not included)
- Sealing element
- Cap nut

Note

- Required inner sleeve is not included
- SILVYN® EE-K
- SILVYN® US-AS/US-EDU-AS
- To be ordered separately based on the preferred conduit system

Suitable conduits

- SILVYN® FPS Page 774
- SILVYN® EDU-AS Page 813
- SILVYN® FD-PU Page 775
- SILVYN® AS-P Page 815
- SILVYN® EMC AS-CU Page 814

Technical data

Material
 Body: nickel-plated brass
 Sealing ring: TPE

IP
 Protection rating
 IP 40 (with SILVYN® AS, EDU-AS and EMC AS-CU)
 IP 54 (with SILVYN® FPS and FD-PU)
 IP 66 (with SILVYN® AS-P)

Temperature range
 -40°C to +125°C

Article number	Size M	SW 1/2 mm	C mm	D (mm)	Suitable for SILVYN® FD-PU/FPS	Suitable for SILVYN® AS	Suitable for SILVYN® EDU-AS/AS-P/EMC AS-CU	Pieces / PU
SILVYN® US-M								
55501500	10 x 1.0	15 / 17	31	10	7 x 10	8 x 10	7 x 10	50
55501510	12 x 1.5	19 / 21	33	10	10 x 14	11 x 14	10 x 14	50
55501520	16 x 1.5	23 / 25	33	10	13 x 17	14 x 17	13 x 17	50
55501530	20 x 1.5	27 / 29	33	10	16 x 21	18 x 21	17 x 21	50
55501540	25 x 1.5	34 / 36	41	11	22 x 27	23 x 27	22 x 27	25
55501550	32 x 1.5	43 / 45	43	13	29 x 36	31 x 36	29 x 36	25
55501560	40 x 1.5	52 / 54	43	13	38 x 45	40 x 45	38 x 44	20
55501570	50 x 1.5	63 / 66	49	14	48 x 56	51 x 56	49 x 56	10

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SILVYN® MSK-M EE refer to page 776
- SILVYN® MSK-M US refer to page 816

Metal protective cable conduit systems

SILVYN® AS/EDU-AS/AS-P

SILVYN® US



SILVYN® US

Benefits

- High tensile strength
- Space-saving
- Vibration protection
- Can be used universally

Application range

- In combination with protective conduit
- SILVYN® FPS/FD-PU
- SILVYN® AS/EDU-AS/EMC AS-CU/AS-P
- Mechanical engineering
- Plant engineering

Product features

- Compact design
- Can be used as an EMC gland by using the SILVYN® US-MS-DR brass ring

Approvals



Design

- PG connection thread
- Hexagonal collar
- Inner sleeve (not included)
- Sealing element
- Cap nut

Note

- Required inner sleeve is not included
- SILVYN® EE-K
- SILVYN® US-AS/US-EDU-AS
- To be ordered separately based on the preferred conduit system

Suitable conduits

- SILVYN® FPS Page 774
- SILVYN® EDU-AS Page 813
- SILVYN® FD-PU Page 775
- SILVYN® AS-P Page 815
- SILVYN® EMC AS-CU Page 814

Technical data



Material
Body: nickel-plated brass
Sealing ring: TPE



Protection rating
IP 40 (with SILVYN® AS, EDU-AS and EMC AS-CU)
IP 54 (with SILVYN® FPS and FD-PU)
IP 66 (with SILVYN® AS-P)



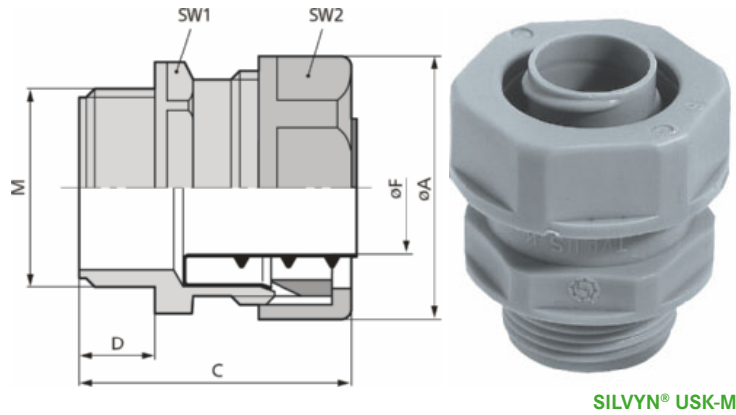
Temperature range
-40°C to +125°C

Article number	PG size	Overall length, C (mm)	D (mm)	F mm	SW 1/2 mm	Suitable for SILVYN® FPS/FD-PU	Suitable for SILVYN® AS	Suitable for SILVYN® EDU-AS/AS-P/EMC AS-CU	Pieces / PU
SILVYN® US									
61795080	7	28.0	7.0	9	15 / 17	7 x 10	8 x 10	7 x 10	50
61795090	9	30.0	7.0	11	19 / 21	10 x 14	11 x 14	10 x 14	50
61795100	11	30.0	7.0	15	23 / 25	13 x 17	14 x 17	13 x 17	50
61795110	13.5	30.0	7.0	17	25 / 27	15 x 19	16 x 19	15 x 19	50
61795120	16	30.0	7.0	19	27 / 29	16 x 21	18 x 21	17 x 21	50
61795130	21	40.0	10.0	24	34 / 36	22 x 27	23 x 27	22 x 27	25
61795140	29	40.0	10.0	32	43 / 45	29 x 36	31 x 36	29 x 36	25
61795150	36	40.0	10.0	42	52 / 54	38 x 45	40 x 45	38 x 45	20
61795170	48	45.0	10.0	55	63 / 77	48 x 56	51 x 56	49 x 56	10

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SILVYN® USK-M



SILVYN® USK-M

Benefits

- Fast and easy assembly
- Vibration protection
- No extra parts necessary

Application range

- In combination with protective conduit
- SILVYN® FPS/ FD-PU
- SILVYN® SI/SP/SP-PU
- Indoor applications
- Light mechanical stress

Product features

- Large wrench sizes

Design

- Metric connection thread
- Hexagonal collar
- Threaded sleeve
- Cap nut

Note

- Included: SILVYN® EE-K inner sleeve

Suitable conduits

- SILVYN® FPS Page 774
- SILVYN® FD-PU Page 775
- SILVYN® SP Page 760
- SILVYN® SP-PU Page 761

Technical data

RAL Colour delivered
Silver grey (RAL 7001)

Material
PP

IP Protection rating
IP 54

Temperature range
-10°C to +110°C

Approvals



Article number	Connection thread M	Clear opening (mm)	Overall length, C (mm)	Thread length, D (mm)	SW 1/2 mm	Suitable for SILVYN® FD-PU/ FPS	Suitable for SILVYN® SP	Suitable for SILVYN® SP-PU	Pieces / PU
SILVYN® USK-M									
55501300	10 x 1.0	6.0	40.0	10.0	18 / 16	7 x 10			50
55501310	12 x 1.5	9.0	43.0	12.0	23 / 21	10 x 14	10 x 14	10 x 14	50
55501320	16 x 1.5	13.0	43.0	12.0	27 / 24	13 x 17	12 x 16	12 x 16	50
55501330	20 x 1.5	14.5	44.0	13.0	32 / 29	16 x 21	16 x 20	16 x 20	50
55501340	25 x 1.5	19.5	50.0	13.0	40 / 36	22 x 27	22 x 27	22 x 27	25
55501350	32 x 1.5	27.0	51.0	15.0	49 / 45	29 x 36	30 x 36	30 x 36	25
55501360	40 x 1.5	36.0	51.0	15.0	58 / 53	38 x 45	38 x 44	38 x 44	25
55501370	50 x 1.5	46.0	58.0	16.0	70 / 65	48 x 56	50 x 56		10

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® LKI / SILVYN® LKI-M



Benefits

- Fast and easy assembly
- Vibration protection
- High-tensile
- Can be rotated

Application range

- In combination with protective conduit
- SILVYN® FPS
- SILVYN® FD-PU
- Robot-building
- For rotating applications

Product features

- Smooth inner surface
- Slim construction

Approvals



Design

SILVYN® LKI-M

- Metric connection thread
- Swivelling upper part with integrated inner sleeve

SILVYN® LKI

- PG connection thread
- Swivelling upper part with integrated inner sleeve

Suitable conduits

- SILVYN® FPS Page 774
- SILVYN® FD-PU Page 775

Technical data

RAL	Colour delivered Silver grey (RAL 7001)
	Material PP
IP	Protection rating IP 54
	Temperature range -10 °C to +110 °C

Article number	PG size	Connection thread M	Clear opening (mm)	Overall length, C (mm)	Thread length, D (mm)	SW (mm)	Suitable for SILVYN® FPS/FD-PU	Pieces / PU
SILVYN® LKI-M								
55501400		12 x 1.5	5.5	38.0	10.0	16.0	7 x 10	50
55501410		16 x 1.5	9.5	39.5	10.0	19.0	10 x 14	50
55501420		20 x 1.5	11.5	42.0	10.0	22.0	13 x 17	50
55501430		25 x 1.5	14.5	48.0	11.0	27.0	16 x 21	50
55501440		32 x 1.5	19.5	58.0	12.0	35.0	22 x 27	25
55501450		40 x 1.5	27.0	59.0	12.0	45.0	29 x 36	25
55501460		50 x 1.5	35.5	62.5	12.0	54.0	38 x 45	25
55501470		63 x 1.5	46.0	68.0	15.0	65.0	48 x 56	10
SILVYN® LKI								
55000000	7		5.5	38.0	10.0	16.0	7 x 10	50
55000010	9		9.5	39.5	10.0	19.0	10 x 14	50
55000020	11		11.5	42.0	10.0	22.0	13 x 17	50
55000030	13.5		13.0	42.0	10.0	24.0	15 x 19	50
55000040	16		14.5	48.0	11.0	27.0	16 x 21	50
55000050	21		19.5	58.0	11.0	35.0	22 x 27	25
55000060	29		27.0	59.0	12.0	45.0	29 x 36	25
55000070	36		35.5	62.5	12.0	54.0	38 x 45	25
55000090	48		46.0	68.0	15.0	65.0	48 x 45	10

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® EE-K

Benefits

- Cable damage can be prevented

Application range

- In combination with protective conduit
- SILVYN® FPS/ FD-PU
- SILVYN® SP/SP-PU
- Conduit end cover

Product features

- All-round collar completely covers the protective conduit end

Approvals



Design

- Threaded sleeve

Note

- Necessary for using SILVYN® US-M and US

Suitable conduits

- SILVYN® FPS Page 774
- SILVYN® FD-PU Page 775
- SILVYN® SP Page 760
- SILVYN® SP-PU Page 761

Technical data

RAL Colour delivered
Grey, RAL 7001

Material
PP

Temperature range
-10°C to +110°C



Article number	Article designation	Conduit outer Ø (mm)	Suitable for SILVYN® US/US-M	Pieces / PU
SILVYN® EE-K				
52023340	EE-K 7	10	7 / 10 x 1,5	50
52023350	EE-K 9	14	9 / 12 x 1,5	50
52023360	EE-K 11	17	11 / 16 x 1,5	50
52023370	EE-K 13,5	19	13,5 / -	50
52023380	EE-K 16	21	16 / 20 x 1,5	50
52023390	EE-K 21	27	21 / 25 x 1,5	25
52023400	EE-K 29	36	29 / 32 x 1,5	25
52023410	EE-K 36	45	36 / 40 x 1,5	20
52023430	EE-K 48	56	48 / 50 x 1,5	10

Photographs are not to scale and do not represent detailed images of the respective products.

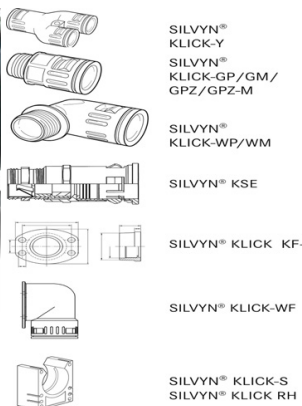
Accessories

- SILVYN® US-M refer to page 777
- SILVYN® US refer to page 778

SILVYN® RILL PA 6



SILVYN® RILL PA 6



- SILVYN® KLICK-Y
- SILVYN® KLICK-GP/GM/ GPZ/GPZ-M
- SILVYN® KLICK-WP/WM
- SILVYN® KSE
- SILVYN® KLICK KF-M
- SILVYN® KLICK-WF
- SILVYN® KLICK-S
- SILVYN® KLICK-RH



Info

- Maximum safety in the event of a fire

Benefits

- Dimensionally stable
- Flexible
- High flame-retardance and self-extinguishing in accordance with UL 94V-0
- Crush-resistant
- Lightweight

Application range

- Mechanical engineering
- Public utilities
- Railway applications / vehicle construction
- Moving applications
- Outdoor application (in black)

Product features

- Halogen and cadmium-free
- Abrasion-resistant
- High resistance to oil, petrol, acids and other chemicals

Approvals



- UL FILENUMBER E308201

Design

- Fine-profile corrugated polyamide 6 conduit

Note

- UV and weather-resistant in black

Technical data

Approvals
 VDE EN/IEC 618386-23
 DNV, Lloyd's Register
 Rail: DB DIN 5510 Teil2 (S4/SR2/ST2)
 SNCF NFF 16-101/102 (I2/f2)
 UNDERGROUND BS 6853

Colour delivered
 Grey (RAL 7001)
 Black (RAL 9005), UV-resistant

Material
 PA 6
 Silicone-free
 Halogen-free
 UL 94V-0

Temperature range
 -40°C to +115°C
 short-term +150°C

Article number	Article designation	Article IØ x OØ (mm)	Bending radius (mm)	Suitable for SILVYN® KLICK-GM/WM	Suitable for SILVYN® KLICK-GP/WP	Suitable for SILVYN® KLICK-GPZ-M/GPZ	PU ring (m)
SILVYN® RILL PA 6 grey							
61746939	7	6.5 x 10.0	13	10 x 1,0	7/-	12 x 1,5/7	50
61746940	9	10.0 x 13.0	20	12 x 1,5/ 16 x 1,5	9/9	16x1,5/9	50
61746950	11	12.0 x 15.8	35	16 x 1,5/20 x 1,5	11/11	20x1,5/11	50
61747010	13,5	14.3 x 18.5	40		13,5/13,5	-/13,5	50
61746960	16	16.5 x 21.2	45	20 x 1,5	16/16	25x1,5/16	50
61746970	21	23.0 x 28.5	55	25 x 1,5	21/21	32x1,5/21	50
61746980	29	29.0 x 34.5	65	32 x 1,5	29/29	40x1,5/29	25
61746990	36	36.0 x 42.5	90	40 x 1,5	36/-	50x1,5/36	25
61747000	48	48.0 x 54.5	100	50 x 1,5	48/-	63x1,5/48	25
SILVYN® RILL PA 6 black							
61746935	7	6.5 x 10.0	13	10 x 1,0	7/-	12 x 1,5/7	50
61746945	9	10.0 x 13.0	20	12 x 1,5/ 16 x 1,5	9/9	16x1,5/9	50
61746955	11	12.0 x 15.8	35	16 x 1,5/20 x 1,5	11/11	20x1,5/11	50
61747015	13,5	14.3 x 18.5	40		13,5/13,5	-/13,5	50
61746965	16	16.5 x 21.2	45	20 x 1,5	16/16	25x1,5/16	50
61746975	21	23.0 x 28.5	55	25 x 1,5	21/21	32x1,5/21	50
61746985	29	29.0 x 34.5	65	32 x 1,5	29/29	40x1,5/29	25
61746995	36	36.0 x 42.5	90	40 x 1,5	36/-	50x1,5/36	25
61747005	48	48.0 x 54.5	100	50 x 1,5	48/-	63x1,5/48	25

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SILVYN® RILL PA 12 refer to page 783

Accessories

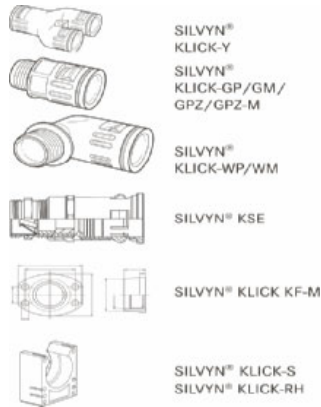
- SILVYN® KLICK-GM refer to page 784
- SILVYN® KLICK 90°M refer to page 785
- SILVYN® KLICK GPZ-M refer to page 786
- SILVYN® KLICK- 90° Flange refer to page [P1159]
- SILVYN® KSE refer to page 787
- SILVYN® KLICK-GP refer to page 788
- SILVYN® KLICK 90° PG refer to page 790
- SILVYN® KLICK-GPZ refer to page 789
- SILVYN® KLICK-Y refer to page 791
- SILVYN® KLICK-Y (TPE) refer to page 791
- SILVYN® KLICK-S refer to page 792
- SILVYN® KLICK-D refer to page 792
- SILVYN® KLICK-V refer to page 792
- SILVYN® KLICK-RH refer to page 793
- SILVYN® K-EM refer to page 793

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

SILVYN® RILL PA 12

Info

- Designed for robot applications



SILVYN® RILL PA 12

Benefits

- Dimensionally stable
- Highly flexible at cold temperatures
- Flame-retardant and self-extinguishing according to UL 94V-2
- Crush-resistant
- Highly flexible

Application range

- Mechanical engineering
- In drag chains (SILVYN® CHAIN)
- Building Automation
- Robot-building
- Outdoor application (in black)

Product features

- Halogen and cadmium-free
- Abrasion-resistant
- High resistance to oil, petrol, acids and other chemicals

Approvals



Design

- Fine-profile corrugated polyamide 12 conduit

Note

- UV and weather-resistant in black

Technical data

DIN VDE Approvals
 VDE EN/IEC 61386-23
 Lloyd's Register
 Rail:
 DB DIN 5510 Teil2 (S4/SR2/ST2)
 SNCF NFF-16-101/102 (I3/F2)

RAL Colour delivered
 Grey (RAL 7001)
 Black (RAL 9005), UV-resistant

Material
 PA 12
 Silicone-free
 Halogen-free
 UL 94V-2

Temperature range
 -50°C bis +100°C
 short-term +150°C

Article number	Article designation	Article IØ x OØ (mm)	Bending radius (mm)	Suitable for SILVYN® KLICK-GM/WM	Suitable for SILVYN® KLICK-GP/WP	Suitable for SILVYN® KLICK-GPZ-M/GPZ	PU ring (m)
SILVYN® RILL PA 12 grey							
61815100	7	6.5 x 10.0	13	10 x 1,5	7/-	12 x 1,5/7	50
61815110	9	10.0 x 13.0	15	12 x 1,5/16 x 1,5	9/9	16x1,5/9	50
61815120	11	12.0 x 15.8	22	16 x 1,5/20 x 1,5	11/11	20x1,5/11	50
61815180	13,5	14.3 x 18.5	27		13,5/13,5	-/13,5	50
61815130	16	16.5 x 21.2	35	20 x 1,5	16/16	25x1,5/16	50
61815140	21	23.0 x 28.5	45	25 x 1,5	21/21	32x1,5/21	50
61815150	29	29.0 x 34.5	50	32 x 1,5	29/29	40x1,5/29	25
61815160	36	36.0 x 42.5	80	40 x 1,5	36/-	50x1,5/36	25
61815170	48	48.0 x 54.5	100	50 x 1,5	48/-	63x1,5/48	25
SILVYN® RILL PA 12 black							
61815105	7	6.5 x 10.0	13	10 x 1,5	7/-	12 x 1,5/7	50
61815115	9	10.0 x 13.0	15	12 x 1,5/16 x 1,5	9/9	16x1,5/9	50
61815125	11	12.0 x 15.8	22	16 x 1,5/20 x 1,5	11/11	20x1,5/11	50
61815185	13,5	14.3 x 18.5	27		13,5/13,5	-/13,5	50
61815135	16	16.5 x 21.2	35	20 x 1,5	16/16	25x1,5/16	50
61815145	21	23.0 x 28.5	45	25 x 1,5	21/21	32x1,5/21	50
61815155	29	29.0 x 34.5	50	32 x 1,5	29/29	40x1,5/29	25
61815165	36	36.0 x 42.5	80	40 x 1,5	36/-	50x1,5/36	25
61815175	48	48.0 x 54.5	100	50 x 1,5	48/-	63x1,5/48	25

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SILVYN® RILL PA 6 refer to page 782

Accessories

- SILVYN® KLICK-GM refer to page 784
- SILVYN® KLICK 90°M refer to page 785
- SILVYN® KLICK GPZ-M refer to page 786
- SILVYN® KLICK- 90° Flange refer to page [P1159]
- SILVYN® KSE refer to page 787
- SILVYN® KLICK-GP refer to page 788
- SILVYN® KLICK 90° PG refer to page 790
- SILVYN® KLICK-GPZ refer to page 789
- SILVYN® KLICK-Y refer to page 791
- SILVYN® KLICK-Y (TPE) refer to page 791
- SILVYN® KLICK-S refer to page 792
- SILVYN® KLICK-D refer to page 792
- SILVYN® KLICK-V refer to page 792
- SILVYN® KLICK-RH refer to page 793
- SILVYN® K-EM refer to page 793

SILVYN® KLICK-GM



Benefits

- Fast assembly
- Easy to disassemble
- High-tensile
- High sealing performance
- Can be rotated

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Robot-building
- Rotating applications

Approvals



- UL FILENUMBER E308201

Design

- Metric connection thread
- Body with inner sealing
- Upper part with snap-in sleeve

Note

- For rotating applications, disassemble the upper part to remove sealing, then re-assemble.

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data

RAL	Colour delivered Grey (RAL 7001) Black (RAL 9005), UV-resistant
Material	PA6
IP	Protection rating IP 68 IP 69K according to DIN 40050 T.9
Temperature range	-40 °C to +115 °C

Article number	Connection thread M	Hole Ø (mm)	For conduit with outer Ø (mm)	Thread length, D (mm)	SW (mm)	Suitable for SILVYN® RILL	Pieces / PU
SILVYN® KLICK-GM grey							
55501000	10 x 1.0	6.5	10.0	12.0	17.0	6,5 x 10,0	50
55501010	12 x 1.5	8.0	13.0	12.0	20.0	10 x 13,0	50
55501020	16 x 1.5/1	10.0	13.0	12.0	20.0	10 x 13,0	50
55501030	16 x 1.5/2	12.0	15.8	12.0	23.0	12 x 15,8	50
55501040	20 x 1.5/1	12.0	15.8	13.0	23.0	12 x 15,8	50
55501050	20 x 1.5/2	16.0	21.2	13.0	29.5	16,5 x 21,2	50
55501060	25 x 1.5	20.5	28.5	13.0	37.0	23 x 28,5	25
55501070	32 x 1.5	27.5	34.5	15.0	44.0	29 x 34,5	25
55501080	40 x 1.5	35.0	42.5	15.0	51.5	36 x 42,5	25
55501090	50 x 1.5	45.0	54.5	15.3	65.5	48 x 54,5	10
55500990	63 x 1.5	48.0	54.5	16.0	59.0	48 x 54,5	10
SILVYN® KLICK-GM black							
55501005	10 x 1.0	6.5	10.0	12.0	17.0	6,5 x 10,0	50
55501015	12 x 1.5	8.0	13.0	12.0	20.0	10 x 13,0	50
55501025	16 x 1.5/1	10.0	13.0	12.0	20.0	10 x 13,0	50
55501035	16 x 1.5/2	12.0	15.8	12.0	23.0	12 x 15,8	50
55501045	20 x 1.5/1	12.0	15.8	13.0	23.0	12 x 15,8	50
55501055	20 x 1.5/2	16.0	21.2	13.0	29.5	16,5 x 21,2	50
55501065	25 x 1.5	20.5	28.5	13.0	37.0	23 x 28,5	25
55501075	32 x 1.5	27.5	34.5	15.0	44.0	29 x 34,5	25
55501085	40 x 1.5	35.0	42.5	15.0	51.5	36 x 42,5	25
55501095	50 x 1.5	45.0	54.5	15.3	65.5	48 x 54,5	10
55500995	63 x 1.5	48.0	54.5	16.0	59.0	48 x 54,5	10

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SILVYN® KLICK GPZ-M refer to page 786

SILVYN® KLICK 90°M



Benefits

- 90° elbow enables best assembling
- Fast assembly
- Easy to disassemble
- High-tensile
- High sealing performance

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- For applications with limited space
- Rotating applications

Approvals



- UL FILENUMBER E308201

Design

- Metric connection thread
- 90° elbow
- Body with inner sealing
- Upper part with snap-in sleeve

Note

- For rotating applications, disassemble the upper part to remove sealing, then re-assemble.

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data

RAL	Colour delivered Grey (RAL 7001) Black (RAL 9005), UV-resistant
Material	PA6
IP	Protection rating IP 68 IP 69K according to DIN 40050 T.9
Temperature range	-40 °C to +115 °C

Article number	Connection thread M	Hole Ø (mm)	For conduit with outer Ø (mm)	Thread length, D (mm)	Suitable for SILVYN® RILL	Pieces / PU
SILVYN® KLICK-WM grey						
55501110	10 x 1.0	7.0	10.0	12.0	6,5 x 10,0	50
55501120	12 x 1.5	8.0	13.0	12.0	10,0 x 13,0	50
55501130	16 x 1.5/1	12.0	13.0	12.0	10,0 x 13,0	50
55501140	16 x 1.5/2	12.0	15.8	12.0	12 x 15,8	50
55501150	20 x 1.5/1	15.5	15.8	13.0	12 x 15,8	50
55501160	20 x 1.5/2	15.5	21.2	13.0	16,5 x 21,2	50
55501170	25 x 1.5/1	18.0	21.2	13.0	16,5 x 21,2	50
55501180	25 x 1.5/2	18.0	28.5	13.0	23 x 28,5	25
55501190	32 x 1.5/1	24.0	28.5	15.0	23 x 28,5	25
55501200	32 x 1.5/2	24.0	34.5	15.0	29 x 34,5	10
55501210	40 x 1.5/1	32.0	34.5	15.0	29 x 34,5	10
55501220	40 x 1.5/2	32.0	42.5	15.0	36 x 42,5	10
55501230	50 x 1.5/1	39.0	42.5	16.0	36 x 42,5	10
55501240	50 x 1.5/2	39.0	54.5	16.0	48 x 54,5	5
55501250	63 x 1.5	53.0	54.5	16.0	48 x 54,5	5
SILVYN® KLICK-WM black						
55501115	10 x 1.0	7.0	10.0	12.0	6,5 x 10,0	50
55501125	12 x 1.5	8.0	13.0	12.0	10,0 x 13,0	50
55501135	16 x 1.5/1	12.0	13.0	12.0	10,0 x 13,0	50
55501145	16 x 1.5/2	12.0	15.8	12.0	12 x 15,8	50
55501155	20 x 1.5/1	15.5	15.8	13.0	12 x 15,8	50
55501165	20 x 1.5/2	15.5	21.2	13.0	16,5 x 21,2	50
55501175	25 x 1.5/1	18.0	21.2	13.0	16,5 x 21,2	50
55501185	25 x 1.5/2	18.0	28.5	13.0	23 x 28,5	25
55501195	32 x 1.5/1	24.0	28.5	15.0	23 x 28,5	25
55501205	32 x 1.5/2	24.0	34.5	15.0	29 x 34,5	10
55501215	40 x 1.5/1	32.0	34.5	15.0	29 x 34,5	10
55501225	40 x 1.5/2	32.0	42.5	15.0	36 x 42,5	10
55501235	50 x 1.5/1	39.0	42.5	16.0	36 x 42,5	10
55501245	50 x 1.5/2	39.0	54.5	16.0	48 x 54,5	5
55501255	63 x 1.5	53.0	54.5	16.0	48 x 54,5	5

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® KLICK GPZ-M



Benefits

- Fast assembly
- Easy to disassemble
- Additional cable strain relief
- Additional cable sealing

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Robot-building
- Used in areas where cables and wires need to be provided with strain relief and additional sealing

Approvals



- UL FILENUMBER E308201

Design

- Metric connection thread
- Cable gland
- Body with inner sealing
- Upper part with snap-in sleeve

Note

- For rotating applications, disassemble the upper part to remove sealing, then re-assemble.

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data



Colour delivered
Grey (RAL 7001)
Black (RAL 9005), UV-resistant



Material
PA6



Protection rating
IP 68
IP 69K according to DIN 40050 T.9

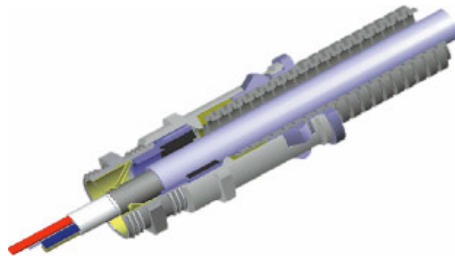
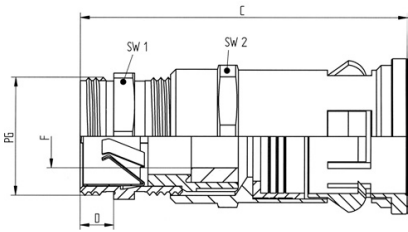


Temperature range
-30°C to +100°C

Article number	Article designation	Hole Ø (mm)	Clamping range (mm)	Thread length, D (mm)	For conduit with outer Ø (mm)	SW (mm)	Suitable for SILVYN® RILL	Pieces / PU
SILVYN® KLICK, GPZ-M grey								
55500800	12 x 1,5	7.0	4.0 - 6.5	8.0	10.0	16.0	7	20
55500810	16 x 1,5	8.0	5.0 - 9.5	8.0	13.0	18.0	9	20
55500820	20 x 1,5	10.0	8.0 - 12.0	8.0	15.8	21.0	11	20
55500830	25 x 1,5	12.0	11.0 - 16.0	8.0	21.2	27.0	16	10
55500840	32 x 1,5	18.0	15.0 - 21.0	11.0	28.5	34.0	21	10
55500850	40 x 1,5	25.0	16.0 - 26.0	12.0	34.5	40.0	29	10
55500860	50 x 1,5	32.0	27.0 - 35.0	13.0	42.5	49.0	36	10
55500870	63 x 1,5	44.0	32.0 - 42.0	14.0	54.5	60.0	48	10
SILVYN® KLICK, GPZ-M black								
55500805	12 x 1,5	7.0	4.0 - 6.5	8.0	10.0	16.0	7	20
55500815	16 x 1,5	8.0	5.0 - 9.5	8.0	13.0	18.0	9	20
55500825	20 x 1,5	10.0	8.0 - 12.0	8.0	15.8	21.0	11	20
55500835	25 x 1,5	12.0	11.0 - 16.0	8.0	21.2	27.0	16	10
55500845	32 x 1,5	18.0	15.0 - 21.0	11.0	28.5	34.0	21	10
55500855	40 x 1,5	25.0	16.0 - 26.0	12.0	34.5	40.0	29	10
55500865	50 x 1,5	32.0	27.0 - 35.0	13.0	42.5	49.0	36	10
55500875	63 x 1,5	44.0	32.0 - 42.0	14.0	54.5	60.0	48	10

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® KSE



SILVYN® KSE

Benefits

- Fast assembly
- Additional cable strain relief
- Additional cable sealing
- Optimum screen connection (EMC)

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Used in areas where screened cables and wires need to have additional protection

Approvals



Design

- Metric connection thread
- EMC cable gland
- Body with inner sealing
- Upper part with snap-in sleeve

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data

RAL Colour delivered
Black (RAL 9005), UV-resistant

Material
Polyamide
Nickel-plated brass

IP Protection rating
IP 68

Temperature range
-40 °C to +115 °C

Article number	PG size	For conduit with outer Ø (mm)	Clamping range (mm)	Overall length, C (mm)	Thread length, D (mm)	SW 1/2 mm	Suitable for SILVYN® RILL	Pieces / PU
SILVYN® KSE								
55001200	9	13.0	4.0 - 8.0	57.0	12.0	17 / 22	9	20
55001210	11	15.8	6.5 - 10.0	62.0	12.0	20 / 25	11	20
55001230	16	21.2	10.0 - 14.0	70.0	12.0	24 / 31	16	10
55001240	21	28.5	14.0 - 17.5	75.0	12.0	30 / 39	21	10

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SILVYN® MSK-M EE refer to page 776
- SILVYN® MSK-M US refer to page 816
- SILVYN® KSE-M refer to page 805

Accessories

- SKINDICHT® SM-PE refer to page 741

SILVYN® KLICK-GP



Benefits

- Fast assembly
- Easy to disassemble
- High-tensile
- High sealing performance
- Can be rotated

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Robot-building
- Rotating applications

Approvals



- UL FILENUMBER E308201

Design

- PG connection thread
- Body with inner sealing
- Upper part with snap-in sleeve

Note

- For rotating applications, disassemble the upper part to remove sealing, then re-assemble.

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data

RAL	Colour delivered Grey (RAL 7001) Black (RAL 9005), UV-resistant
Material	PA6
IP	Protection rating IP 68 IP 69K according to DIN 40050 T.9
Temperature range	-40 °C to +115 °C

Article number	Article designation	Suitable for SILVYN® RILL	For conduit with outer Ø (mm)	Wrench size (mm)	Thread length (mm)	Hole (mm)	Pieces / PU
SILVYN® KLICK-GP grey							
61800860	7	7	10	15.5	10	7	50
61800870	9	9	13	18.0	10	10	50
61800880	11	11	15.8	21.0	10	12.5	50
61800850	13,5	13,5	18.2	24.0	11	13.5	50
61800890	16	16	21.2	27.0	12	17	50
61800900	21	21	28.5	34.0	12	23.5	25
61800910	29	29	34.5	40.0	12	30.5	25
61800920	36	36	42.5	49.0	12	36.5	25
61800930	48	48	54.5	60.0	15	48.5	10
SILVYN® KLICK-GP black							
61800865	7	7	10	15.5	10	7	50
61800875	9	9	13	18.0	10	10	50
61800885	11	11	15.8	21.0	10	12.5	50
61800855	13,5	13,5	18.2	24.0	11	13.5	50
61800895	16	16	21.2	27.0	12	17	50
61800905	21	21	28.5	34.0	12	23.5	25
61800915	29	29	34.5	40.0	12	30.5	25
61800925	36	36	42.5	49.0	12	36.5	25
61800935	48	48	54.5	60.0	15	48.5	10

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® KLICK-GPZ



Benefits

- Fast assembly
- Easy to disassemble
- Additional cable strain relief
- Additional cable sealing

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Robot-building
- Used in areas where cables and wires need to be provided with strain relief and additional sealing

Technical data

RAL	Colour delivered Grey (RAL 7001) Black (RAL 9005), UV-resistant
Material	PA6
IP	Protection rating IP 68 IP 69K according to DIN 40050 T.9
Temperature range	-40 °C to +115 °C

Approvals



- UL FILENUMBER E308201

Design

- PG connection thread
- Cable gland
- Body with inner sealing
- Upper part with snap-in sleeve

Note

- For rotating applications, disassemble the upper part to remove sealing, then re-assemble.

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Article number	Article designation	Suitable for SILVYN® RILL	For conduit with outer Ø (mm)	Wrench size (mm)	Clamping range (mm)	Thread length (mm)	min. lØ (mm)	Pieces / PU
SILVYN® KLICK-GPZ grey								
61801120	7	7	10	16.0	3 - 6.5	8	7.0	20
61801130	9	9	13	18.0	4 - 8	8	8.0	20
61801140	11	11	15.8	21.0	5 - 10	8	10.0	20
61801200	13,5/1	11	15.8	27.0	6 - 12	8	12.0	20
61801202	13,5/2	13,5	18.5	27.0	6 - 12	8	12.0	20
61801150	16	16	21.2	27.0	10 - 14	10	14.0	10
61801160	21	21	28.5	34.0	13 - 18	11	18.0	10
61801170	29	29	34.5	40.0	18 - 25	12	25.0	10
61801180	36	36	42.5	49.0	22 - 32	13	32.0	10
61801190	48	48	54.5	60.0	34 - 44	14	44.0	10
SILVYN® KLICK-GPZ black								
61801125	7	7	10	16.0	3 - 6.5	8	7.0	20
61801135	9	9	13	18.0	4 - 8	8	8.0	20
61801145	11	11	15.8	21.0	5 - 10	8	10.0	20
61801205	13,5/2	13,5	18.5	27.0	6 - 12	8	12.0	20
61801155	16	16	21.2	27.0	10 - 14	10	14.0	10
61801165	21	21	28.5	34.0	13 - 18	11	18.0	10
61801175	29	29	34.5	40.0	18 - 25	12	25.0	10
61801185	36	36	42.5	49.0	22 - 32	13	32.0	10
61801195	48	48	54.5	60.0	34 - 44	14	44.0	10

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SILVYN® KLICK 90° PG



Benefits

- 90° elbow enables best assembling
- Fast assembly
- Easy to disassemble
- High-tensile
- High sealing performance

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- For applications with limited space
- Rotating applications

Approvals



- UL FILENUMBER E308201

Design

- PG connection thread
- 90° elbow
- Body with inner sealing
- Upper part with snap-in sleeve

Note

- For rotating applications, disassemble the upper part to remove sealing, then re-assemble.

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data

RAL	Colour delivered Grey (RAL 7001) Black (RAL 9005), UV-resistant
Material	PA6
IP	Protection rating IP 68 IP 69K according to DIN 40050 T.9
Temperature range	-40 °C to +115 °C

Article number	Article designation	For conduit with outer Ø (mm)	Thread length (mm)	Clear opening (mm)	Pieces / PU
SILVYN® KLICK-WP grey					
61801020	9	13	10	12.0	50
61801030	11	15.8	10	15.5	50
56000100	13,5	18.5	11	13.5	50
61801040	16	21.2	12	18.0	50
61801050	21	28.5	12	24.0	25
61801060	29	34.5	12	32.0	10
61801061	36	42.5	14	36.5	10
61801062	48	54.5	14	48.5	5
SILVYN® KLICK-WP black					
61801025	9	13	10	12.0	50
61801035	11	15.8	10	15.5	50
56000105	13,5	18.5	11	13.5	50
61801045	16	21.2	12	18.0	50
61801055	21	28.5	12	24.0	25
61801065	48	54.5	14	48.5	5

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SILVYN® KLICK-Y / SILVYN® KLICK-Y (TPE)



SILVYN® KLICK-Y



SILVYN® KLICK-Y (TPE)

Benefits

SILVYN® KLICK-Y

- Fast mounting
- Easy to disassemble
- High-tensile
- Easy combination of different conduit sizes

SILVYN® KLICK-Y (TPE)

- Easy to assemble
- High temperature resistance

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Y-distributor for SILVYN® RILL conduits

Approvals



SILVYN® KLICK-Y

- UL FILENUMBER E308201

Design

SILVYN® KLICK-Y

- 3 x conduit connection
- 2 x bore hole for fixation with M5 screws

SILVYN® KLICK-Y (TPE)

- 3 x conduit connection
- 1 x bore hole for fixation with M4 screws

Note

SILVYN® KLICK-Y (TPE)

- For black (RAL 9005), replace the last digit of the part no. with "5".

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data



Upon request
SILVYN® KLICK-Y

More sizes / combinations



Colour delivered

Grey (RAL 7001)
Black (RAL 9005), UV-resistant



Material

SILVYN® KLICK-Y

PA6

SILVYN® KLICK-Y (TPE)

TPE



Protection rating

SILVYN® KLICK-Y

IP 68

IP 69K according to DIN 40050 T.9

SILVYN® KLICK-Y (TPE)

IP 66



Temperature range

-40 °C to +115 °C

Article number	Article designation	Suitable for SILVYN® RILL	For conduit with outer Ø (mm)	Pieces / PU
SILVYN® KLICK-Y grey				
61801090	2 x 7 / 1 x 9	7 / 9	10 / 13	10
61801100	3 x 9	9	13	10
61801110	2 x 9 / 1 x 11	9 / 11	13 / 15.8	10
56000130	3 x 11	11	15.8	10
SILVYN® KLICK-Y black				
61801095	2 x 7 / 1 x 9	7 / 9	10 / 13	10
61801105	3 x 9	9	13	10
61801115	2 x 9 / 1 x 11	9 / 11	13 / 15.8	10
56000135	3 x 11	11	15.8	10
SILVYN® KLICK-Y (TPE) grey				
56000120	3 x 7	7	10	10
56000140	2 x 11 / 1 x 16	11 / 16	13 / 21.2	10
56000150	2 x 16 / 1 x 21	16 / 21	21.2 / 28.5	10
56000160	2 x 21 / 1 x 29	21 / 29	28.5 / 34.5	10
SILVYN® KLICK-Y (TPE) black				
56000125	3 x 7	7	10	10
56000145	2 x 11 / 1 x 16	11 / 16	13 / 21.2	10
56000155	2 x 16 / 1 x 21	16 / 21	21.2 / 28.5	10
56000165	2 x 21 / 1 x 29	21 / 29	28.5 / 34.5	10

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® KLICK-S / SILVYN® KLICK-D / SILVYN® KLICK-V



SILVYN® KLICK-S



SILVYN® KLICK-D



SILVYN® KLICK-V

Benefits

SILVYN® KLICK-S

- Fast assembly
- Easy to disassemble
- Tear-proof connection
- No slack in the conduit

SILVYN® KLICK-D

- Ensures that the conduit is fixed to the conduit-holder

SILVYN® KLICK-V

- Connects several conduit holders with one another

Application range

SILVYN® KLICK-S

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Fastening of conduits on machine walls for all applications

SILVYN® KLICK-D

- In combination with
- SILVYN® KLICK S
- Cover for conduit holder SILVYN® KLICK S

SILVYN® KLICK-V

- In combination with

Product features

SILVYN® KLICK-S

- Impact-resistant polyamide

SILVYN® KLICK-D

- Fits tightly to SILVYN® KLICK S

SILVYN® KLICK-V

- Fits tightly to SILVYN® KLICK S

Approvals



Design

SILVYN® KLICK-S

- Multi-part conduit holder with M5 borehole for fixation

SILVYN® KLICK-D

- Cover with connection pins

SILVYN® KLICK-V

- Connection pin

Note

- For black (RAL 9005), replace the last digit of the part no. with "5".

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data



Colour delivered
Grey (RAL 7001)
Black (RAL 9005), UV-resistant



Material
PA6



Temperature range
-40 °C to +115 °C

Article number	PG size	Pieces / PU
SILVYN® KLICK-S grey		
61811110	7	100
61811120	9	100
61811130	11	50
61811190	13,5	50
61811140	16	50
61811150	21	50
61811160	29	30
61811170	36	20
61811180	48	20
SILVYN® KLICK-D grey		
61811200	7	100
61811260	11	50
61811210	16	50
61811220	21	50
61811230	29	30
61811240	36	20
61811250	48	20
SILVYN® KLICK-V grey		
61811270		100

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

SILVYN® KLICK-D

- SILVYN® KLICK-S refer to page 792

SILVYN® KLICK-V

- SILVYN® KLICK-S refer to page 792

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SILVYN® KLICK-RH

Benefits

- Fast assembly
- Easy to disassemble
- Tear-proof connection
- No slack in the conduit
- No loose parts

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Fastening of conduits on machine walls for all applications

Product features

- Impact-resistant polyamide
- One-piece conduit holder
- Suitable for mounting onto a C-profile rail
- Stackable

Approvals



- UL FILENUMBER E308201

Design

- One-piece conduit holder with M4/M5/M6 borehole for fixation

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data

RAL	Colour delivered Grey (RAL 7001) Black (RAL 9005), UV-resistant
	Material PA6
	Temperature range -40 °C to +115 °C



SILVYN® KLICK-RH

Article number	PG size	Pieces / PU
SILVYN® KLICK-RH grey		
65500300	7	50
65500310	9	50
65500320	11	50
65500330	13.5	50
65500340	16	50
65500350	21	25
65500360	29	25
65500370	36	25
65500380	48	10
SILVYN® KLICK-RH black		
65500305	7	50
65500315	9	50
65500325	11	50
65500335	13.5	50
65500345	16	50
65500355	21	25
65500365	29	25
65500375	36	25
65500385	48	10

Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- Easy to assemble
- High temperature resistance
- Cable damage can be prevented
- Additional sealing

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Intersection or end sleeve

Technical data

RAL	Colour delivered Grey (RAL 7001) Black (RAL 9005), UV-resistant
	Material TPE-V
	Temperature range -40 °C to +120 °C

Approvals



Suitable conduits

- SILVYN® FPAS Page 797
- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Article number	Article designation	For conduit with outer Ø (mm)	Cable Ø (mm)	Overall length (mm)	Pieces / PU
SILVYN® K-EM grey					
65500200	7	10	1.0 - 8.0	29.0	50
65500210	9	13	1.0 - 10.0	32.5	50
65500220	11	15.8	4.0 - 12.0	36.5	50
65500230	16	21.2	6.0 - 16.5	37.5	50
65500240	21	28.5	6.0 - 23.0	40.2	25
65500250	29	34.5	6.0 - 29.0	44.2	25
65500260	36	42.5	10.0 - 37.0	46.0	25
65500270	48	54.5	10.0 - 47.0	52.0	10
SILVYN® K-EM black					
65500205	7	10	1.0 - 8.0	29.0	50
65500215	9	13	1.0 - 10.0	32.5	50
65500225	11	15.8	4.0 - 12.0	36.5	50
65500235	16	21.2	6.0 - 16.5	37.5	50
65500245	21	28.5	6.0 - 23.0	40.2	25
65500255	29	34.5	6.0 - 29.0	44.2	25
65500265	36	42.5	10.0 - 37.0	46.0	25
65500275	48	54.5	10.0 - 47.0	52.0	10

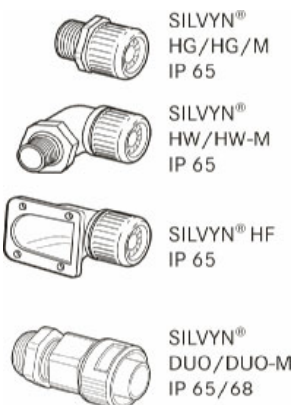
Photographs are not to scale and do not represent detailed images of the respective products.

For current information see: www.lappgroup.com

SILVYN® HCC



SILVYN® HCC



Benefits

- Dimensionally stable
- Flexible
- Lightweight
- Crush-resistant

Application range

- Mechanical engineering
- Apparatus construction
- Building Automation
- Moving applications
- Outdoors

Product features

- Conduit with full metric design
- Halogen and cadmium-free
- Abrasion-resistant
- High resistance to oil, petrol, acids and other chemicals

Approvals



Design

- Fine-profile corrugated polyamide 6 conduit

Note

- UV-resistant and weather-resistant

Technical data

RAL	Colour delivered Black (RAL 9005), UV-resistant
	Material PA6 Halogen-free
	Temperature range -25 °C to +100 °C

Article number	Article designation	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Suitable for SILVYN® HG-M	Suitable for SILVYN® HW-M	PU ring (m)
SILVYN® HCC							
61793970	12	9.4 x 13.0	25	9.4	12	12	50
61793980	16	11.6 x 16.0	30	11.6	16	16	50
61793990	20	14.6 x 20.0	40	14.6	20	20	50
61794000	25	18.7 x 25.0	50	18.7	25	25	50
61794010	32	25.6 x 32.0	65	25.6	32	32	25
61794020	40	33.1 x 40.0	85	33.1	40		25
61794030	50	42.7 x 50.0	110	42.7	50		25
61794035	63	54.6 x 63.0	130	54.6	63		25

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® HG-M refer to page 795
- SILVYN® HW-M refer to page 795
- SILVYN® DUO-M refer to page 796
- SILVYN® SCLX refer to page 796

SILVYN® HG-M / SILVYN® HW-M



SILVYN® HG-M



SILVYN® HW-M

Benefits

SILVYN® HG-M

- Easy to disassemble
- High-tensile
- Sealing

SILVYN® HW-M

- 90° elbow enables best assembling
- Easy to disassemble
- High-tensile
- Sealing

Design

SILVYN® HG-M

- Metric connection thread
- Body with sealing and clamping ring
- Cap nut

SILVYN® HW-M

- Metric connection thread
- 90° elbow
- Body with sealing and clamping ring
- Cap nut

Technical data

RAL	Colour delivered Black (RAL 9005), UV-resistant
Material	PA6
IP	Protection rating IP 65
Temperature range	-25°C to +100°C

Application range

SILVYN® HG-M

- In combination with protective conduit
- SILVYN® HCC

SILVYN® HW-M

- In combination with protective conduit
- SILVYN® HCC
- For applications with limited space

Note

SILVYN® HG-M

- In black colour UV-resistant and weather-proofed

SILVYN® HW-M

- UV-resistant and weather-resistant

Suitable conduits

- SILVYN® HCC Page 794

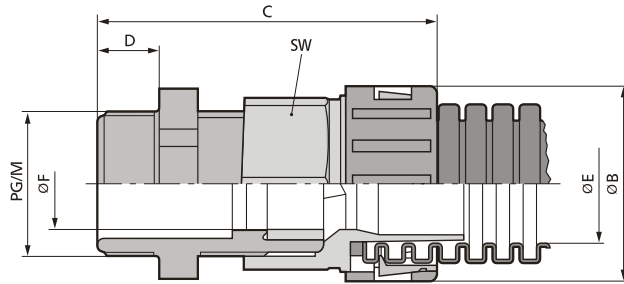
Approvals



Article number	Article designation	Overall length, C (mm)	Thread length, D (mm)	Suitable for SILVYN® HCC	Pieces / PU
SILVYN® HG-M					
55501600	12 x 1,5	26.3	8.0	12	100
55501610	16 x 1,5	29.4	12.5	16	100
55501620	20 x 1,5	36.0	12.0	20	50
55501630	25 x 1,5	45.4	15.0	25	50
55501640	32 x 1,5	47.0	15.0	32	30
55501650	40 x 1,5	53.0	15.0	40	20
55501660	50 x 1,5	57.4	15.0	50	16
55501670	63 x 1,5	74.0	20.0	63	8
SILVYN® HW-M					
55501680	12 x 1,5		8.0	12	50
55501690	16 x 1,5		10.5	16	20
55501700	20 x 1,5		12.0	20	20
55501710	25 x 1,5		15.0	25	10
55501720	32 x 1,5		15.0	32	10

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® DUO-M



SILVYN® DUO-M

■ Benefits

- Easy to disassemble
- Additional cable strain relief
- Additional cable sealing

■ Application range

- In combination with protective conduit
- SILVYN® HCC

■ Approvals



■ Design

- Metric connection thread
- Cable gland
- Body with sealing and clamping ring
- Upper part with snap-in sleeve

■ Note

- In black colour UV-resistant and weather-proofed

■ Suitable conduits

- SILVYN® HCC Page 794

■ Technical data

- i** Upon request
Grey
- RAL** Colour delivered
Black (RAL 9005), UV-resistant
- Material**
PA6
- IP** Protection rating
IP 68

Article number	M size	Clamping range (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Suitable for SILVYN® HCC	Pieces / PU
SILVYN® DUO-M							
61809310	16 x 1,5	3.5 - 8.0	19	49.8	12.0	16	50
61809320	20 x 1,5	5.0 - 12.0	24	53.6	13.0	20	50
61809330	25 x 1,5	9.0 - 14.0	27	59.1	13.0	25	50

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® SCLX



■ Benefits

- Fast assembly
- Easy to disassemble
- Tear-proof connection
- No slack in the conduit

■ Application range

- In combination with protective conduit
- SILVYN® HCC
- Fastening of conduits on machine walls for all applications

■ Approvals



■ Technical data

- RAL** Colour delivered
Black (RAL 9005), UV-resistant
- Material**
PA6
- Temperature range**
-30 °C to +70 °C

■ Design

- Multi-part conduit holder with M5 borehole for fixation
- Cover with connection snap system

■ Note

- UV-resistant and weather-resistant

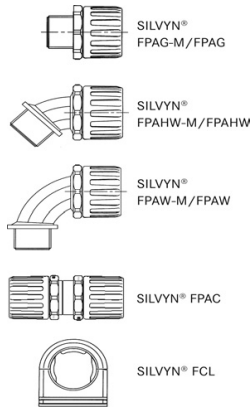
■ Suitable conduits

- SILVYN® HCC Page 794

Article number	Article designation	Pieces / PU
SILVYN® SCLX holder		
61814000	16	100
61814010	20	100
61814020	25	100
61814030	32	50
61814040	40	50
61814050	50	50
SILVYN® SCLX clamp		
61814070	16	100
61814080	20	100
61814090	25	100
61814100	32	100
61814110	40	100
61814120	50	100

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® FPAS



SILVYN® FPAS

Benefits

- Dimensionally stable
- Flexible
- Flame-retardant and self-extinguishing according to UL 94V-2
- High crush-resistance
- Impact-resistant

Application range

- Mechanical engineering
- Plant engineering
- Railway applications / vehicle construction
- Moving applications
- Outdoors

Product features

- Halogen and cadmium-free
- Abrasion-resistant
- High resistance to oil, petrol, acids and other chemicals

Approvals

- RoHS**
- UL FILENUMBER E308201
- UNDERGROUND

Design

- Fine-profile corrugated polyamide 6 conduit

Technical data

- Colour delivered**
Black (RAL 9005), UV-resistant
Grey (RAL 7001)
- Material**
PA 6
Halogen-free
- Temperature range**
-40°C to +120°C static
-20°C to +100°C dynamic

Article number	Article designation	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	PU ring (m)
SILVYN® FPAS black					
61754005	10	6.3 x 10.0	15	6.3	50
61754015	13	9.8 x 13.0	25	9.8	50
61754025	16	11.8 x 15.8	40	11.8	50
61754275	18	14.2 x 18.5	40	14.2	50
61754035	21	16.7 x 21.2	45	16.7	50
61754045	28	22.8 x 28.5	50	22.8	50
61754055	34	28.1 x 34.5	60	28.1	25
61754065	42	35.5 x 42.5	70	35.5	25
61754075	54	47.2 x 54.5	80	47.2	25
61754305	67	56.3 x 67.2	130	56.3	10
SILVYN® FPAS grey					
61754000	10	6.3 x 10.0	15	6.3	50
61754010	13	9.8 x 13.0	25	9.8	50
61754020	16	11.8 x 15.8	40	11.8	50
61754270	18	14.2 x 18.5	40	14.2	50
61754030	21	16.7 x 21.2	45	16.7	50
61754040	28	22.8 x 28.5	50	22.8	50
61754050	34	28.1 x 34.5	60	28.1	25
61754060	42	35.5 x 42.5	70	35.5	25
61754070	54	47.2 x 54.5	80	47.2	25
61754300	67	56.3 x 67.2	130	56.3	10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® FPAG-M refer to page 798
- SILVYN® FPAX-M refer to page 799
- SILVYN® FPAHW-M refer to page [P1179]
- SILVYN® FPAG 90° M refer to page 800
- SILVYN® KSE-M refer to page 805
- SILVYN® FPAG refer to page 803
- SILVYN® FPAG 90° PG refer to page 803
- SILVYN® FCL refer to page 804
- SILVYN® FPAC refer to page 805
- SILVYN® FLEXILOK M refer to page 801
- SILVYN® FLEXILOK PG refer to page 801
- SILVYN® FLEXILOK 90° M refer to page 802
- SILVYN® FLEXILOK 90° PG refer to page 802

SILVYN® FPAG-M



SILVYN® FPAG-M

■ Benefits

- Fast assembly
- High-tensile
- Sealing
- Vibration protection

■ Application range

- In combination with protective conduit
- SILVYN® FPAS
- Applications with strong vibrations

■ Product features

- In black colour UV-resistant and weather-proofed
- Removeable with a screwdriver

■ Approvals



- UL FILENUMBER E308201
- UNDERGROUND

■ Design

- Metric connection thread
- Body
- Upper part with integrated all-round tothing

■ Suitable conduits

- SILVYN® FPAS Page 797

■ Technical data

RAL	Colour delivered Black (RAL 9005), UV-resistant Grey (RAL 7001)
	Material PA66 Halogen-free
IP	Protection rating IP 66
	Temperature range -40°C to +135°C

Article number	Article designation	For conduit with outer Ø (mm)	Suitable for SILVYN® FPAS	Pieces / PU
SILVYN® FPAG-M black				
55506305	M12x1,5	10.0	10	10
55506315	M16x1,5/1	13.0	13	10
55506325	M16x1,5/2	15.8	16	10
55506335	M20x1,5/1	15.8	16	10
55506345	M20x1,5/2	21.2	21	10
55507055	M20x1,5/3	18.5	18	10
55506355	M25x1,5	28.5	28	10
55506365	M32x1,5	34.5	34	10
55506375	M40x1,5	42.5	42	2
55506385	M50x1,5/1	42.5	42	2
55506395	M50x1,5/2	54.5	54	2
55506405	M63x1,5/1	54.5	54	2
55506475	M63x1,5/2	67.2	67	2
SILVYN® FPAG-M grey				
55506300	M12x1,5	10.0	10	10
55506310	M16x1,5/1	13.0	13	10
55506320	M16x1,5/2	15.8	16	10
55506330	M20x1,5/1	15.8	16	10
55506340	M20x1,5/2	21.2	21	10
55507050	M20x1,5/3	18.5	18	10
55506350	M25x1,5	28.5	28	10
55506360	M32x1,5	34.5	34	10
55506370	M40x1,5	42.5	42	2
55506380	M50x1,5/1	42.5	42	2
55506390	M50x1,5/2	54.5	54	2
55506400	M63x1,5/1	54.5	54	2
55506470	M63x1,5/2	67.2	67	2

Photographs are not to scale and do not represent detailed images of the respective products.

■ Similar products

- SILVYN® FPAX-M refer to page 799
- SILVYN® KSE-M refer to page 805

SILVYN® FPAX-M



Benefits

- Fast mounting
- High tensile strength
- Watertight
- Vibration protection

Application range

- In combination with protective conduit
- SILVYN® FPAS
- Applications with strong vibrations

Product features

- In black colour UV-resistant and weather-proofed
- Removeable with a screwdriver

Approvals



- UL FILENUMBER E308201
- UNDERGROUND

Design

- Metric connection thread
- Body with inner sealing
- Upper part with integrated all-round tothing

Suitable conduits

- SILVYN® FPAS Page 797



Info

- IP68
- IP69K

Technical data



Upon request
With PG thread



Colour delivered
Black (RAL 9005), UV-resistant
Grey (RAL 7001)



Material
PA66
Halogen-free



Protection rating
IP68
IP69K



Temperature range
-40°C to +135°C

Article number	Connection thread M	Suitable for SILVYN® FPAS	Pieces / PU
SILVYN® FPAX-M black			
55506135	16 x 1.5/1	FPAS 13	10
55506145	16 x 1.5/2	FPAS 16	10
55506155	20 x 1.5/1	FPAS 16	10
55506165	20 x 1.5/2	FPAS 21	10
55506185	32 x 1.5	FPAS 34	10
55506195	40 x 1.5	FPAS 42	10
55506205	50 x 1.5	FPAS 42	10
55506215	50 x 1.5	FPAS 54	10
55506225	63 x 1.5	FPAS 67	10
SILVYN® FPAX-M grey			
55506235	16 x 1.5/1	FPAS 13	10
55506245	16 x 1.5/2	FPAS 16	10
55506255	20 x 1.5/1	FPAS 16	10
55506265	20 x 1.5/2	FPAS 21	10
55506175	25 x 1.5 BK	FPAS 28	10
55506275	25 x 1.5 GY	FPAS 28	10
55506285	32 x 1.5	FPAS 34	10
55506295	40 x 1.5	FPAS 42	10
55507265	50 x 1.5	FPAS 42	10
55507275	50 x 1.5	FPAS 54	10
55507285	63 x 1.5	FPAS 67	10

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® FPAG 90° M



■ Benefits

- 90° elbow enables best assembling
- Fast assembly
- High-tensile
- Sealing
- Vibration protection

■ Application range

- In combination with protective conduit
- SILVYN® FPAS
- Applications with strong vibrations
- For applications with limited space

■ Product features

- In black colour UV-resistant and weather-proofed
- Removeable with a screwdriver

■ Approvals



- UL FILENUMBER E308201
- UNDERGROUND

■ Design

- Metric connection thread
- 90° elbow
- Body
- Upper part with integrated all-round tooting

■ Suitable conduits

- SILVYN® FPAS Page 797

■ Technical data

RAL	Colour delivered Black (RAL 9005), UV-resistant Grey (RAL 7001)
	Material PA66 Halogen-free
IP	Protection rating IP66
	Temperature range -50°C to +135°C

Article number	Article designation	Suitable for SILVYN® FPAS	Pieces / PU
SILVYN® FPAG 90° M black			
55506485	M12x1,5	10	10
55506495	M16x1,5/1	13	10
55506505	M16x1,5/2	16	10
55506515	M20x1,5/1	16	10
55506525	M20x1,5/2	21	10
55507075	M20x1,5/3	18	10
55506535	M25x1,5	28	10
55506545	M32x1,5	34	10
55507085	M40x1,5	42	1
55506555	M50x1,5/1	42	1
55506565	M50x1,5/2	54	1
55506575	M63x1,5/1	54	1
55507095	M63x1,5/2	67	1
SILVYN® FPAG 90° M grey			
55506480	M12x1,5	10	10
55506490	M16x1,5/1	13	10
55506500	M16x1,5/2	16	10
55506510	M20x1,5/1	16	10
55506520	M20x1,5/2	21	10
55507070	M20x1,5/3	18	10
55506530	M25x1,5	28	10
55506540	M32x1,5	34	10
55507080	M40x1,5	42	1
55506550	M50x1,5/1	42	1
55506560	M50x1,5/2	54	1
55506570	M63x1,5/1	54	1
55507090	M63x1,5/2	67	1

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® FLEXILOK PG / SILVYN® FLEXILOK M



Info

- Extremely economical



Benefits

- Fast assembly
- Easy to assemble
- Cost-effective conduit gland
- No loose parts
- New space-saving design

Application range

SILVYN® FLEXILOK M

- Mechanical engineering
- Control cabinet manufacturing
- Moving applications
- Applications with limited space
- Building Installation

SILVYN® FLEXILOK PG

- Mechanical engineering
- Control cabinet manufacturing
- Moving applications
- Applications with limited space
- Building installation

Product features

- In black colour UV-resistant and weather-proofed
- One-piece slim design
- Halogen and cadmium-free

Approvals



Design

- Connection thread metric/PG
- One-piece body
- Special clamping system

Note

- Removeable with a screwdriver

Suitable conduits

- SILVYN® FPAS Page 797
- Parallel corrugated plastic conduits

Technical data

Upon request
white, light grey (RAL7035)

Colour delivered
Black (RAL 9005), UV-resistant
Grey (RAL 7001)

Material
PA66
Halogen-free

Protection rating
IP 66

Temperature range
-50°C to +135°C

Article number	Connection thread M	Inner Ø (mm)	Thread length, D (mm)	Suitable for SILVYN® FPAS	Suitable for conduit OØ (mm)	Pieces / PU
SILVYN® FLEXILOK M black						
65500405	16 x 1.5	12.0	12.0	FPAS 13	13,0	50
65500425	16 x 1.5	12.0	12.0	FPAS 16	15,8	50
65500415	20 x 1.5	14.0	14.0	FPAS 13	13,0	50
65500435	20 x 1.5	14.0	14.0	FPAS 16	15,8	50
65500445	20 x 1.5	14.0	14.0	FPAS 21	21,2	50
65500455	25 x 1.5	20.0	15.0	FPAS 28	28,5	50
65500465	32 x 1.5	27.0	16.0	FPAS 34	34,5	50
SILVYN® FLEXILOK M grey						
65500600	16 x 1.5	12.0	12.0	FPAS 13	13,0	50
65500420	16 x 1.5	12.0	12.0	FPAS 16	15,8	50
65500410	20 x 1.5	14.0	14.0	FPAS 13	13,0	50
65500430	20 x 1.5	14.0	14.0	FPAS 16	15,8	50
65500440	20 x 1.5	14.0	14.0	FPAS 21	21,2	50
65500610	25 x 1.5	20.0	15.0	FPAS 28	28,5	50
65500460	32 x 1.5	27.0	16.0	FPAS 34	34,5	50
SILVYN® FLEXILOK PG black						
65500475	9.0	12.0	10.0	FPAS 13	13,0	50
65500495	9.0	12.0	10.0	FPAS 16	15,8	50
65500485	11.0	12.0	10.0	FPAS 13	13,0	50
65500395	11.0	15.0	10.0	FPAS 16	15,8	50
68100055	13.5	15.0	10.0	FPAS 16	15,8	50
68100075	13.5	16.0	10.0	FPAS 21	21,2	50
68100065	16.0	15.0	11.0	FPAS 16	15,8	50
68100085	16.0	18.0	11.0	FPAS 21	21,2	50
68100095	21.0	23.0	12.0	FPAS 28	28,5	50
68880005	29.0	31.0	12.0	FPAS 34	34,5	50
SILVYN® FLEXILOK PG grey						
65500470	9.0	12.0	10.0	FPAS 13	13,0	50
65500490	9.0	12.0	10.0	FPAS 16	15,8	50
65500480	11.0	12.0	10.0	FPAS 13	13,0	50
65500390	11.0	15.0	10.0	FPAS 16	15,8	50
68100050	13.5	15.0	10.0	FPAS 16	15,8	50
68100070	13.5	16.0	10.0	FPAS 21	21,2	50
68100060	16.0	15.0	11.0	FPAS 16	15,8	50
68100080	16.0	18.0	11.0	FPAS 21	21,2	50
68100090	21.0	23.0	12.0	FPAS 28	28,5	50
65500620	29.0	31.0	12.0	FPAS 34	34,5	50

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® FLEXILOK 90° PG / SILVYN® FLEXILOK 90° M



Info

- Extremely economical
- 90° elbow enables best assembling

Benefits

- Fast assembly
- Easy to assemble
- Cost-effective conduit gland
- No loose parts
- New space-saving design

Application range

- Mechanical engineering
- Control cabinet manufacturing
- Moving applications
- Applications with limited space
- Building installation

Product features

- In black colour UV-resistant and weather-proofed
- One-piece slim design
- Halogen and cadmium-free

Approvals



Design

- Connection thread metric/PG
- 90° elbow
- Special clamping system

Note

- Removeable with a screwdriver

Suitable conduits

- SILVYN® FPAS Page 797
- SILVYN® FPAS
- Parallel corrugated plastic conduits

Technical data

- Upon request**
white, light grey (RAL7035)
- Colour delivered**
Black (RAL 9005), UV-resistant
Grey (RAL 7001)
- Material**
PA66
Halogen-free
- Protection rating**
IP 66
- Temperature range**
-50°C to +135°C

Article number	Connection thread M	Inner Ø (mm)	Thread length, D (mm)	Suitable for SILVYN® FPAS	Suitable for conduit OØ (mm)	Pieces / PU
SILVYN® FLEXILOK 90° M black						
68100100	16 x 1.5	12.0	12.0	FPAS 16	13,0	50
68100105	20 x 1.5	14.0	14.0	FPAS 16	13,0	50
68100110	20 x 1.5	14.0	14.0	FPAS 21	21,2	50
68100115	25 x 1.5	20.0	15.0	FPAS 21	28,5	50
68100120	32 x 1.5	27.0	16.0	FPAS 21	28,5	50
SILVYN® FLEXILOK 90° M grey						
68100125	16 x 1.5	12.0	12.0	FPAS 16	13,0	50
68100130	20 x 1.5	14.0	14.0	FPAS 16	13,0	50
68100135	20 x 1.5	14.0	14.0	FPAS 21	21,2	50
68100140	25 x 1.5	20.0	15.0	FPAS 21	28,5	50
68100145	32 x 1.5	27.0	16.0	FPAS 21	28,5	50
SILVYN® FLEXILOK 90° PG black						
68100150	9.0	12.0	10.0	FPAS 16	15,8	50
68100155	11.0	12.0	10.0	FPAS 16	15,8	50
68100160	11.0	12.0	10.0	FPAS 16	15,8	50
68100170	13.5	15.0	10.0	FPAS 21	21,2	50
68100165	16.0	15.0	11.0	FPAS 16	15,8	50
68100175	16.0	18.0	11.0	FPAS 21	21,2	50
68100180	21.0	23.0	12.0	FPAS 28	28,5	50
68100185	29.0	31.0	12.0	FPAS 34	34,5	50
SILVYN® FLEXILOK 90° PG grey						
68100190	9.0	12.0	10.0	FPAS 16	15,8	50
68100195	11.0	12.0	10.0	FPAS 16	15,8	50
68100200	11.0	12.0	10.0	FPAS 16	15,8	50
68100210	13.5	15.0	10.0	FPAS 21	21,2	50
68100205	16.0	15.0	11.0	FPAS 16	15,8	50
68100215	16.0	18.0	11.0	FPAS 21	21,2	50
68100220	21.0	23.0	12.0	FPAS 28	28,5	50
68100225	29.0	31.0	12.0	FPAS 34	34,5	50

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SILVYN® FPAG 90° PG / SILVYN® FPAG



SILVYN® FPAG 90° PG

SILVYN® FPAG

Benefits

SILVYN® FPAG

- Fast mounting
- High-tensile
- Sealing
- Vibration protection

SILVYN® FPAG 90° PG

- 90° elbow enables best assembling
- Fast mounting
- High-tensile
- Sealing
- Vibration protection

Application range

SILVYN® FPAG

- In combination with protective conduit
- SILVYN® FPAS
- Applications with strong vibrations

SILVYN® FPAG 90° PG

- In combination with protective conduit
- SILVYN® FPAS
- Applications with strong vibrations
- For applications with limited space

Product features

- In black colour UV-resistant and weather-proofed
- Removable with a screwdriver

Approvals



- UL FILENUMBER E308201
- UNDERGROUND

Design

SILVYN® FPAG

- PG connection thread
- Body
- Upper part with integrated all-round toothing

SILVYN® FPAG 90° PG

- PG connection thread
- 90° elbow
- Body
- Upper part with integrated all-round toothing

Note

SILVYN® FPAG

- Upon request
- IP 68 (available upon request)

SILVYN® FPAG 90° PG

- Upon request

Suitable conduits

- SILVYN® FPAS Page 797

Technical data



Upon request
Available design
in IP 68



Colour delivered
Black (RAL 9005), UV-resistant
Grey (RAL 7001)



Material
PA66
Halogen-free



Protection rating
IP 66



Temperature range
-50°C to +135°C

Article number	Article designation	Suitable for SILVYN® FPAS	Pieces / PU
SILVYN® FPAG black			
55506585	PG 7	10	10
55506595	PG 9/1	10	10
55506605	PG 9/2	13	10
55506615	PG 9/3	16	10
55506625	PG 11	16	10
55506635	PG 13,5/1	16	10
55506645	PG 13,5/2	18	10
55506995	PG 13,5/3	21	10
55506655	PG 16	21	10
55506665	PG 21	28	10
55506675	PG 29	34	10
55506685	PG 36	42	2
55506695	PG 48/1	54	2
55506705	PG 48/2	67	2
SILVYN® FPAG grey			
55506580	PG 7	10	10
55506590	PG 9/1	10	10
55506600	PG 9/2	13	10
55506610	PG 9/3	16	10
55506620	PG 11	16	10
55506630	PG 13,5/1	16	10
55506640	PG 13,5/2	18	10
55506990	PG 13,5/3	21	10
55506650	PG 16	21	10
55506660	PG 21	28	10
55506670	PG 29	34	10
55506680	PG 36	42	2
55506690	PG 48/1	54	2
55506700	PG 48/2	67	2

Parallel corrugated protective cable conduit systems

SILVYN® FPAS

Article number	Article designation	Suitable for SILVYN® FPAS	Pieces / PU
SILVYN® FPAG 90° PG black			
55506715	PG 7	10	10
55506725	PG 9	13	10
55506735	PG 11	16	10
55506745	PG 13,5/1	16	10
55506755	PG 13,5/2	18	10
55506815	PG 13,5/3	21	10
55506765	PG 16	21	10
55506775	PG 21	28	10
55506785	PG 29	34	10
55506795	PG 36	42	1
55506805	PG 48/1	54	1
55506825	PG 48/2	67	1
SILVYN® FPAG 90° PG grey			
55506710	PG 7	10	10
55506720	PG 9	13	10
55506730	PG 11	16	10
55506740	PG 13,5/1	16	10
55506750	PG 13,5/2	18	10
55506810	PG 13,5/3	21	10
55506760	PG 16	21	10
55506770	PG 21	28	10
55506780	PG 29	34	10
55506790	PG 36	42	1
55506800	PG 48/1	54	1
55506820	PG 48/2	67	1

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® FCL



Benefits

- Fast mounting
- Easy to disassemble
- No slack in the conduit
- No loose parts

Application range

- In combination with protective conduit
- SILVYN® FPAS
- Fastening of conduits on machine walls for all applications

Product features

- Removeable with a screwdriver
- One-piece conduit holder

Approvals



Technical data

RAL	Colour delivered Black (RAL 9005), UV-resistant Grey (RAL 7001)
	Material PA66 Halogen-free
	Temperature range -50°C to +135°C

Design

- One-piece conduit holder with borehole for fixation

Note

- UV-resistant and weather-resistant

Suitable conduits

- SILVYN® FPAS Page 797

Article number	Article designation	Hole Ø (mm)	Suitable for SILVYN® FPAS	Pieces / PU
SILVYN® FCL black				
55506905	10	5.0	10	10
55506915	13	5.0	13	10
55506925	16	5.0	16	10
55506985	18	6.0	18	10
55506935	21	6.0	21	10
55506945	28	6.0	28	10
55506955	34	6.0	34	10
55506965	42	6.0	42	5
55506975	54	6.0	54	5
SILVYN® FCL grey				
55506900	10	5.0	10	10
55506910	13	5.0	13	10
55506920	16	5.0	16	10
55506980	18	6.0	18	10
55506930	21	6.0	21	10
55506940	21	6.0	21	10
55506950	21	6.0	21	10
55506960	42	6.0	42	5
55506970	54	6.0	54	5

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® FPAC

Benefits

- Fast mounting
- Tear-proof connection
- Optional extension of parallel corrugated conduits

Application range

- In combination with protective conduit
- SILVYN® FPAS
- Conduit coupler for extension

Product features

- Removeable with a screwdriver

Approvals



Technical data

RAL Colour delivered
Black (RAL 9005), UV-resistant
Grey (RAL 7001)

Material
PA66
Halogen-free

IP Protection rating
IP 66

Temperature range
-50°C to +135°C

Note

- UV-resistant and weather-resistant

Suitable conduits

- SILVYN® FPAS Page 797



Article number	Article designation	Suitable for SILVYN® FPAS	Pieces / PU
SILVYN® FPAC black			
55507005	16	16	5
55507015	21	21	5
55507025	28	28	5
55507035	34	34	5
SILVYN® FPAC grey			
55507000	16	16	5
55507010	21	21	5
55507020	28	28	5
55507030	34	34	5

Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- Fast mounting
- Vibration protection
- Additional cable strain relief
- Additional cable sealing
- Optimum screen connection (EMC)

Application range

- In combination with protective conduit
- SILVYN® FPAS
- Used in areas where screened cables and wires need to have additional protection

Product features

- In black colour UV-resistant and weather-proofed
- Removeable with a screwdriver

Approvals



Technical data

RAL Colour delivered
Black (RAL 9005), UV-resistant

Material
Nickel-plated brass
PA66
Silicone-free
Halogen-free

IP Protection rating
Conduit: IP66
Cable: IP68

Temperature range
-30°C to +100°C

Design

- Metric connection thread
- EMC cable gland
- Body
- Upper part with integrated all-round tothing

Suitable conduits

- SILVYN® FPAS Page 797



Article number	Connection thread M	Clamping range (mm)	Thread length, D (mm)	Suitable for SILVYN® FPAS	For conduit with outer Ø (mm)	Pieces / PU
SILVYN® KSE-M black						
55507105	16 x 1.5/1	4.5 - 9.0	12.0	13	13,0	10
55507115	16 x 1.5/2	4.5 - 9.0	12.0	16	15,8	10
55507125	20 x 1.5/1	7.0 - 12.5	12.0	16	15,8	10
55507135	20 x 1.5/2	7.0 - 12.5	12.0	21	21,2	10
55507145	25x1.5	9.0 - 16.5	12.0	28	28,5	10
55507155	32 x 1.5	11.0 - 21.0	15.0	34	34,5	10
55507165	40x1.5	19.0 - 28.0	15.0	42	42,5	1
55507175	50 x 1.5	27.0 - 35.0	15.0	54	54,5	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINDICHT® SM-PE-M refer to page 694

SILVYN® MAXI PA



■ Benefits

- Dimensionally stable
- Flexible
- High flame-retardance and self-extinguishing in accordance with UL 94V-0
- Crush-resistant

■ Application range

- Mechanical engineering
- Public utilities
- Moving applications
- Outdoors

■ Product features

- Halogen and cadmium-free
- Abrasion-resistant
- High resistance to oil, petrol, acids and other chemicals

■ Approvals



- UL FILENUMBER E308201

■ Design

- Thick-walled corrugated polyamide 6 conduit

■ Note

- UV-resistant and weather-resistant

■ Technical data



Upon request
Available in PA 12



Colour delivered
Grey (RAL 7001)
Black (RAL 9005), UV-resistant



Material
PA 6
Halogen-free



Temperature range
-40°C to +115°C
short-term +150°C

Article number	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Weight (kg/m)	Suitable for SILVYN® AFG-PA/AFW-PA	PU ring (m)
SILVYN® MAXI PA grey						
61791150	66.5 x 79.2	170	66.5	0.46	70	10
61791160	91.0 x 106.0	225	91.0	0.79	95	10
SILVYN® MAXI PA black						
61791155	66.5 x 79.2	170	66.5	0.46	70	10
61791165	91.0 x 106.0	225	91.0	0.79	95	10

Photographs are not to scale and do not represent detailed images of the respective products.

■ Accessories

- SILVYN® AFG-PA refer to page 807
- SILVYN® AFW-PA refer to page 807

SILVYN® AFW-PA / SILVYN® gasket AFG-PA / AFW-PA / SILVYN® AFG-PA



Benefits

SILVYN® AFG-PA

- Tear-resistant connection
- Secure conduit insertion
- High flame-retardance and self-extinguishing in accordance with UL 94V-0

SILVYN® gasket AFG-PA / AFW-PA

- Increases the IP degree of protection of SILVYN® AFG-PA and SILVYN® AFW-PA

SILVYN® AFW-PA

- 90° elbow enables best assembling
- Tear-resistant connection
- Secure conduit insertion
- High flame-retardance and self-extinguishing in accordance with UL 94V-0

Application range

SILVYN® AFG-PA

- In combination with protective conduit
- SILVYN® MAXI PA
- Mechanical engineering
- Bundling and guiding of cables and wires

SILVYN® gasket AFG-PA / AFW-PA

- In combination with protective conduit
- SILVYN® MAXI PA
- SILVYN® AFG-PA
- SILVYN® AFW-PA

SILVYN® AFW-PA

- In combination with protective conduit
- SILVYN® MAXI PA
- Mechanical engineering
- Bundling and guiding of cables and wires
- For applications with limited space

Approvals



SILVYN® AFG-PA

- UL FILENUMBER E308201
- SILVYN® gasket AFG-PA / AFW-PA
- IP 69K according to DIN 40050 T.9

Design

SILVYN® AFG-PA

- One-piece connector with clap mechanism specifically designed for use with the SILVYN® MAXI PA. Thanks to the special design, the conduit can be pre-locked and mounted ready for connection

SILVYN® gasket AFG-PA / AFW-PA

- Sealing element with adjusted corrugation profile

SILVYN® AFW-PA

- One-piece 90° elbow connector with clap mechanism specifically designed for use with the SILVYN® MAXI PA. Thanks to the special design, the conduit can be pre-locked and mounted ready for connection

Note

SILVYN® AFG-PA

- UV-resistant and weather-resistant

SILVYN® AFW-PA

- UV-resistant and weather-resistant

Suitable conduits

- SILVYN® MAXI PA Page 806

Technical data

RAL Colour delivered
SILVYN® AFG-PA
 Grey (RAL 7001)
 Black (RAL 9005), UV-resistant
SILVYN® AFW-PA
 Grey (RAL 7001)
 Black (RAL 9005), UV-resistant

Material
SILVYN® AFG-PA
 PA6
SILVYN® AFW-PA
 PA6

IP Protection rating
SILVYN® AFG-PA
 IP 54
 IP 66 with AFG-PA/AFW-PA seal
SILVYN® AFW-PA
 IP 54
 IP 66 with AFG-PA/AFW-PA seal

Temperature range
SILVYN® AFG-PA
 -30°C to +100°C
SILVYN® AFW-PA
 -30°C to +100°C

Article number	Article designation	Nominal size	A mm	B in mm	Overall length, C (mm)	D (mm)	E mm	F mm	H	I	J	K	L	N	O	Pieces / PU
SILVYN® AFG-PA grey																
55001080	70 straight	70	94.0	96.0	60.5	80.5										1
55001081	95 straight	95	128.0	126.0	74.0	108.0										1
SILVYN® AFG-PA black																
55001085	70 straight	70	94.0	96.0	60.5	80.5										1
55001086	95 straight	95	128.0	126.0	74.0	108.0										1
SILVYN® seal for AFG-PA, AFW-PA																
55001082	70															1
55001083	95															1
SILVYN® AFW-PA grey																
55001090	70 - 90°- angle		94.0	96.0	60.5	80.5	96.4	69	70.0	56.5	6.2	152.5	103.5	81.5	175.0	1
55001091	95 - 90°- angle		128.0	126.0	74.0	108.0	123.5	96	95.0	55.0	7.0	202.5	127.5	98.5	224.5	1
SILVYN® AFW-PA black																
55001093	70 - 90°- angle		94.0	96.0	60.5	80.5	96.4	69	70.0	56.5	6.2	152.5	103.5	81.5	175.0	1
55001092	95 - 90°- angle		128.0	126.0	74.0	108.0	123.5	96	95.0	55.0	7.0	202.5	127.5	98.5	224.5	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

SILVYN® AFG-PA

- SILVYN® gasket AFG-PA / AFW-PA refer to page 807

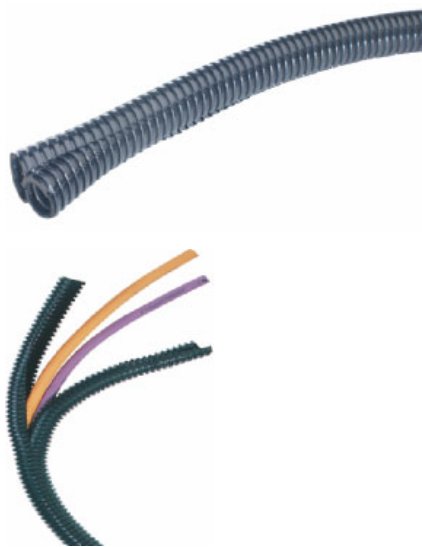
SILVYN® gasket AFG-PA / AFW-PA

- SILVYN® AFG-PA refer to page 807
- SILVYN® AFW-PA refer to page 807

SILVYN® AFW-PA

- SILVYN® gasket AFG-PA / AFW-PA refer to page 807

SILVYN® SPLIT



Benefits

- Dimensionally stable
- Flexible
- Crush-resistant
- Subsequent cable protection after cable installation
- Fast and easy assembly

Application range

- Vehicle construction
- Shipbuilding
- Mechanical engineering
- Electrical industry
- Used in areas where cables and wires need to be protected after assembly

Product features

- Halogen and cadmium-free
- Abrasion-resistant
- High resistance to oil, petrol, acids and other chemicals

Approvals



Design

- Divisible corrugated polyamide 6 conduit

Note

- UV-resistant and weather-resistant
- Upon request
- SILVYN® SPLIT PP (polypropylene)
- SILVYN® SPLIT NW 54/70



Info

- New sizes are available

Technical data



Upon request
SILVYN® SPLIT PP (polypropylene)
SILVYN® SPLIT NW 54/70



Colour delivered
Black (RAL 9005), UV-resistant



Material
Halogen-free PA



Protection rating
IP 43 with SILVYN® SPLIT COV



Temperature range
-40 °C to +120 °C
short-term 150 °C

Article number	Article designation	Bending radius (mm)	Conduit size (mm)	For conduit with outer Ø (mm)	Suitable for SILVYN® COV	PU (m)
SILVYN® SPLIT						
61806621	8	70	6.2/11.2	11.2		50
61806620	10	55	8.9/13.6	13.6	M16/PG9	50
61806630	14	75	12.9/18.7	18.7	M20/PG13,5	50
61806631	16	100	10.3/15.8	15.8		50
61806640	20	105	19.8/25.9	25.9	M25/PG21	50
61806641	21	120	13.9/21.0	21.0		50
61806650	23	125	23.7/31.3	31.3	M32/PG29	50
61806651	32	180	26.2/34.5	34.5		50
61806660	37	170	31.7/41.9	41.9	M40/PG29	25
61806670	45	170	43.1/54.2	54.2	M50	25

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- Cable protective conduit for preassembling refer to page 811

Accessories

- SILVYN® SPLIT COV refer to page 809
- SILVYN® SPLIT COS refer to page 809

SILVYN® SPLIT COS / SILVYN® SPLIT GMP-M / SILVYN® SPLIT COV



Benefits

SILVYN® SPLIT COV

- Fast and easy assembly
- Subsequent mountable conduit insertion

SILVYN® SPLIT COS

- Fast mounting
- Easy to disassemble
- Tear-proof connection
- No slack in the conduit
- No loose parts

Application range

SILVYN® SPLIT COV

- In combination with protective conduit
- SILVYN® SPLIT
- Mechanical engineering
- Electrical industry
- Used in areas where cables and wires need to be protected after assembly

SILVYN® SPLIT COS

- In combination with protective conduit
- SILVYN® SPLIT
- Fastening of conduits on machine walls for all applications

Product features

SILVYN® SPLIT COV

- Included: divisible counter nut

SILVYN® SPLIT COS

- One-piece conduit holder

Approvals



Design

SILVYN® SPLIT COS

- One-piece conduit holder with M4/M5/M6 borehole for fixation

Note

- UV-resistant and weather-resistant

Suitable conduits

- SILVYN® SPLIT Page 808

Technical data

RAL Colour delivered
Black (RAL 9005), UV-resistant

Material
Halogen-free PA

Temperature range
-40°C to +120°C

Article number	Article designation	Thread size	Conduit size (mm)	For conduit with outer Ø (mm)	Suitable for SILVYN® SPLIT	Pieces / PU
SILVYN® SPLIT COV						
61806760	10	9	8.9 / 13.6	13.6	10	100
61806770	14	13.5	12.9 / 18.7	18.7	14	100
61806780	20	21	19.8 / 25.9	25.9	20	50
61806790	23	29	23.7 / 31.3	31.3	23	50
61806800	37	29	31.7 / 41.9	41.9	37	25
SILVYN® SPLIT COV-M						
61806680	10	16	8.9 / 13.6	13.6	10	100
61806681	14	20	12.9 / 18.7	18.7	14	100
61806682	20	25	19.8 / 25.9	25.9	20	50
61806683	23	32	23.7 / 31.3	31.3	23	50
61806684	37	40	31.7 / 41.9	41.9	37	25
61806685	45	50	43.1 / 54.2	54.2	37	25
SILVYN® SPLIT COS						
61806690	10		8.9 / 13.6	13.6	10	100
61806700	14		12.9 / 18.7	18.7	14	100
61806710	20		19.8 / 25.9	25.9	20	50
61806720	23		23.7 / 31.3	31.3	23	50
61806730	37		31.7 / 41.9	41.9	37	20
61806740	45		43.1 / 54.2	54.2	45	20

Photographs are not to scale and do not represent detailed images of the respective products.

New

SILVYN® SPLIT GMP-M



SILVYN® SPLIT GMP-M

■ Benefits

- Fast mounting
- Easy to disassemble

■ Note

- UV-resistant and weather-resistant

■ Suitable conduits

- SILVYN® SPLIT Page 808

■ Technical data

	Colour delivered Black (RAL 9005), UV-resistant
	Material Halogen-free PA
	Temperature range -40°C to +120°C

Article number	PG size
61806686	16
61806687	20
61806688	25
61806689	32
61806691	40
61806692	50

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® RILL PA6 SINUS



Info

- Sinusoidal slit for subsequent assembly
- Made of special heat-resistant polyamide up to +140°C



SILVYN® RILL PA6 SINUS

Benefits

- Dimensionally stable
- Flexible
- Crush-resistant
- Subsequent cable protection
- Sinusoidal slit remains closed under torsion for the most part

Application range

- Mechanical engineering
- Electrical industry
- Shipbuilding
- Solar applications

Product features

- High resistance to oil, petrol, acids and other chemicals
- Halogen and cadmium-free
- Abrasion-resistant

Approvals

- NFR-13-903 from 8.4 x 11.4

Design

- Fine-profile corrugated polyamide 6 conduit with sinusoidal slit

Note

- Upon request
- SILVYN® RILL PA6 SINUS PP (polypropylene)

Technical data



Approvals

GGVS, NFR-13-903 from 8.4 x 11.4



Note

Elongation at tear in accordance with DIN 53 455: 50 - 200 %
Impact resistance in accordance with DIN 53 453: without rupture
Notched impact resistance in accordance with DIN 53 453: without rupture
Flammability rating: UL 94HB



Colour delivered

Black (RAL 9005), UV-resistant



Material

PA6 heat-modified
Cadmium-free
Halogen-free



Temperature range

-40°C to +140°C

Article number	Internal Ø x external Ø (mm)	Inner Ø (mm)	Suitable for SILVYN® holder	PU ring (m)
SILVYN® RILL PA6 SINUS				
61806550	6,7 x 10,0	6.7	FCL 10 / 5550 6905	50
61806555	8,4 x 11,4	8.4		50
61806560	9,9 x 13,0	9.9	FCL 13 / 5550 6915	50
61806565	12,2 x 15,7	12.2	FCL 16 / 5550 6925	50
61806570	16,6 x 21,2	16.6	FCL 21 / 5550 6935	50
61806575	21,3 x 25,4	21.3	SPLIT COS 20 / 6180 6710	50
61806580	23,2 x 28,3	23.2	FCL 28 / 5550 6945	50

Photographs are not to scale and do not represent detailed images of the respective products.

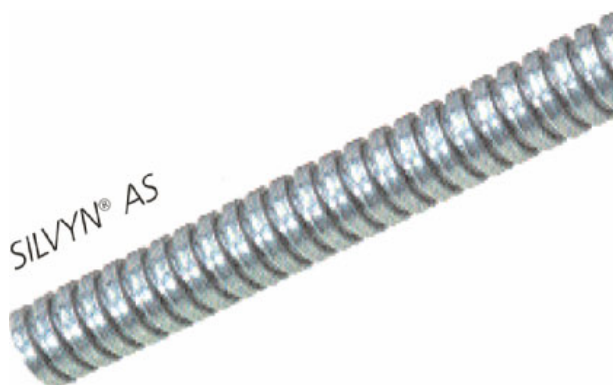
Similar products

- SILVYN® SPLIT refer to page 808

Accessories

- SILVYN® SPLIT COS refer to page 809
- SILVYN® FCL refer to page 804
- STKP tool of the cable eater serves as an insertion tool

SILVYN® AS



SILVYN® US-AS



SILVYN®
US/US-M + US-AS
IP 40



SILVYN® MSK-M

SILVYN® AS

■ Benefits

- High-tensile
- High crush-resistance
- Flexible
- High mechanical resistance
- Heat-resistant

■ Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Rolling stock
- Applications with high mechanical stress

■ Approvals



- VDE
- DIN 49012, complies with design G according to EN 500886-2-3
- In EX-area according to VDE 0165 DIN EN 50281-1-2

■ Design

- Spirally-wound metal protective conduit with roughened profile

■ Note

- Upon request
- PU 10 m

■ Technical data



Material

Cold strip DC Ø3 according to EN 10139, zinc-plated Fe/Zn3



Temperature range

Up to +220°C

Article number	PG size	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Suitable for SILVYN® MSK-M	Suitable for SILVYN® US-M	Suitable for SILVYN® US/US-EDU-AS/US MS-DR	PU ring (m)
SILVYN® AS								
61802080	7	8.0 x 10.0	28	8.0	12 x 1,5	10 x 1,0	7	50
61802090	9	11.0 x 14.0	34	11.0	16 x 1,5	12 x 1,5	9	50
61802100	11	14.0 x 17.0	40	14.0	20 x 1,5	16 x 1,5	11	50
61802110	13.5	16.0 x 19.0	45	16.0			13,5	50
61802120	16	18.0 x 21.0	50	18.0	25 x 1,5	20 x 1,5	16	50
61802130	21	23.0 x 27.0	63	23.0	32 x 1,5	25 x 1,5	21	50
61802140	29	31.0 x 36.0	85	31.0	40 x 1,5	32 x 1,5	29	25
61802150	36	40.0 x 45.0	100	40.0	50 x 1,5	40 x 1,5	36	25
61802170	48	51.0 x 56.0	125	51.0	63 x 1,5	50 x 1,5	48	25

Photographs are not to scale and do not represent detailed images of the respective products.

■ Similar products

- SILVYN® EDU-AS refer to page 813

■ Accessories

- SILVYN® MSK-M US refer to page 816
- SILVYN® US-M refer to page 777
- SILVYN® US refer to page 778
- SILVYN® US-AS refer to page 819

SILVYN® EDU-AS



SILVYN® MSK-M



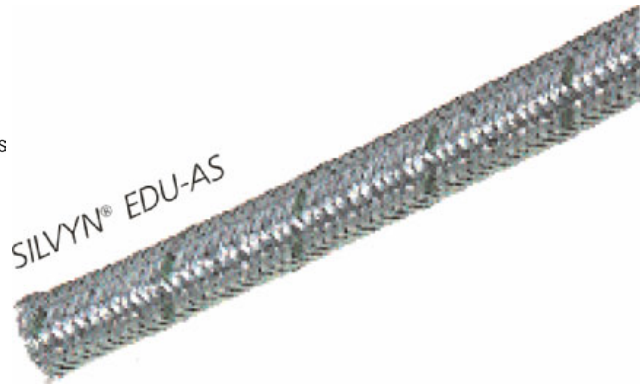
SILVYN® US/US-M + US-EDU-AS
IP 40



SILVYN® US-EDU-AS



SILVYN® US MS-DR



SILVYN® EDU-AS

Benefits

- Protects against hot chips
- High-tensile
- High crush-resistance
- Flexible
- For high mechanical stress

Application range

- Mechanical engineering
- Plant engineering
- Automation technology
- Used in areas where cables and wires could be damaged by welding sparks and hot chips
- Applications with high mechanical stress

Approvals



- VDE
- DIN 49012, complies with design K according to EN 500886-2-3
- In EX-area according to VDE 0165 DIN EN 50281-1-2

Design

- Spirally-wound metal protective conduit with roughened profile
- Galvanised steel wire braiding

Note

- Upon request
- PU 10 m
- Up to +400°C

Technical data



Material
Cold strip DC Ø3 according to EN 10139, zinc-plated Fe/Zn3
Braiding: zinc-plated steel wire



Temperature range
Up to +220°C

Article number	PG size	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Suitable for SILVYN® MSK-M	Suitable for SILVYN® US-M	Suitable for SILVYN® US/US-EDU-AS/US MS-DR	PU ring (m)
SILVYN® EDU-AS								
61802380	7	7.0 x 10.0	28	7.0	12 x 1,5	10 x 1,0	7	50
61802390	9	10.0 x 14.0	34	10.0	16 x 1,5	12 x 1,5	9	50
61802400	11	13.0 x 17.0	40	13.0	20 x 1,5	16 x 1,5	11	50
61802410	13.5	15.0 x 19.0	45	15.0			13,5	50
61802420	16	17.0 x 21.0	50	17.0	25 x 1,5	20 x 1,5	16	50
61802430	21	22.0 x 27.0	63	22.0	32 x 1,5	25 x 1,5	21	50
61802440	29	29.0 x 36.0	85	29.0	40 x 1,5	32 x 1,5	29	25
61802450	36	38.0 x 45.0	100	38.0	50 x 1,5	40 x 1,5	36	25
61802470	48	49.0 x 56.0	135	49.0	63 x 1,5	50 x 1,5	48	25

Photographs are not to scale and do not represent detailed images of the respective products.

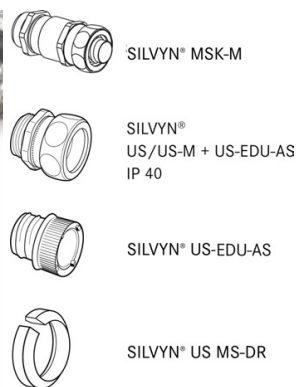
Accessories

- SILVYN® MSK-M US refer to page 816
- SILVYN® US-M refer to page 777
- SILVYN® US refer to page 778
- SILVYN® US-EDU-AS refer to page 819
- SILVYN® US-MS-DR refer to page 819

Metal protective cable conduit systems

SILVYN® AS/EDU-AS/AS-P

SILVYN® EMC AS-CU



SILVYN® EMC AS-CU

■ **Benefits**

- Optimum EMC protection
- High-tensile
- High crush-resistance
- Flexible
- High mechanical resistance

■ **Application range**

- Mechanical engineering
- Automotive industry
- Conveyor technology
- Railway applications / vehicle construction
- Used in areas where electromagnetic interferences can occur

■ **Product features**

- According to VG 95373 Part 41, a screening factor from 10 MHz up to 30 dB can be reached.

■ **Approvals**



■ **Design**

- Spirally-wound metal protective conduit with roughened profile
- Tinned-copper braiding

■ **Technical data**

Material
 Inner conduit: cold strip St 2 according to EN 10139 Fe/Zn3, galvanised. Braiding: tinned-copper

Temperature range
 Up to +150°C

Article number	Article designation	Article IØ x OØ (mm)	Bending radius (mm)	Suitable for SILVYN® MSK-M	Suitable for SILVYN® US-M	Suitable for SILVYN® US/US-EDU-AS/US MS-DR	PU ring (m)
SILVYN® EMC AS-CU							
64400500	SILVYN® EMC AS-CU 10	7.0 x 10.0	28	12 x 1,5	10 x 1,0	7	50
64400501	SILVYN® EMC AS-CU 14	10.0 x 14.0	34	16 x 1,5	12 x 1,5	9	50
64400502	SILVYN® EMC AS-CU 17	13.0 x 17.0	40	20 x 1,5	16 x 1,5	11	50
64400503	SILVYN® EMC AS-CU 19	15.0 x 19.0	45			13,5	50
64400504	SILVYN® EMC AS-CU 21	17.0 x 21.0	50	25 x 1,5	20 x 1,5	16	50
64400505	SILVYN® EMC AS-CU 27	22.0 x 27.0	63	32 x 1,5	25 x 1,5	21	50
64400506	SILVYN® EMC AS-CU 36	29.0 x 36.0	85	40 x 1,5	32 x 1,5	29	25
64400507	SILVYN® EMC AS-CU 45	38.0 x 45.0	100	50 x 1,5	40 x 1,5	36	25
64400508	SILVYN® EMC AS-CU 56	49.0 x 56.0	135	63 x 1,5	50 x 1,5	48	25

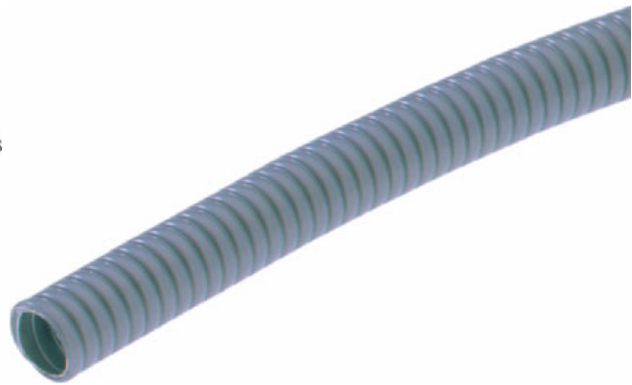
Photographs are not to scale and do not represent detailed images of the respective products.

■ **Accessories**

- 3M Scotch™ 1183 screening tape refer to page 944
- SILVYN® MSK-M US refer to page 816
- SILVYN® US-M refer to page 777
- SILVYN® US refer to page 778
- SILVYN® US-EDU-AS refer to page 819
- SILVYN® US-MS-DR refer to page 819

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

SILVYN® AS-P



SILVYN® AS-P

Benefits

- Protects against liquids
- High-tensile
- High crush-resistance
- Flexible
- High mechanical resistance

Application range

- Mechanical engineering
- Plant engineering
- Automation technology
- Used in areas where liquids are present
- Applications with high mechanical stress

Approvals



- VDE
- DIN 49012, complies with design I according to EN 500886-2-3

Design

- Spirally-wound metal protective conduit with roughened profile
- PVC outer sheath

Note

- Upon request
- RAL 9005 schwarz/UV-beständig

Technical data

RAL	Colour delivered Grey
	Material Cold strip DC Ø3 according to DIN 10139, zinc-plated Fe/Zn3 Sheath: PVC
	Temperature range -25°C to +80°C Short-term: up to +100°C

Article number	PG size	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Suitable for SILVYN® MSK-M	Suitable for SILVYN® US-M	Suitable for SILVYN® US/US-EDU-AS/US MS-DR	PU ring (m)
SILVYN® AS-P								
64400010	7	7.0 x 10.0	32	7.0	12 x 1,5	10 x 1,0	7	50
64400020	9	10.0 x 14.0	40	10.0	16 x 1,5	12 x 1,5	9	50
64400030	11	13.0 x 17.0	45	13.0	20 x 1,5	16 x 1,5	11	50
64400040	13,5	15.0 x 19.0	52	15.0			13,5	50
64400050	16	17.0 x 21.0	58	17.0	25 x 1,5	20 x 1,5	16	50
64400060	21	22.0 x 27.0	72	22.0	32 x 1,5	25 x 1,5	21	50
64400070	29	29.0 x 36.0	98	29.0	40 x 1,5	32 x 1,5	29	25
64400080	36	38.0 x 45.0	118	38.0	50 x 1,5	40 x 1,5	36	25
64400090	48	49.0 x 56.0	140	49.0	63 x 1,5	50 x 1,5	48	25
SILVYN® AS-P 10M								
64400100	7	7.0 x 10.0	32	7.0	12 x 1,5	10 x 1,0	7	10
64400110	9	10.0 x 14.0	40	10.0	16 x 1,5	12 x 1,5	9	10
64400120	11	13.0 x 17.0	45	13.0	20 x 1,5	16 x 1,5	11	10
64400130	13,5	15.0 x 19.0	52	15.0			13,5	10
64400140	16	17.0 x 21.0	58	17.0	25 x 1,5	20 x 1,5	16	10
64400150	21	22.0 x 27.0	72	22.0	32 x 1,5	25 x 1,5	21	10
64400160	29	29.0 x 36.0	98	29.0	40 x 1,5	32 x 1,5	29	10
64400170	36	38.0 x 45.0	118	38.0	50 x 1,5	40 x 1,5	36	10
64400180	48	49.0 x 56.0	140	49.0	63 x 1,5	50 x 1,5	48	10

Photographs are not to scale and do not represent detailed images of the respective products.

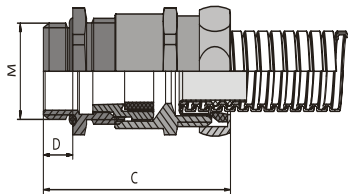
Accessories

- SILVYN® MSK-M US refer to page 816
- SILVYN® US-M refer to page 777
- SILVYN® US refer to page 778
- SILVYN® US-AS refer to page 819
- SILVYN® US-EDU-AS refer to page 819

Metal protective cable conduit systems

SILVYN® AS/EDU-AS/AS-P

SILVYN® MSK-M US



SILVYN® MSK-M US

Benefits

- Optimum cable and conduit strain relief
- Maximum cable sealing
- Fast and easy assembly
- Wide clamping range
- Anti-turn protection

Application range

- In combination with protective conduit
- SILVYN® AS
- SILVYN® EDU-AS/EMC AS-CU/AS-P
- Indoor / outdoor applications
- Used in areas where cables and wires need to be provided with strain relief and additional sealing

Product features

- Combination of SILVYN® and SKINTOP®

Approvals



Design

- Optional:
- SKINTOP® MS-M cable gland
- SKINTOP® MS-SC-M EMC connection
- SKINTOP® DIX multiple sealing insert
- SILVYN® conduit connection via inner sleeve and cap nut

Note

- Upon request
- With XL connection thread (on request)
- For suitable accessories, refer to SKINTOP® metric accessories

Suitable conduits

- SILVYN® AS Page 812
- SILVYN® EDU-AS Page 813
- SILVYN® AS-P Page 815
- SILVYN® EMC AS-CU Page 814

Technical data



Material

Basis type:
Body: nickel-plated brass
Conduit connector seal: CR/NBR
Tube seal: TPE



Protection rating

Cable: IP 68
Conduit:
IP 40 with SILVYN® AS, EDU-AS, EMC AS-CU
IP 65 with SILVYN® FPS, AS-P
IP 66 with SILVYN® FD-PU



Temperature range

-30°C to +100°C

Article number	Article designation	Suitable for conduit OØ (mm)	Pieces / PU
SILVYN® MSK-M for SILVYN® AS			
55506080	MSK-M M12x1,5 AS	AS 7	5
55506081	MSK-M M16x1,5 AS	AS 9	5
55506082	MSK-M M20x1,5 AS	AS 11	5
55506083	MSK-M M25x1,5 AS	AS 16	5
55506084	MSK-M M32x1,5 AS	AS 21	5
55506085	MSK-M M40x1,5 AS	AS 29	1
55506086	MSK-M M50x1,5 AS	AS 36	1
55506087	MSK-M M63x1,5 AS	AS 48	1
SILVYN® MSK-M for SILVYN® EDU-AS/AS-P/EMC AS-CU			
55506090	MSK-M M12x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 7	5
55506091	MSK-M M16x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 9	5
55506092	MSK-M M20x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 11	5
55506093	MSK-M M25x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 16	5
55506094	MSK-M M32x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 21	5
55506095	MSK-M M40x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 29	1
55506096	MSK-M M50x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 36	1
55506097	MSK-M M63x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 48	1
SILVYN® MSK-M for SILVYN® AS			
55506110	MSK-SC-M M12x1,5 AS	AS 7	5
55506111	MSK-SC-M M16x1,5 AS	AS 9	5
55506112	MSK-SC-M M20x1,5 AS	AS 11	5
55506113	MSK-SC-M M25x1,5 AS	AS 16	5
55506114	MSK-SC-M M32x1,5 AS	AS 21	5
55506115	MSK-SC-M M40x1,5 AS	AS 29	1
55506116	MSK-SC-M M50x1,5 AS	AS 36	1
SILVYN® MSK-M for SILVYN® EDU-AS/AS-P			
55506120	MSK-SC-M M12x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 7	5
55506121	MSK-SC-M M16x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 9	5
55506122	MSK-SC-M M20x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 11	5
55506123	MSK-SC-M M25x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 16	5
55506124	MSK-SC-M M32x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 21	5
55506125	MSK-SC-M M40x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 29	1
55506126	MSK-SC-M M50x1,5 EDU	EDU-AS, AS-P, EMC AS-CU 36	1

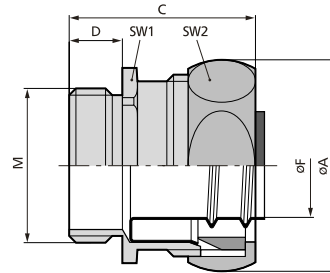
Other variations with multiple SKINTOP® DIX-M sealing inserts are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® DIX-M refer to page 672
- SKINTOP® DIX-M AUTOMATION refer to page 673
- SKINTOP® DIX-DV refer to page 675

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SILVYN® US-M



SILVYN® US-M

Benefits

- High tensile strength
- Space-saving
- Vibration protection
- Can be used universally

Application range

- In combination with protective conduit
- SILVYN® FPS/FD-PU
- SILVYN®AS/EDU-AS/EMC AS-CU/AS-P
- Mechanical engineering
- Plant engineering

Product features

- Compact design
- Can be used as an EMC gland by using the SILVYN® US-MS-DR brass ring

Approvals



Design

- Metric connection thread
- Hexagonal collar
- Inner sleeve (not included)
- Sealing element
- Cap nut

Note

- Required inner sleeve is not included
- SILVYN® EE-K
- SILVYN® US-AS/US-EDU-AS
- To be ordered separately based on the preferred conduit system

Suitable conduits

- SILVYN® FPS Page 774
- SILVYN® EDU-AS Page 813
- SILVYN® FD-PU Page 775
- SILVYN® AS-P Page 815
- SILVYN® EMC AS-CU Page 814

Technical data



Material
Body: nickel-plated brass
Sealing ring: TPE



Protection rating
IP 40 (with SILVYN® AS, EDU-AS and EMC AS-CU)
IP 54 (with SILVYN® FPS and FD-PU)
IP 66 (with SILVYN® AS-P)



Temperature range
-40°C to +125°C

Article number	Size M	SW 1/2 mm	C mm	D (mm)	Suitable for SILVYN® FD-PU/FPS	Suitable for SILVYN® AS	Suitable for SILVYN® EDU-AS/AS-P/EMC AS-CU	Pieces / PU
SILVYN® US-M								
55501500	10 x 1.0	15 / 17	31	10	7 x 10	8 x 10	7 x 10	50
55501510	12 x 1.5	19 / 21	33	10	10 x 14	11 x 14	10 x 14	50
55501520	16 x 1.5	23 / 25	33	10	13 x 17	14 x 17	13 x 17	50
55501530	20 x 1.5	27 / 29	33	10	16 x 21	18 x 21	17 x 21	50
55501540	25 x 1.5	34 / 36	41	11	22 x 27	23 x 27	22 x 27	25
55501550	32 x 1.5	43 / 45	43	13	29 x 36	31 x 36	29 x 36	25
55501560	40 x 1.5	52 / 54	43	13	38 x 45	40 x 45	38 x 44	20
55501570	50 x 1.5	63 / 66	49	14	48 x 56	51 x 56	49 x 56	10

Photographs are not to scale and do not represent detailed images of the respective products.

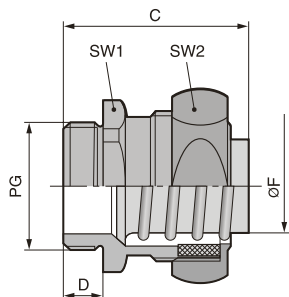
Similar products

- SILVYN® MSK-M EE refer to page 776
- SILVYN® MSK-M US refer to page 816

Metal protective cable conduit systems

SILVYN® AS/EDU-AS/AS-P

SILVYN® US



SILVYN® US

Benefits

- High tensile strength
- Space-saving
- Vibration protection
- Can be used universally

Application range

- In combination with protective conduit
- SILVYN® FPS/FD-PU
- SILVYN® AS/EDU-AS/EMC AS-CU/AS-P
- Mechanical engineering
- Plant engineering

Product features

- Compact design
- Can be used as an EMC gland by using the SILVYN® US-MS-DR brass ring

Approvals



Design

- PG connection thread
- Hexagonal collar
- Inner sleeve (not included)
- Sealing element
- Cap nut

Note

- Required inner sleeve is not included
- SILVYN® EE-K
- SILVYN® US-AS/US-EDU-AS
- To be ordered separately based on the preferred conduit system

Suitable conduits

- SILVYN® FPS Page 774
- SILVYN® EDU-AS Page 813
- SILVYN® FD-PU Page 775
- SILVYN® AS-P Page 815
- SILVYN® EMC AS-CU Page 814

Technical data



Material
Body: nickel-plated brass
Sealing ring: TPE



Protection rating
IP 40 (with SILVYN® AS, EDU-AS and EMC AS-CU)
IP 54 (with SILVYN® FPS and FD-PU)
IP 66 (with SILVYN® AS-P)



Temperature range
-40°C to +125°C

Article number	PG size	Overall length, C (mm)	D (mm)	F mm	SW 1/2 mm	Suitable for SILVYN® FPS/FD-PU	Suitable for SILVYN® AS	Suitable for SILVYN® EDU-AS/AS-P/EMC AS-CU	Pieces / PU
SILVYN® US									
61795080	7	28.0	7.0	9	15 / 17	7 x 10	8 x 10	7 x 10	50
61795090	9	30.0	7.0	11	19 / 21	10 x 14	11 x 14	10 x 14	50
61795100	11	30.0	7.0	15	23 / 25	13 x 17	14 x 17	13 x 17	50
61795110	13.5	30.0	7.0	17	25 / 27	15 x 19	16 x 19	15 x 19	50
61795120	16	30.0	7.0	19	27 / 29	16 x 21	18 x 21	17 x 21	50
61795130	21	40.0	10.0	24	34 / 36	22 x 27	23 x 27	22 x 27	25
61795140	29	40.0	10.0	32	43 / 45	29 x 36	31 x 36	29 x 36	25
61795150	36	40.0	10.0	42	52 / 54	38 x 45	40 x 45	38 x 45	20
61795170	48	45.0	10.0	55	63 / 77	48 x 56	51 x 56	49 x 56	10

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SILVYN® US-MS-DR / SILVYN® US-EDU-AS / SILVYN® US-AS



SILVYN® US-MS-DR



SILVYN® US-EDU-AS



SILVYN® US-AS

Benefits

SILVYN® US-AS

- Cable damage can be prevented

SILVYN® US-EDU-AS

- Cable damage can be prevented

SILVYN® US-MS-DR

- Enables the discharge of interference currents through the connection with the SILVYN® US-M/US gland
- At temperatures over 100°C, the clamping ring can be used as sealing alternative

Application range

SILVYN® US-AS

- In combination with protective conduit
- SILVYN® AS

SILVYN® US-EDU-AS

- In combination with protective conduit
- SILVYN® EDU-AS/EMC AS-CU/AS-P

SILVYN® US-MS-DR

- In combination with protective conduit
- SILVYN® AS
- SILVYN® EDU-AS/EMC AS-CU
- As EMC connection

Product features

SILVYN® US-AS

- All-round collar completely covers the protective conduit end

SILVYN® US-EDU-AS

- All-round collar completely covers the protective conduit end

Approvals



Design

SILVYN® US-AS

- Threaded sleeve

SILVYN® US-EDU-AS

- Threaded sleeve

Note

SILVYN® US-AS

- Necessary for connecting SILVYN® AS conduit with SILVYN® US-M/US

SILVYN® US-EDU-AS

- Necessary for connecting SILVYN® EDU-AS/EMC AS-CU/AS-P conduit with SILVYN® US-M/US

Technical data



Material
SILVYN® US-AS
 Nickel-plated brass
SILVYN® US-EDU-AS
 Brass
SILVYN® US-MS-DR
 Brass

Suitable conduits

SILVYN® US-AS

- SILVYN® AS-P Page 815

SILVYN® US-EDU-AS

- SILVYN® EDU-AS Page 813
- SILVYN® AS-P Page 815
- SILVYN® EMC AS-CU Page 814

SILVYN® US-MS-DR

- SILVYN® EDU-AS Page 813
- SILVYN® EMC AS-CU Page 814

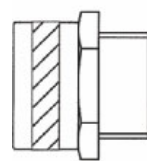
Article number	PG size	AØ tube - IØ sleeve (mm)	For conduit with outer Ø (mm)	Pieces / PU
SILVYN® US-AS for SILVYN® AS				
61802180	7	10.0 - 6.5	10.0	50
61802190	9	14.0 - 9.5	14.0	50
61802200	11	17.0 - 12.5	17.0	50
61802210	13.5	19.0 - 14.5	19.0	50
61802220	16	21.0 - 16.5	21.0	50
61802230	21	27.0 - 21.5	27.0	25
61802240	29	36.0 - 29.5	36.0	25
61802250	36	45.0 - 38.0	45.0	20
61802270	48	56.0 - 48.0	56.0	10
SILVYN® US-EDU-AS for SILVYN® EDU-AS/AS-P				
61802480	7	10.0 - 6.5	10.0	50
61802490	9	14.0 - 9.0	14.0	50
61802500	11	17.0 - 12.0	17.0	50
61802510	13.5	19.0 - 14.0	19.0	50
61802520	16	21.0 - 16.0	21.0	50
61802530	21	27.0 - 20.0	27.0	25
61802540	29	36.0 - 28.0	36.0	25
61802550	36	45.0 - 37.0	45.0	20
61802570	48	56.0 - 48.0	56.0	10
SILVYN® US-MS-DR for SILVYN® US-AS/US-EDU-AS				
61808168	7			50
61808169	9			50
61808170	11			50
61808180	13.5			50
61808190	16			50
61808200	21			25
61808201	29			25
61808202	36			20
61808204	48			10

Photographs are not to scale and do not represent detailed images of the respective products.

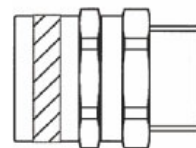
Metal protective cable conduit systems

Protective cable conduit system SILVYN® SSUE

SILVYN® SSUE



SILVYN® LGEF-M



SILVYN® LGES-M

SILVYN® SSUE

Benefits

- High-tensile
- Corrosion-resistant
- Flexible
- For high mechanical stress
- Heat-resistant

Application range

- Offshore applications
- Measuring technology
- Plant engineering
- Outdoors
- Applications with high mechanical stress

Product features

- Stainless steel AISI 316

Approvals



- UNDERGROUND

Design

- Spirally-wound stainless steel protective conduit with roughened profile

Note

- Sizes 10, 12 with double-interlocked Agraff profile

Technical data



Approvals

Railway:
UNDERGROUND,
Link-up



Note

Sizes 10, 12 with double-interlocked Agraff profile



Material

Stainless steel AISI 316



Protection rating

IP 40



Temperature range

-100°C to +400°C

Article number	Article designation	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Suitable for SILVYN® LGEF-M/LGES-M	PU ring (m)
SILVYN® SSUE						
61804600	10	6.8 x 9.0	25	6.8	M 12 x 1,5	25
61804601	12	10.2 x 13.0	30	10.2	M 16 x 1,5/1	25
61804602	16	13.0 x 16.0	40	13.0	M 16 x 1,5/2	25
61804603	20	16.9 x 20.5	45	16.9	M 20 x 1,5/1	25
61804604	25	21.1 x 25.0	55	21.1	M 25 x 1,5	25
61804605	32	28.1 x 32.0	70	28.1	M 32 x 1,5	25
61804612	40	37.6 x 42.5	80	37.6	M 40 x 1,5	10
61804613	50	48.4 x 53.0	90	48.4	M 50 x 1,5	10

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

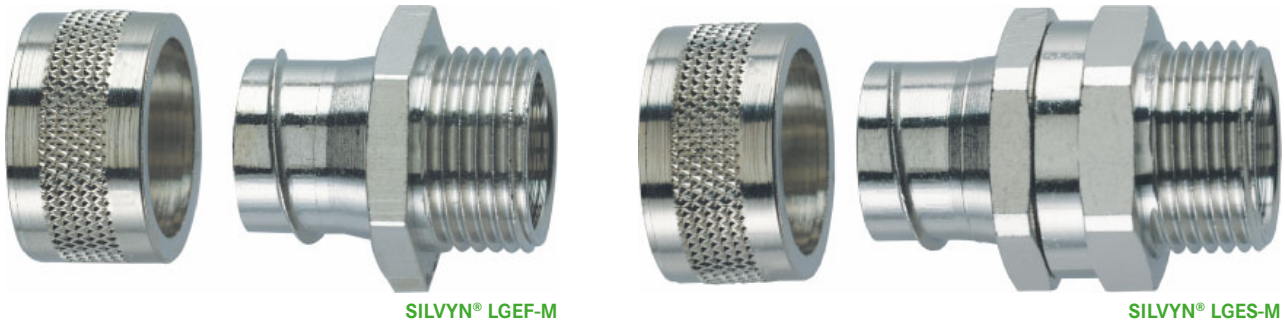
- SILVYN® UI 511 refer to page 822

Accessories

- SILVYN® LGES-M refer to page 821
- SILVYN® LGEF-M refer to page 821

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SILVYN® LGEF-M / SILVYN® LGES-M



Benefits

SILVYN® LGES-M

- Corrosion-resistant
- For rotating applications
- High tensile strength
- Space-saving

SILVYN® LGEF-M

- Corrosion-resistant
- For fixed applications
- High tensile strength
- Space-saving

Application range

- In combination with protective conduit
- Protective cable conduit system SILVYN® SSUE
- Offshore applications
- Outdoors
- Applications with high mechanical stress

Product features

- Stainless steel AISI 316

Approvals



Design

SILVYN® LGES-M

- Metric connection thread
- Hexagonal collar with torsion element
- Cap nut

SILVYN® LGEF-M

- Metric connection thread
- Hexagonal collar
- Cap nut

Suitable conduits

- SILVYN® SSUE Page 820

Technical data



Material
Stainless steel AISI 316



Protection rating
IP 40



Temperature range
-100°C to +400°C

Article number	Article designation	Overall length, C (mm)	Thread length, D (mm)	SW (mm)	Suitable for SILVYN® SSUE	Pieces / PU
SILVYN® LGES-M						
55503210	12 x 1,5	30,2	7,0	14,0	10	1
55503211	16 x 1,5/1	35,5	10,0	19,0	12	1
55503212	16 x 1,5/2	35,5	10,0	19,0	16	1
55503213	20 x 1,5/1	38,5	10,0	24,0	20	1
55503214	25 x 1,5	41,5	12,0	29,0	25	1
55503215	32 x 1,5	49,0	13,0	38,0	32	1
SILVYN® LGEF-M						
55503200	12 x 1,5	21,0	7,0	14,0	10	1
55503201	16 x 1,5/1	26,0	10,0	19,0	12	1
55503202	16 x 1,5/2	27,5	10,0	19,0	16	1
55503203	20 x 1,5/1	28,2	10,0	24,0	20	1
55503204	25 x 1,5	33,8	12,0	29,0	25	1
55503205	32 x 1,5	38,0	13,0	38,0	32	1
55503206	40 x 1,5	39,0	14,0	48,0	40	1
55503207	50 x 1,5	42,0	15,0	58,0	50	1

Photographs are not to scale and do not represent detailed images of the respective products.

Metal protective cable conduit systems

SILVYN® UI 511 stainless steel

SILVYN® UI 511



Benefits

- High-tensile
- Corrosion-resistant
- Suitable for outdoor use and direct burial
- For high mechanical stress
- Heat-resistant

Application range

- Offshore applications
- Measuring technology
- Plant engineering
- Steel industry
- Applications with the highest mechanical stresses

Product features

- Stainless steel AISI 304

Approvals



Design

- Spirally-wound stainless steel protective conduit with interlocked profile (AGRAFF)



Info

- Double-interlocked Agraff profile
- For the most demanding mechanical requirements

Technical data



Note

Size 2" not stocked!



Material

Stainless steel AISI 304
DW no. 1.4301



Protection rating

IP40



Temperature range

-100 °C to +600 °C

Article number	Article designation	Static/dynamic bending radius in mm	Outer Ø (mm)	min. internal Ø	Internal Ø	PU (m)
SILVYN® UI 511						
61799815	5/16"	50.0/60.0	12.5	9.5	9.5	30
61799816	3/8"	65.0/80.0	16.5	13.0	13.0	30
61799817	1/2"	75.0/100.0	20.3	17.0	17.0	30
61799818	3/4"	90.0/125.0	25.3	22.0	22.0	30
61799819	1."	120.0/160.0	31.0	25.8	25.8	30
61799820	1 1/4"	175.0/220.0	39.5	34.2	34.2	30
61799822	2."	285.0/340.0	58.0	52.0	52.0	15

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- Protective cable conduit system SILVYN® SSUE refer to page 820

Accessories

- SILVYN® UI 511 -G refer to page 823
- SILVYN® UI 511 -EG refer to page 823

SILVYN® UI 511 -EG / SILVYN® UI 511 -G



SILVYN® UI 511 -EG

SILVYN® UI 511 -G

Benefits

SILVYN® UI 511 -G

- High tensile strength
- For high mechanical stress
- High chemical-resistance

SILVYN® UI 511 -EG

- Corrosion-resistant
- High tensile strength
- For high mechanical stress
- High chemical-resistance

Application range

- In combination with protective conduit
- SILVYN® UI 511
- Offshore applications
- Outdoors
- Steel industry

Product features

SILVYN® UI 511 -G

- Nickel-plated brass

SILVYN® UI 511 -EG

- Stainless steel AISI 303

Approvals



Note

- Upon request
- 45° elbow version SILVYN® UI 511-HW
- 90° elbow version SILVYN® UI 511-W
- With PG thread

Design

- Metric connection thread
- Hexagonal collar
- Threaded sleeve
- Cap nut

Suitable conduits

- SILVYN® UI 511 Page 822

Technical data



Material

UI511-G: nickel-plated brass
 UI511-EG: AISI 303, DW no. 1.4305
 O-ring: NBR



Temperature range

-45°C to +105°C

Article number	Article designation	min. internal Ø	Overall length, C (mm)	Thread length, D (mm)	Internal Ø	SW (mm)	Suitable for SILVYN® UI 511	Pieces / PU
SILVYN® UI 511-G								
61797800	M 16 x 1,5/1	6.8	35.0	12.0	6.8	26.0	5/16"	1
61797802	M 16 x 1,5/2	9.8	35.0	12.0	9.8	26.0	3/8"	1
61797808	M 20 x 1,5/3	13.9	37.0	13.0	13.9	29.0	1/2"	1
61797810	M 25 x 1,5	18.5	40.0	15.0	18.5	35.0	3/4"	1
61797812	M 32 x 1,5	22.8	46.0	15.0	22.8	45.0	1."	1
61797814	M 40 x 1,5	30.8	52.0	16.0	30.8	54.0	1 1/4"	1
61797816	M 63 x 1,5	47.8	66.0	20.0	47.8	77.0	2."	1
SILVYN® UI 511-EG								
61797918	M 16 x 1,5/1	6.8	35.0	12.0	6.8	26.0	5/16"	1
61797920	M 16 x 1,5/2	9.8	35.0	12.0	9.8	26.0	3/8"	1
61797926	M 20 x 1,5/3	13.9	37.0	13.0	13.9	29.0	1/2"	1
61797928	M 25 x 1,5	18.5	40.0	15.0	18.5	35.0	3/4"	1
61797930	M 32 x 1,5	22.8	46.0	15.0	22.8	45.0	1."	1
61797932	M 40 x 1,5	30.8	52.0	16.0	30.8	54.0	1 1/4"	1

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

SILVYN® UI 511 -G

- SILVYN® UI 511 -EG refer to page 823

SILVYN® CNP / SILVYN® CNP conduit gland



SILVYN® CNP



SILVYN® CNP conduit gland

■ Benefits

SILVYN® CNP

- Protection against mechanical stress
- Protects against liquids
- Bendable
- Highly oil and acid-resistant
- UL/CSA-approved

SILVYN® CNP conduit gland

- Corrosion-resistant
- High tensile strength
- For high mechanical stress
- High chemical-resistance
- UL/CSA-approved

■ Application range

SILVYN® CNP

- Mechanical engineering
- Robot-building
- Vending machine construction
- Exporters

SILVYN® CNP conduit gland

- In combination with protective conduit
- Protective cable conduit system SILVYN® CNP
- Mechanical engineering
- Exporters
- Vending machine construction

■ Approvals



■ Design

SILVYN® CNP

- PVC inner conduit
- Nylon braiding
- Plastic outer sheath

SILVYN® CNP conduit gland

- The basic body is made of cast steel with a galvanised surface. The inner sleeve is made of polyamide and accommodates the conduit. A special profile on the inner sleeve is pressed into the conduit by the union nut
- Including O-ring and counter nut

■ Note

SILVYN® CNP conduit gland

- 90° elbow version SILVYN® CNP-W (on request)

■ Technical data



Colour delivered
SILVYN® CNP
Orange



Material
SILVYN® CNP
PVC compound with nylon fabric
SILVYN® CNP conduit gland
Body: cast steel with zinc-plated surface
Inner sleeve: PA



Protection rating
SILVYN® CNP conduit gland
IP 67



Temperature range
SILVYN® CNP
-20°C to +60°C
CSA: -18°C to +75°C
Short-term: up to +80°C

Article number	Article designation	Internal Ø x external Ø (mm)	Dynamic bending radius (mm)	Static/dynamic bending radius in mm	min. internal Ø	For conduit with outer Ø (mm)	Overall length, C (mm)	Internal Ø	SW (mm)	Suitable for SILVYN® CNP-G	PU ring (m)
SILVYN® CNP											
61712930	3/8"	21.0 x 29.5	100	70.0/100.0	21.0	29.5		21.0		1/2"	76
61722330	1/2"	35.1 x 46.0	125	90.0/125.0	35.1	46.0		35.1		1/2"	60
61722340	3/4"	40.7 x 52.4	160	115.0/160.0	40.7	52.4		40.7		3/4"	53
61712460	1."	12.6 x 19.4	200	170.0/200.0	12.6	19.4		12.6		1."	30
61712910	1 1/4"	16.1 x 23.4	240	200.0/240.0	16.1	23.4		16.1		1 1/4"	15
61722270	1 1/2"	26.5 x 36.3	290	230.0/290.0	26.5	36.3		26.5		1 1/2"	15
SILVYN® CNP-G											
55500400	1/2"						55.0		27.0	3/8"	1
55500410	1/2"						66.0		32.0	1/2"	1
55500420	3/4"						66.0		39.0	3/4"	1
55500430	1."						73.0		45.0	1."	1
55500440	1 1/4"						87.0		59.0	1 1/4"	1
55500450	1 1/2"						87.0		67.0	1 1/2"	1

Photographs are not to scale and do not represent detailed images of the respective products.

■ Accessories

SILVYN® CNP

- SILVYN® CNP conduit gland refer to page 824

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

SILVYN® HIPROJACKET CR / SILVYN® HIPROSILTAPES / SILVYN® HIPROJACKET

Info
● **NEW!!!**



SILVYN® HIPROJACKET CR

Design

SILVYN® HIPROJACKET

- Glass fibre inner conduit
- Iron oxide silicone coat

Note

SILVYN® HIPROJACKET

- Upon request
- SILVYN® HIPROJACKET up to NW 127
- SILVYN® HIPROSILTAPES heat-resistant insulation tape to increase the protection rating

Suitable conduits

SILVYN® HIPROSILTAPES

- SILVYN® HIPROJACKET Page 825

SILVYN® HIPROJACKET CR

- SILVYN® HIPROJACKET Page 825

Suitable tools

SILVYN® HIPROSILTAPES

- 501 multipurpose shears refer to page [P 1242]
- Multipurpose shears A and B refer to page 902

SILVYN® HIPROJACKET

Technical data



Approvals
SILVYN® HIPROJACKET
NFF 16-101 I2 (French railway system)



Colour delivered
SILVYN® HIPROJACKET
Conduit: red
SILVYN® HIPROSILTAPES
red



Material
SILVYN® HIPROJACKET
Conduit: glass fibre with iron oxide silicone coat LOI 42.5
Clamp ring: nickle-plated brass
SILVYN® HIPROSILTAPES
Silicone-rubber compound, self-vulcanising, halogen-free



Protection rating
SILVYN® HIPROJACKET
In combination with HIPROJACKET CR and AMG-M conduit gland IP54
IP67 if HIPROSILTAPES is also used



Temperature range
SILVYN® HIPROJACKET
-40 °C to +260 °C permanent temp.
+1090 °C for approx. 20 minutes
+1640 °C for approx. 15-30 seconds
SILVYN® HIPROSILTAPES
-55 °C to +260 °C

Benefits

SILVYN® HIPROJACKET

- Heat-resistant
- Flexible
- Temporarily reduces the temperature in the conduit by up to 30 %

SILVYN® HIPROSILTAPES

- The protection rating increases to IP67 if HIPROSILTAPES is also used
- Oil-resistant
- Heat-resistant

Application range

SILVYN® HIPROJACKET

- Steel industry
- Furnace construction
- Plastics industry
- Mechanical engineering
- Used in areas where cables and wires are exposed to extreme heat

Approvals



SILVYN® HIPROJACKET

- NFF 16-101 I2 F0, LOI 42,5

Article number	Article designation	Anamet designation	Internal Ø x external Ø (mm)	Nominal size	Inner Ø (mm)	For conduit with outer Ø (mm)	PU ring (m)
SILVYN® HIPROJACKET							
52021385	SILVYN® HIPROJACKET NW 6	336.006.1	6.0 x 15.0		6.0		15
61713003	SILVYN® HIPROJACKET NW 10	336.010.1	10.0 x 15.0		10.0		15
61713005	SILVYN® HIPROJACKET NW 13	336.013.1	13.0 x 18.0		13.0		15
61713007	SILVYN® HIPROJACKET NW 16	336.016.1	16.0 x 22.0		16.0		15
61713010	SILVYN® HIPROJACKET NW 19	336.019.1	19.0 x 25.0		19.0		15
61713011	SILVYN® HIPROJACKET NW 22	336.022.1	22.0 x 28.0		22.0		15
61713000	SILVYN® HIPROJACKET NW 25	336.025.1	25.0 x 31.0		25.0		15
61713014	SILVYN® HIPROJACKET NW 29	336.029.1	29.0 x 35.0		29.0		15
61713015	SILVYN® HIPROJACKET NW 32	336.032.1	32.0 x 38.0		32.0		15
61713016	SILVYN® HIPROJACKET NW 35	336.035.1	35.0 x 41.0		35.0		15
61713017	SILVYN® HIPROJACKET NW 38	336.038.1	38.0 x 44.0		38.0		15
61713018	SILVYN® HIPROJACKET NW 41	336.041.1	41.0 x 47.0		41.0		15
61713019	SILVYN® HIPROJACKET NW 51	336.051.1	51.0 x 57.0		51.0		15
61713025	SILVYN® HIPROJACKET NW 64	336.064.1	64.0 x 70.0		64.0		15
61713027	SILVYN® HIPROJACKET NW 70	336.070.1	70.0 x 76.0		70.0		15
61713040	SILVYN® HIPROSILTAPES 25	red		1			11
SILVYN® HIPROJACKET CR clamping ring							
61713030	SILVYN® HIPROJACKET CR	817.512.0		10/13			50
61713031	SILVYN® HIPROJACKET CR	817.516.0		13/16		22.0	50
61713032	SILVYN® HIPROJACKET CR	817.520.0		19/22		28.0	25
61713033	SILVYN® HIPROJACKET CR	817.526.0		25		31.0	10
61713034	SILVYN® HIPROJACKET CR	817.535.0		32/35		41.0	5
61713035	SILVYN® HIPROJACKET CR	817.540.0		38		44.0	5
61713036	SILVYN® HIPROJACKET CR	817.550.0		51		57.0	4

Photographs are not to scale and do not represent detailed images of the respective products.
Sizes 1 1/2" and 2" without copper conductors

Accessories

SILVYN® HIPROJACKET

- SILVYN® HIPROSILTAPES refer to page 825
- SILVYN® HIPROJACKET CR refer to page 825
- SILVYN® AMG-M refer to page 829
- SILVYN® AMHW-M refer to page 829
- SILVYN® AMW-M refer to page 829
- SILVYN® AMG refer to page 830

SILVYN® HTDL



SILVYN® HTDL/EF/OR/HCX/HFX/HIPROJACKET



SILVYN® ADG/AMG-M
IP 67



SILVYN® ADHW/AMHW-M
IP 67



SILVYN® ADW/AMW-M
IP 67



SILVYN® FDG
IP 67



SILVYN® FDHW
IP 67



SILVYN® FDW
IP 67



SILVYN® TB-E

SILVYN® HTDL

Benefits

- Protects against liquids
- High-tensile
- Robust
- High crush-resistance
- UL/CSA-approved

Application range

- Mechanical engineering
- Plant engineering
- Transformer construction
- Railway applications
- Exporters

Approvals



- NEC 501-4B

Design

- Spirally-wound heavy metal protective conduit with roughened profile
- Plastic outer sheath

Note

- With continuous copper conductor for earthing in the case of the nominal sizes 3/8" up to and including 1 1/4". Heavy metal core insert made of galvanised steel strip with special heat and sunlight-resistant plastic sheath. In the ex-range, usable according to NEC 501-4B.

Technical data



Colour delivered
Black



Material
Metal with PVC-compound sheath



Temperature range
-40°C to +105°C
Short-term: up to +120°C

Article number	Article designation	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	PU ring (m)
SILVYN® HTDL					
61814190	3/8"	12.6 x 17.8	85	12.6	60
61814200	1/2"	16.1 x 21.1	110	16.1	60
61814210	3/4"	21.1 x 26.4	140	21.1	45
61814220	1."	26.8 x 33.1	170	26.8	30
61814230	1 1/4"	35.4 x 41.8	215	35.4	15
61814240	1 1/2 ***	40.3 x 47.8	250	40.3	15
61814250	2. ***	51.6 x 59.9	300	51.6	15

Sizes 1 1/2" and 2" without copper conductors
Photographs are not to scale and do not represent detailed images of the respective products.

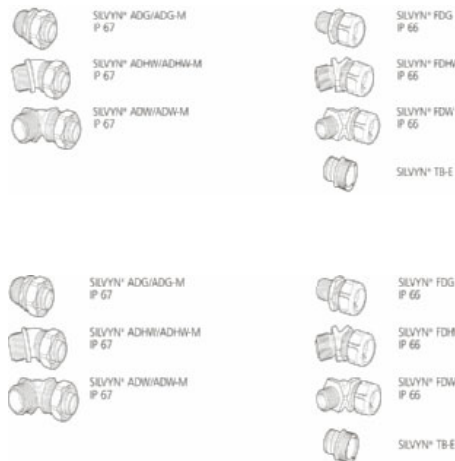
Accessories

- SILVYN® AMG-M refer to page 829
- SILVYN® AMHW-M refer to page 829
- SILVYN® AMW-M refer to page 829
- SILVYN® AMG refer to page 830
- SILVYN® FDG/FDHW/FDW refer to page 831
- SILVYN® TB-E refer to page 833

SILVYN® EF



SILVYN® OR



Benefits

SILVYN® EF

- Protects against liquids
- High-tensile
- Robust
- High crush-resistance
- Extra flexible

SILVYN® OR

- Protects against liquids
- High-tensile
- Robust
- High crush-resistance
- Highly oil and acid-resistant

Application range

- Mechanical engineering
- Plant engineering
- Transformer construction
- Railway applications
- Paper industry

Approvals



Design

- Spirally-wound heavy metal protective conduit with roughened profile
- Plastic outer sheath

Note

SILVYN® EF

- PU = 10 m (on request)
- Black colour is available upon request

SILVYN® OR

- PU = 10 m (on request)

Technical data

RAL	Colour delivered SILVYN® EF Grey SILVYN® OR Black
	Material SILVYN® EF Galvanized steel with PVC sheath SILVYN® OR Galvanized steel with special PVC sheath
	Temperature range SILVYN® EF -25 °C to +70 °C Short-term: up to +90 °C SILVYN® OR -20 °C to +100 °C Short-term: up to +120 °C

Article number	Article designation	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	PU ring (m)
SILVYN® EF					
61722240	5/16"	10.1 x 14.4	65	10.1	50
61712470	3/8"	12.6 x 17.8	85	12.6	75
61712480	1/2"	16.0 x 21.1	110	16.0	60
61712490	3/4"	21.0 x 26.4	140	21.0	50
61712500	1."	26.5 x 33.1	170	26.5	30
61712510	1 1/4"	35.1 x 41.8	215	35.1	30
61712520	1 1/2"	40.3 x 47.8	250	40.3	15
61712530	2."	51.6 x 59.9	300	51.6	15
SILVYN® OR					
61712840	3/8"	12.6 x 17.8	85	12.6	75
61712850	1/2"	16.0 x 21.1	110	16.0	60
61712860	3/4"	21.0 x 26.4	140	21.0	50
61712870	1."	26.5 x 33.0	170	26.5	30
61712880	1 1/4"	35.1 x 41.8	215	35.1	30
61712890	1 1/2"	40.3 x 47.8	250	40.3	15
61712900	2."	51.6 x 59.9	300	51.6	15

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

SILVYN® EF

- Protective cable conduit system SILVYN® LTP refer to page 838
- SILVYN® HTDL refer to page 826
- SILVYN® OR refer to page 827

SILVYN® OR

- SILVYN® HCX refer to page 828
- SILVYN® HFX refer to page 828

Accessories

- SILVYN® AMG-M refer to page 829
- SILVYN® AMHW-M refer to page 829
- SILVYN® AMW-M refer to page 829
- SILVYN® AMG refer to page 830
- SILVYN® FDG/FDHW/FDW refer to page 831
- SILVYN® TB-E refer to page 833

Impermeable protective cable conduit systems

Impermeable conduits

SILVYN® HCX



SILVYN® HFX



■ **Benefits**

SILVYN® HCX

- Protects against liquids
- High-tensile
- Robust
- High crush-resistance
- High temperature resistance

SILVYN® HFX

- High crush-resistance
- Robust
- Abrasion protection
- Protection against chemicals
- Protects against liquids

■ **Application range**

- Mechanical engineering
- Paper industry
- Measurement and control technology
- Railway applications
- Outdoors

■ **Product features**

- UV-resistant

■ **Approvals**



SILVYN® HFX

- SNCF

■ **Design**

SILVYN® HCX

- Spirally-wound heavy metal protective conduit with roughened profile
- Heat-stabilised plastic outer sheath

SILVYN® HFX

- Spirally-wound heavy metal protective conduit with roughened profile
- PUR outer sheath

■ **Note**

- PU = 10 m (on request)

■ **Technical data**



Approvals

SILVYN® HCX
Railway: SNCF



Upon request

Longer lengths on drums, 10 m coils are available upon request



Colour delivered

Black



Material

SILVYN® HCX
Metal with thermoplastic elastomer sheath
SILVYN® HFX
Metal with PUR sheath



Temperature range

SILVYN® HCX
-55 °C to +145 °C
Short-term: up to +160 °C
SILVYN® HFX
-45 °C to +105 °C
Short-term up to +125 °C

Article number	Article designation	Internal Ø x external Ø (mm)	Dynamic bending radius (mm)	Inner Ø (mm)	PU ring (m)
SILVYN® HCX					
61744228	3/8"	12.6 x 17.8	85	12.6	30
61744229	1/2"	16.0 x 21.1	110	16.0	30
61744230	3/4"	21.0 x 26.4	140	21.0	30
61744231	1."	26.5 x 33.1	170	26.5	30
61744240	1 1/4"	35.1 x 41.8	215	35.1	15
61744242	1 1/2"	40.3 x 47.8	250	40.3	15
SILVYN® HFX					
64400200	5/16"	10.1 x 14.4	65	10.1	30
64400210	3/8"	12.6 x 17.8	85	12.6	30
64400220	1/2"	16.0 x 21.1	110	16.0	30
64400230	3/4"	21.0 x 26.4	140	21.0	30
64400240	1."	26.5 x 33.1	170	26.5	30
64400250	1 1/4"	35.1 x 41.8	215	35.1	15

Photographs are not to scale and do not represent detailed images of the respective products.

■ **Accessories**

- SILVYN® AMG-M refer to page 829
- SILVYN® AMHW-M refer to page 829
- SILVYN® AMW-M refer to page 829
- SILVYN® AMG refer to page 830
- SILVYN® FDG/FDHW/FDW refer to page 831
- SILVYN® TB-E refer to page 833

SILVYN® AMW-M / SILVYN® AMHW-M / SILVYN® AMG-M



Benefits

SILVYN® AMG-M

- High tensile strength
- For high mechanical stress
- Enhanced sealing
- Easy to disassemble

SILVYN® AMHW-M

- 45° elbow enables optimal assembly
- High tensile strength
- For high mechanical stress
- Enhanced sealing
- Easy to disassemble

SILVYN® AMW-M

- 90° elbow enabled best assembling
- High tensile strength
- For high mechanical stress
- Enhanced sealing
- Easy to disassemble

Application range

SILVYN® AMG-M

- In combination with protective conduit
- SILVYN® HTDL/EF/OR/HCX/HFX/FG HIPROJACKET
- Mechanical engineering
- Railway applications
- Outdoors

SILVYN® AMHW-M

- In combination with protective conduit
- SILVYN® HTDL/EF/OR/HCX/HFX/FG HIPROJACKET
- Mechanical engineering
- Railway applications
- For applications with limited space

SILVYN® AMW-M

- In combination with protective conduit
- SILVYN® HTDL/EF/OR/HCX/HFX/FG HIPROJACKET
- Mechanical engineering
- Railway applications
- For applications with limited space

Approvals



SILVYN® AMG-M

- UL
- CSA

SILVYN® AMW-M

- UL
- CSA

Design

SILVYN® AMG-M

- Metric connection thread
- Hexagonal collar
- Threaded sleeve
- Cap nut

SILVYN® AMHW-M

- Metric connection thread
- 45° elbow, hexagonal collar
- Threaded sleeve
- Cap nut

SILVYN® AMW-M

- Metric connection thread
- 90° hexagonal collar
- Threaded sleeve
- Cap nut

Technical data



Material
Body: nickel-plated brass
Sealing: polyamide
O-ring: NBR



Protection rating
IP 67



Temperature range
-45°C to +105°C

Note

SILVYN® AMG-M

- Version with a maximum temperature of +145°C is available upon request
- SILVYN® AMG-M 16/1 x 1.5 without UL/CSA approval

SILVYN® AMHW-M

- Version with a maximum temperature of +145°C is available upon request

SILVYN® AMW-M

- Version with a maximum temperature of +145°C is available upon request

Suitable conduits

- SILVYN® HTDL Page 826
- SILVYN® HIPROJACKET Page 825
- SILVYN® OR Page 827
- SILVYN® HCX Page 828
- SILVYN® HFX Page 828

Article number	Article designation	Anamet designation	SW (mm)	Suitable for SILVYN® EF/OR/HTDL/HCX/HFX	Pieces / PU
SILVYN® AMG-M straight					
55503240	16 / 1 x 1,5	812.016.0	26.0	5 / 16"	50
55503241	16 / 2 x 1,5	812.016.1	26.0	3 / 8"	50
55503242	20 x 1,5	812.020.1	29.0	1 / 2"	50
55503243	25 x 1,5	812.025.1	35.0	3 / 4"	25
55503244	32 x 1,5	812.032.1	45.0	1."	10
55503245	40 x 1,5	812.040.1	54.0	1 1 / 4"	5
55503246	50 x 1,5	812.050.1	62.0	1 1 / 2"	5
55503247	63 x 1,5	812.063.1	77.0	2."	4
SILVYN® AMHW-M 45°					
55503250	16 x 1,5	812.416.1	26.0	3 / 8"	50
55503251	20 x 1,5	812.420.1	29.0	1 / 2"	50
55503252	25 x 1,5	812.425.1	35.0	3 / 4"	25
55503253	32 x 1,5	812.432.1	45.0	1."	10
55503254	40 x 1,5	812.440.1	54.0	1 1 / 4"	5
55503255	50 x 1,5	812.450.1	62.0	1 1 / 2"	5
55503256	63 x 1,5	812.463.1	77.0	2."	4
SILVYN® AMW-M 90°					
55503260	16 x 1,5	812.916.1	26.0	3 / 8"	50
55503261	20 x 1,5	812.920.1	29.0	1 / 2"	50
55503262	25 x 1,5	812.925.1	35.0	3 / 4"	25
55503263	32 x 1,5	812.932.1	45.0	1."	10
55503264	40 x 1,5	812.940.1	54.0	1 1 / 4"	5
55503265	50 x 1,5	812.950.1	62.0	1 1 / 2"	5
55503266	1."	812.963.1	77.0	2."	4

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

SILVYN® AMG-M

- SILVYN® HIPROJACKET CR refer to page 825

SILVYN® AMG



SILVYN® AMG

Benefits

- High tensile strength
- For high mechanical stress
- Enhanced sealing
- Easy to disassemble
- 45° and 90° elbow enables optimal assembly

Application range

- In combination with protective conduit
- SILVYN® HTDL/EF/OR/HCX/HFX/FG HIPROJACKET
- Mechanical engineering
- Railway applications
- Outdoors

Approvals



Design

- PG connection thread
- Hexagonal collar, straight/45° elbow/90° elbow
- Threaded sleeve
- Cap nut

Note

- Version with a maximum temperature of +145°C is available upon request
- SILVYN® AMG 7/ 9/1 / 11/1 without UL/ CSA approval

Suitable conduits

- SILVYN® HTDL Page 826
- SILVYN® HIPROJACKET Page 825
- SILVYN® OR Page 827
- SILVYN® HCX Page 828
- SILVYN® HFX Page 828

Technical data



Material

Body: nickel-plated brass
Sealing: polyamide
O-ring: NBR



Protection rating

IP 67



Temperature range

-45°C to +105°C

Article number	Article designation	Anamet designation	Wrench size (mm)	Suitable for SILVYN® EF/OR/HTDL/HCX/HFX	Pieces / PU
SILVYN® AMG straight					
55503305	AMG 7	810.007.1	22	1/4"	50
55503308	AMG 11 / 1	810.012.1	26	5/16"	50
55503309	AMG 11 / 2	810.011.1	26	3/8"	50
55503310	AMG 13,5	810.013.1	26	3/8"	50
55503311	AMG 16	810.016.1	29	1/2"	50
55503312	AMG 21	810.021.1	35	3/4"	25
55503313	AMG 29	810.029.1	45	1"	10
55503314	AMG 36	810.036.1	54	1 1/4"	5
55503315	AMG 42	810.042.1	63	1 1/2"	5
55503316	AMG 48	810.048.1	77	2"	4
55503306	AMG 9 / 1	810.009.1	26	5/16"	50
55503307	AMG 9 / 2	810.010.1	26	3/8"	50
SILVYN® AMHW 45°					
55503317	AMHW 11 / 1	810.412.1	26	5/16"	50
55503318	AMHW 11 / 2	810.411.1	26	3/8"	50
55503319	AMHW 13,5	810.413.1	26	3/8"	50
55503320	AMHW 16	810.416.1	29	1/2"	50
55503321	AMHW 21	810.421.1	35	3/4"	25
55503322	AMHW 29	910.429.1	45	1"	10
55503323	AMHW 36	810.436.1	54	1 1/4"	5
55503324	AMHW 42	810.442.1	63	1 1/2"	5
55503325	AMHW 48	810.448.1	77	2"	4
SILVYN® AMW 90°					
55503326	AMW 11 / 1	810.912.1	26	5/16"	50
55503327	AMW 11 / 2	810.911.1	26	3/8"	50
55503328	AMW 13,5	810.913.1	26	3/8"	50
55503329	AMW 16	810.916.1	29	1/2"	50
55503330	AMW 21	810.921.1	35	3/4"	25
55503331	AMW 29	810.929.1	45	1"	10
55503332	AMW 36	910.936.1	54	1 1/4"	5
55503333	AMW 42	810.942.1	63	1 1/2"	5
55503334	AMW 48	810.948.1	77	2"	4

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SILVYN® FDG/FDHW/FDW refer to page 831

SILVYN® FDG/FDHW/FDW



SILVYN® FDG/FDHW/FDW

Benefits

- High tensile strength
- For high mechanical stress
- Enhanced sealing
- Easy to disassemble
- 45° elbow enables optimal assembly

Application range

- In combination with protective conduit
- SILVYN® HTDL/EF/OR/HCX/HFX/FG HIPROJACKET
- Mechanical engineering
- Railway applications
- Outdoors

Approvals



Design

- PG/NPT connection thread
- Hexagonal collar
- Threaded sleeve
- Cap nut

Note

- Version with a maximum temperature of +145°C is available upon request

Suitable conduits

- SILVYN® HTDL Page 826
- SILVYN® HIPROJACKET Page 825
- SILVYN® OR Page 827
- SILVYN® HCX Page 828
- SILVYN® HFX Page 828

Technical data

	Material Gland body: cast steel with corrosion-resistance, galvanised and chrome-plated surface. Sealing ring: PA Inner sleeve: steel
	Protection rating IP 67
	Temperature range -45°C to +105°C

Article number	Article designation	Typ T & B	min. internal Ø	Internal Ø	SW (mm)	Suitable for SILVYN® EF/OR/HTDL/HCX/HFX	Pieces / PU
SILVYN® FDG							
52004329	9	7360	10.0	10.0	23.0	5/16"	1
52004330	11	7361	11.0	11.0	24.0	3/8"	1
52004360	13,5	7362	11.0	11.0	24.0	3/8"	1
52004390	16	7363	14.5	14.5	30.0	1/2"	1
52004420	21	7364	20.0	20.0	36.0	3/4"	1
52004450	29	7365	25.0	25.0	46.0	1"	1
52004480	36	7366	33.5	33.5	55.0	1 1/4"	1
52004510	42	7367	38.5	38.5	60.0	1 1/2"	1
52004540	48	7368	49.5	49.5	80.0	2"	1
SILVYN® FDG NPT thread							
52021580	1/2"	5331	11.0	11.0	26.0	3/8"	1
52021560	1/2"	5332	14.5	14.5	32.0	1/2"	1
52021570	3/4"	5333	20.0	20.0	41.0	3/4"	1
52021590	1"	5334	25.0	25.0	46.0	1"	1
52021600	1 1/4"	5335	33.5	33.5	55.0	1 1/4"	1
52021610	1 1/2"	5336	38.5	38.5	65.0	1 1/2"	1
52021611	2"	5337	49.5	49.5	80.0	2"	1
SILVYN® FDHW 45° angled							
52004560	11	7341	11.0	11.0	26.0	3/8"	1
52004590	13,5	7342	11.0	11.0	26.0	3/8"	1
52004620	16	7343	14.5	14.5	32.0	1/2"	1
52004650	21	7344	20.0	20.0	36.0	3/4"	1
52004680	29	7345	25.0	25.0	46.0	1"	1
52004710	36	7346	33.5	33.5	55.0	1 1/4"	1
52004770	48	7348	49.5	49.5	75.0	2"	1
SILVYN® FDHW 45° NPT thread							
52023290	1/2"	5341	11.0	11.0	28.0	3/8"	1
52021620	1/2"	5342	14.5	14.5	30.0	1/2"	1
52021630	3/4"	5343	20.0	20.0	41.0	3/4"	1
52021640	1"	5344	25.0	25.0	46.0	1"	1
52021650	1 1/4"	5345	33.5	33.5	55.0	1 1/4"	1
52021660	1 1/2"	5346	38.5	38.5	56.0	1 1/2"	1
52021661	2"	5347	49.5	49.5	75.0	2"	1
SILVYN® FDW 90° angled							
52004790	11	7351	12.0	12.0	25.0	3/8"	1
52004820	13,5	7352	14.5	14.5	25.0	3/8"	1
52004850	16	7353	14.5	14.5	30.0	1/2"	1
52004880	21	7354	20.0	20.0	36.0	3/4"	1
52004910	29	7355	25.0	25.0	46.0	1"	1
52004940	36	7356	33.0	33.0	55.0	1 1/4"	1
52004970	42	7357	39.0	39.0	60.0	1 1/2"	1
52005000	48	7358	50.0	50.0	75.0	2"	1
SILVYN® FDW 90° NPT thread							
52021670	1/2"	5351	11.0	11.0	28.0	1	1
52021680	1/2"	5352	14.5	14.5	32.0	1	1
52023440	3/4"	5353	20.0	20.0	36.0	1	1
52021690	1"	5354	25.0	25.0	46.0	1	1
52023830	1 1/4"	55	33.5	33.5	55.0	1	1
52021710	1 1/2"	5356	38.5	38.5	60.0	1	1
52021711	2"	5357	49.5	49.5	75.0	1	1

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SILVYN® AMG refer to page 830

New

SILVYN® FG

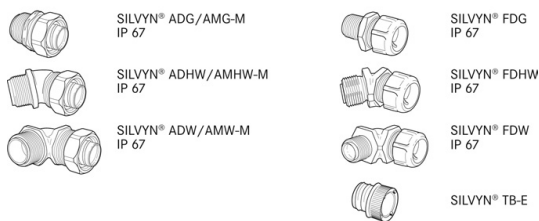


Info

- **NEW!!!**
- Specifically for the food and drinks industry

SILVYN® FG

SILVYN® HTDL/EF/OR/HCX/HFX/HIPROJACKET



Benefits

- Protects against liquids
- High-tensile
- Smooth, white surface makes it easy to clean
- High crush-resistance
- FDA-approved outer sheath

Application range

- Mechanical engineering
- Plant engineering
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- Pharmaceutical industry
- Food packaging machinery

Product features

- Flexible
- Crush-resistant
- Impact-resistant
- High-tensile

Approvals



- Approved according to FDA CFR 21 and NSF 51 (standard for the USA)

Design

- Spirally-wound heavy metal protective conduit with roughened profile
- Special, FDA-approved plastic sheath

Suitable tools

- SILVYN® ANAC-WZ refer to page 840

Technical data

RAL	Colour delivered White
	Material Electro-galvanised, strip-wound inner hoop-steel hose with special plastic sheath
	Temperature range -20°C to +60°C Short-term: +80 °C

Article number	Anamet designation	Internal Ø x external Ø (mm)	Nominal size	Bending radius (mm)	Dynamic bending radius (mm)	Inner Ø (mm)	PU ring (m)
SILVYN FG							
55503279	341.012.01	12,6 x 17,8	3/8"	60	85	12,6	30
55503280	341.016.01	16,0 x 21,1	1/2"	75	110	16,0	30
55503281	341.020.1	21,0 x 26,4	3/4"	90	140	21,0	30
55503282	341.026.1	26,5 x 33,1	1"	120	170	26,5	30
55503283	341.035.1	35,1 x 41,8	1 1/4"	135	215	35,1	15
55503284	341.040.1	40,3 x 47,8	1 1/2"	165	250	40,3	15
55503285	341.050.1	51,6 x 59,9	2"	210	300	51,6	15

Sizes 1 1/2" and 2" without copper conductors
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- TY-RAP® Detektierbarer Kabelbinder refer to page 956
- SILVYN® AMG-M refer to page 829
- SILVYN® AMHW-M refer to page 829
- SILVYN® AMW-M refer to page 829
- SILVYN® AMG refer to page 830
- SILVYN® FDG/FDHW/FDW refer to page 831
- SILVYN® TB-E refer to page 833

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

New

SILVYN® FG AMG-M



Info

- **NEW!!!**
- **Specifically for the food and drinks industry**

Benefits

- High tensile strength
- For high mechanical stress
- Enhanced sealing
- Easy to disassemble
- Special sealing element for food and beverage industry, tested in acc. to FDA CFR 21 and NSF 51 (USA)

Application range

- In combination with protective conduit
- SILVYN® HTDL/EF/OR/HCX/HFX/FG HIPROJACKET
- Mechanical engineering
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- Outdoors

Approvals



Design

- Metric connection thread
- Hexagonal collar
- Threaded sleeve
- Cap nut
- Special seal element

Suitable conduits

- SILVYN® HTDL Page 826
- SILVYN® HIPROJACKET Page 825
- SILVYN® OR Page 827
- SILVYN® HCX Page 828
- SILVYN® HFX Page 828
- SILVYN® FG Page 832

Technical data

Material
 Body: AISI 316 stainless steel
 Inner seal: polyamide 6
 O-ring and outer seal: FDA-approved TPE

Protection rating
 IP 69K according to DIN 40050 T.9

Temperature range
 -45°C to +105°C

Article number	Anamet designation	Nominal size	For conduit with outer Ø (mm)	Length	Internal Ø	SW (mm)	Pieces / PU
SILVYN AMG FG							
55503275	832.016.9	3/8"	17.8	33.0	10.2	26.0	50
55503276	832.020.9	1/2"	21.1	35.0	13.9	29.0	50
55503277	832.025.9	3/4"	26.4	37.0	18.5	35.0	25
55503278	832.032.9	1"	33.1	42.0	23.8	45.0	10

Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- Cable damage can be prevented

Application range

- In combination with protective conduit
- SILVYN® HTDL/EF/OR/HCX/HFX/FG HIPROJACKET
- Conduit end cover

Product features

- All-round collar completely covers the protective conduit end

Approvals



Technical data

Material
 Steel

Design

- Threaded sleeve

Suitable conduits

- SILVYN® HTDL Page 826
- SILVYN® OR Page 827
- SILVYN® HCX Page 828
- SILVYN® HFX Page 828

SILVYN® TB-E



Article number	Article designation	Typ T & B	Suitable for Anaconda conduits	Pieces / PU
SILVYN TB-E				
52024319	9	R 719 123	5/16"	50
52024320	11/13,5	R 719 101	3/8"	50
52024330	16	R 179 125	1/2"	50
52024340	21	R 179 126	3/4"	50
52024351	29	R 179 127	1"	25
52024361	36	R 179 128	1 1/4"	10

Photographs are not to scale and do not represent detailed images of the respective products.

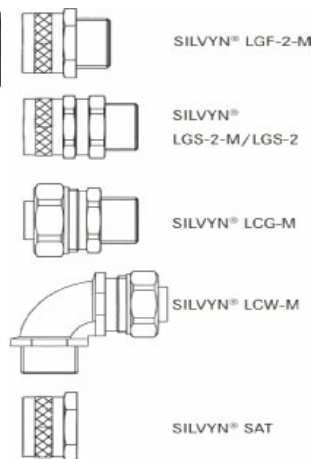
Impermeable protective cable conduit systems

Protective cable conduit system SILVYN® LCC-2 / LCCH-2

SILVYN® LCC-2



SILVYN® LCC-2



Benefits

- Protects against liquids
- High-tensile
- High crush-resistance
- Suitable for outdoor use and direct burial
- High mechanical resistance

Application range

- Mechanical engineering
- Plant engineering
- Outdoors
- Used in areas where liquids are present
- Applications with high mechanical stress

Approvals



Design

- Spirally-wound metal protective conduit with roughened profile
- PVC outer sheath

Technical data

RAL	Colour delivered Black (RAL 9005)
	Temperature range -20°C to +70°C Short-term: up to +100°C

Article number	Article designation	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	Suitable for SILVYN® LGF-2-M / LGS-2-M	Suitable for SILVYN® LGS-2	PU ring (m)
SILVYN® LCC-2							
61804702	LCC-2/10	6.8 x 10.0	25	6.8	M 12 x 1,5	7	30
61804712	LCC-2/12	10.2 x 14.0	30	10.2	M 16/1 x 1,5	9	30
61804722	LCC-2/16	13.0 x 17.0	40	13.0	M16/2 + 20/1x1,5	11	30
61804732	LCC-2/20	16.9 x 21.5	45	16.9	M 20/2 x 1,5	13,5 + 16	30
61804742	LCC-2/25	21.1 x 26.0	55	21.1	M 25 x 1,5	21	30
61804752	LCC-2/32	28.1 x 34.0	70	28.1	M 32 x 1,5	29	30
61804762	LCC-2/40	37.6 x 44.5	80	37.6	M 40 x 1,5	36	10
61804772	LCC-2/50	48.4 x 55.0	90	48.4	M 50 x 1,5		10
61804792	LCC-2/63	57.5 x 64.5	115	57.5	M 63 x 1,5	48	10

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

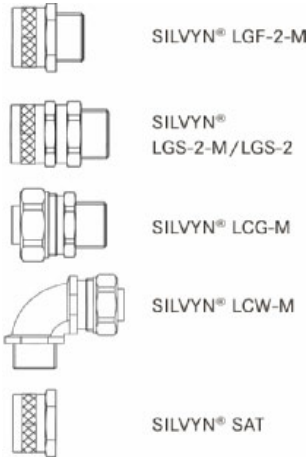
- SILVYN® LCCH-2 refer to page 835

Accessories

- SILVYN® LGF-2-M refer to page 836
- SILVYN® LGS-2-M refer to page 836
- SILVYN® LGS-2 refer to page 836
- SILVYN® LCG-M refer to page 837
- SILVYN® LCW-M refer to page 837
- SILVYN® SAT refer to page [P1208]

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SILVYN® LCCH-2



SILVYN® LCCH-2

Benefits

- High flame-retardance and self-extinguishing in accordance with UL 94V-0
- Protects against liquids
- High crush-resistance
- Suitable for outdoor use and direct burial
- High mechanical resistance

Application range

- Public utilities
- Mechanical engineering
- Outdoors
- Used in areas where liquids are present
- Applications with high mechanical stress

Product features

- Halogen-free
- Less fumes
- Low toxicity

Approvals

- RoHS**
- UNDERGROUND
 - LLOYD'S REGISTER

Design

- Spirally-wound metal protective conduit with roughened profile
- Plastic outer sheath

Technical data

- Colour delivered**
Black (RAL 9005)
- Material**
Inner conduit: steel, galvanised
Outer sheath: plastic, halogen-free
- Temperature range**
-25 °C to +90 °C

Article number	Article designation	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	PU ring (m)
SILVYN® LCCH-2					
61804793	LCCH-2 / 12	10.2 x 14.0	30	10.2	25
61804794	LCCH-2 / 16	13.0 x 17.0	40	13.0	25
61804795	LCCH-2 / 20	16.9 x 21.5	45	16.9	25
61804796	LCCH-2 / 25	21.1 x 26.0	55	21.1	25
61804797	LCCH-2 / 32	28.1 x 34.0	70	28.1	25
61804798	LCCH-2 / 40	37.6 x 44.5	80	37.6	10
61804799	LCCH-2 / 50	48.4 x 55.0	90	48.4	10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® LGF-2-M refer to page 836
- SILVYN® LGS-2-M refer to page 836
- SILVYN® LGS-2 refer to page 836
- SILVYN® LCG-M refer to page 837
- SILVYN® LCW-M refer to page 837
- SILVYN® SAT refer to page [P1208]

Impermeable protective cable conduit systems

Protective cable conduit system SILVYN® LCC-2 / LCCH-2

SILVYN® LGS-2 / SILVYN® LGS-2-M / SILVYN® LGF-2-M



SILVYN® LGS-2

SILVYN® LGS-2-M

SILVYN® LGF-2-M

Benefits

SILVYN® LGF-2-M

- For fixed applications
- High tensile strength
- Space-saving

SILVYN® LGS-2-M

- For rotating applications
- High tensile strength
- Space-saving

SILVYN® LGS-2

- For rotating applications
- High tensile strength
- Space-saving

Application range

- In combination with protective conduit
- SILVYN® LCC-2
- SILVYN® LCCH-2
- Outdoors
- Applications with high mechanical stress

Approvals



Design

SILVYN® LGF-2-M

- Metric connection thread
- Hexagonal collar
- Cap nut

SILVYN® LGS-2-M

- Metric connection thread
- Hexagonal collar with torsion element
- Cap nut

SILVYN® LGS-2

- PG connection thread
- Hexagonal collar with torsion element
- Cap nut

Suitable conduits

- SILVYN® LCC-2 Page 834
- SILVYN® LCCH-2 Page 835

Technical data



Material
Nickel-plated brass



Protection rating
IP 54

Article number	Article designation	Overall length, C (mm)	Thread length, D (mm)	SW (mm)	Suitable for SILVYN® LCC-2/LCCH-1	Pieces / PU
SILVYN® LGF-2-M						
55501981	12 x 1,5	21.0	8.0	13.0	10	10
55502001	16 x 1,5/1	23.0	8.0	17.0	12	10
55502002	16 x 1,5/2	25.0	10.0	20.0	16	10
55502021	20 x 1,5/1	25.0	10.0	22.0	16	10
55502022	20 x 1,5/2	26.3	10.0	24.0	20	10
55502031	25 x 1,5	32.5	10.0	29.0	25	10
55502041	32 x 1,5	36.8	13.0	38.0	32	10
55502051	40 x 1,5	39.0	14.0	48.0	40	4
55502061	50 x 1,5	42.0	15.0	58.0	50	4
55502071	63 x 1,5	50.0	18.0	70.0	63	1
SILVYN® LGS-2-M						
55501982	12 x 1,5	30.2	8.0	13.0	10	10
55502003	16 x 1,5/1	32.2	8.0	17.0	12	10
55502004	16 x 1,5/2	34.2	10.0	20.0	16	10
55502023	20 x 1,5/1	34.2	10.0	22.0	16	10
55502024	20 x 1,5/2	35.5	10.0	24.0	20	10
55502032	25 x 1,5	43.7	10.0	29.0	25	10
55502042	32 x 1,5	48.0	13.0	38.0	32	10
55502052	40 x 1,5	51.2	14.0	48.0	40	4
55502062	50 x 1,5	54.2	15.0	58.0	50	4
55502072	63 x 1,5	63.2	18.0	70.0	63	1
SILVYN® LGS-2						
55502710	7	32.0	7.0	13.0	10	10
55502720	9	38.0	10.0	17.0	12	10
55502730	11	38.0	10.0	22.0	16	10
55502740	13,5	39.0	12.0	24.0	20	10
55502750	16	44.0	12.0	24.0	20	10
55502760	21	50.0	12.0	29.0	25	10
55502770	29	56.0	12.0	38.0	32	10
55502780	36	59.0	12.0	48.0	40	4
55502790	48	61.2	16.0	70.0	63	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SILVYN® LCW-M / SILVYN® LCG-M



SILVYN® LCW-M

SILVYN® LCG-M

Benefits

SILVYN® LCG-M

- High tensile strength
- Vibration protection
- Enhanced sealing

SILVYN® LCW-M

- 90° elbow enables best assembling
- High tensile strength
- Vibration protection
- Enhanced sealing

Application range

- In combination with protective conduit
- Protective cable conduit system SILVYN® LCC-2 / LCCH-2
- Applications with high mechanical stress
- Used in areas where liquids are present

Approvals



Design

SILVYN® LCG-M

- Metric connection thread
- Hexagonal collar
- Threaded sleeve
- Cap nut

SILVYN® LCW-M

- Metric connection thread
- 90° hexagonal collar
- Threaded sleeve
- Cap nut

Suitable conduits

- SILVYN® LCC-2 Page 834
- SILVYN® LCCH-2 Page 835

Technical data



Material
SILVYN® LCG-M
 Body: nickel-plated brass
 Seal: PA compression seal
SILVYN® LCW-M
 Body: nickel-plated brass
 O-ring: NBR



Protection rating
 IP 65

Article number	Article designation	Overall length, C (mm)	Thread length, D (mm)	SW 1/2 mm	Suitable for SILVYN® LCC-2/LCCH-2	Pieces / PU
SILVYN® LCG-M						
55503220	12 x 1,5	29,8	10,0	20 / 20	10	10
55503221	16 x 1,5 / 1	29,8	10,0	22 / 24	12	10
55503222	16 x 1,5 / 2	33,0	12,0	24 / 26	16	10
55503223	20 x 1,5 / 1	33,0	12,0	24 / 26	16	10
55503224	20 x 1,5 / 2	33,5	12,0	26 / 29	20	10
55503225	25 x 1,5	40,5	14,0	33 / 35	25	10
55503226	32 x 1,5	45,8	15,0	40 / 42	32	2
55503227	40 x 1,5	47,5	16,0	50 / 52	40	1
55503228	50 x 1,5	51,0	16,0	58 / 58	50	1
SILVYN® LCW-M						
55503234	16 x 1,5 / 1	31,0	10,0	20 / 24	12	10
55503235	16 x 1,5 / 2	31,0	10,0	20 / 26	16	10
55503230	20 x 1,5 / 1	36,0	13,0	24 / 26	16	10
55503231	20 x 1,5 / 2	37,0	13,0	24 / 29	20	10
55503232	25 x 1,5	44,0	14,0	30 / 35	25	10
55503233	32 x 1,5	53,0	15,0	36 / 42	32	2

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® LTP



SILVYN® LTP

Benefits

- Protects against liquids
- High-tensile
- Robust
- High crush-resistance
- Largely resistant to oil and acids, UV-resistant

Application range

- Mechanical engineering
- Outdoors
- Transformer construction
- Railway applications
- Paper industry

Approvals



Design

- Spirally-wound heavy metal protective conduit with roughened profile
- Plastic outer sheath

Technical data

RAL Colour delivered
Black (RAL 9005)

Material
Steel, galvanised
PVC sheath

Temperature range
-20°C to +105°C

Article number	Article designation	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	PU ring (m)
Protective cable conduit system SILVYN® LTP					
61805400	10	7.0 x 11.8	35	7.0	50
61805410	12	10.0 x 14.2	40	10.0	50
61805420	16	12.6 x 17.8	45	12.6	50
61805430	20	16.0 x 21.1	65	16.0	50
61805440	25	21.1 x 26.4	100	21.1	25
61805450	32	26.5 x 33.1	135	26.5	25
61805460	40	35.4 x 41.8	175	35.4	10
61805470	50	40.4 x 47.9	230	40.4	10
61805480	63	51.6 x 59.7	280	51.6	10

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SILVYN® HTDL refer to page 826
- SILVYN® OR refer to page 827

Accessories

- SILVYN® LTPG-M refer to page 839
- SILVYN® LTPW-M refer to page 839

SILVYN® LTPW-M / SILVYN® LTPS-M / SILVYN® LTPG-M



Benefits

- High tensile strength
- Vibration protection
- High sealing performance

Application range

SILVYN® LTPG-M

- In combination with protective conduit
- Protective cable conduit system SILVYN® LTP
- Applications with high mechanical stress
- Used in areas where liquids are present

SILVYN® LTPS-M

- In combination with protective conduit
- Protective cable conduit system SILVYN® LTP
- Applications with high mechanical stress
- Used in areas where liquids are present

SILVYN® LTPW-M

- In combination with protective conduit
- Protective cable conduit system SILVYN® LTP
- Applications with high mechanical stress
- Used in areas where liquids are present
- For applications with limited space

Approvals



Design

SILVYN® LTPG-M

- Metric connection thread
- Hexagonal collar
- Threaded sleeve
- Cap nut

SILVYN® LTPS-M

- Metric connection thread
- Hexagonal collar with torsion element
- Threaded sleeve
- Cap nut

SILVYN® LTPW-M

- Metric connection thread
- 90° hexagonal collar
- Threaded sleeve
- Cap nut

Suitable conduits

- SILVYN® LTP Page 838

Technical data

Material
Nickel-plated brass
Polyamide

Protection rating
IP 66 / 67 / 68 / 69K

Article number	Article designation	Overall length, C (mm)	Thread length, D (mm)	SW 1/2 mm	Suitable for SILVYN® LTP	Pieces / PU
SILVYN® LTPG-M						
55510200	M12 x 1,5	29,8	10,0	20 / 20	10	10
55510210	M16 x 1,5/1	29,8	10,0	20 / 22	12	10
55510220	M16 x 1,5/2	33,0	10,0	24 / 26	16	10
55510230	M20 x 1,5/1	33,0	12,0	24 / 26	16	10
55510240	M20 x 1,5/2	33,5	12,0	26 / 29	20	10
55510250	M25 x 1,5	40,5	14,0	33 / 35	25	10
55510260	M32 x 1,5	45,8	15,0	40 / 42	32	2
55510270	M40 x 1,5	47,5	16,0	50 / 52	40	1
55510280	M50 x 1,5	51,0	16,0	58 / 58	50	1
55510290	M63 x 1,5	58,8	20,0	70 / 70	63	1
SILVYN® LTPS-M						
55510600	M16 x 1,5/1		10,0	20 / 22	12	10
55510610	M16 x 1,5/2		12,0	24 / 26	16	10
55510620	M20 x 1,5/1		12,0	24 / 26	16	10
55510630	M20 x 1,5/2		12,0	26 / 29	20	10
55510640	M25 x 1,5		14,0	33 / 35	25	10
55510650	M32 x 1,5		15,0	40 / 42	32	2
SILVYN® LTPW-M						
55510400	M16 x 1,5/1		10,0	20 / 24	12	10
55510410	M16 x 1,5/2		10,0	20 / 26	16	10
55510420	M20 x 1,5/1		13,0	24 / 26	16	10
55510430	M20 x 1,5/2		13,0	24 / 29	20	10
55510440	M25 x 1,5		14,0	30 / 35	25	10
55510450	M32 x 1,5		15,0	36 / 42	32	2
55510460	M40 x 1,5		18,0	46 / 52	40	1
55510470	M50 x 1,5		18,0	57 / 58	50	1
55510480	M63 x 1,5		20,0	72 / 70	63	1

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® processing tools

Cutting tools for protective cable conduit systems

SILVYN® CC01



Benefits

- Proper and safe cutting of plastic conduits

Application range

- Conduit shears for non-metallic conduit, e.g. parallel corrugated protective conduit.

Suitable conduits

- SILVYN® BRAID/SI/SP/SP-PU/ Page 758
- SILVYN® EL/ELÖ/ELT Page 769
- SILVYN® FPAS Page 797

- SILVYN® HCC Page 794
- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA6 SINUS Page 811
- SILVYN® SPLIT Page 808
- SILVYN® HIPROJACKET Page 825
- SILVYN® RILL PA 12 Page 783

Article number	Article designation	Cutting range Ø (mm)	Pieces / PU
61722285	CC01	0 - 45	1
61722286	CC02	0 - 67	1

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® ANAC-WZ



Application range

- Cutting tools for metallic and non-metallic conduits
- For right-angled sawing of protective metal conduits.

Suitable conduits

- SILVYN® HTDL Page 826
- SILVYN® SSUE Page 820
- SILVYN® UI 511 Page 822

- SILVYN® EDU-AS Page 813
- SILVYN® EF Page 827
- SILVYN® OR Page 827
- SILVYN® AS-P Page 815
- SILVYN® HCX Page 828
- SILVYN® HFX Page 828
- SILVYN® EMC AS-CU Page 814

Article number	Article designation	Saw range Ø (mm)	Pieces / PU
61722280	SAWING DEVICE WZ	18 - 45	1

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® BMC-M



Benefits

- Easy to assemble
- Tear-proof connection
- Optional extension of all conduits

Application range

- In combination with protective conduit
- All metric conduit glands

Approvals



Technical data

- Upon request**
M75
PG sizes
- Material**
Nickel-plated brass
- Temperature range**
Dependent on the glands used

Article number	Article designation	Connection thread M	Outer Ø (mm)	Overall length, C (mm)	SW (mm)	Pieces / PU
SILVYN® BMC-M						
55510000	16	M16 x 1.5	22.0	22.5	20.0	10
55510010	20	M20 x 1.5	26.4	25.0	24.0	10
55510020	25	M25 x 1.5	31.9	30.0	29.0	10
55510030	32	M32 x 1.5	38.5	32.5	35.0	10
55510040	40	M40 x 1.5	53.0	34.0	48.0	2
55510050	50	M50 x 1.5	63.8	38.0	58.0	1
55510060	63	M63 x 1.5	77.0	45.0	70.0	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

SILVYN® BW-K-M

Benefits

- Space-saving

Application range

- Mechanical engineering
- Plant engineering
- Control cabinet manufacturing
- Used in areas where SILVYN® protective conduits cannot be inserted into a machine or an appliance

Approvals



Design

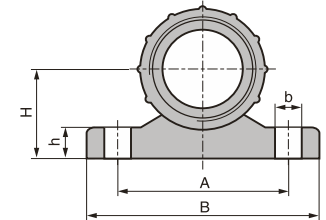
- Plastic fixing bracket
- 2 x bore hole for fixation

Technical data

RAL Colour delivered
Grey, RAL 7001

Material
PP

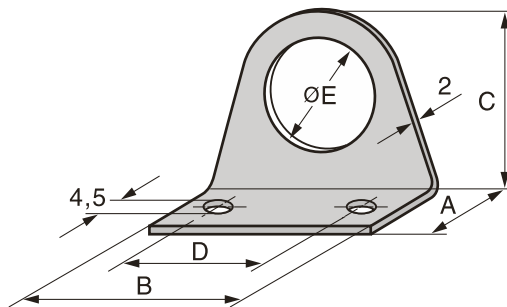
Temperature range
-40°C to +100°C



Article number	Connection thread M	A mm	B in mm	h mm	H	Hole Ø (mm)	Pieces / PU
SILVYN® BW-K-M							
55000911	20 x 1.5	37.5	50.0	7.5	20.0	5.7	50
55000921	25 x 1.5	43.0	57.0	8.0	25.0	5.7	50
55000931	32 x 1.5	53.5	67.0	8.0	27.0	6.7	50
55000941	40 x 1.5	65.5	79.5	9.0	33.0	6.7	50
55000951	50 x 1.5	69.5	86.0	9.5	36.5	6.7	50

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® BW-M



SILVYN® BW-M

Benefits

- Space-saving

Application range

- Mechanical engineering
- Plant engineering
- Control cabinet manufacturing
- Used in areas where SILVYN® protective conduits cannot be inserted into a machine or an appliance

Design

- Steel fixing bracket
- 2 x bore hole for fixation

Technical data

Material
Steel, passivated

Article number	Article designation	A mm	B in mm	Overall length, C (mm)	D (mm)	E mm	Pieces / PU
SILVYN® BW-M							
55000531	16	20.0	50.0	33.2	40.0	17.0	25
55000541	20	20.0	50.0	38.0	40.0	21.0	25
55000551	25	20.0	60.0	46.9	50.0	26.0	25
55000561	32	20.0	70.0	56.9	60.0	33.0	25
55000571	40	20.0	80.0	67.0	70.0	41.0	25
55000572	50	20.0	90.0	78.4	80.0	51.0	25

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® RKS



■ Benefits

- Fast and easy mounting
- Can be used universally

■ Application range

- Plant engineering
- Railway applications
- Automotive industry
- Fastening clamp for cables, conduits and pipes

■ Approvals



■ Technical data



Material

Steel, galvanised
Polychloroprene



Temperature range

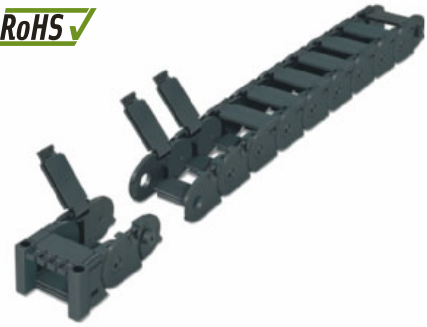
-35 °C to +100 °C

Article number	Article designation	Metal width (mm)	Width x thickness of rubber profile (mm)	Diameter (mm)	Hole Ø (mm)	Support length (mm)	Pieces / PU
SILVYN® RKS 1							
61825170	6/12	12.0	15 x 1,2	6.0	5.3 (M5)	16.0	100
61825180	8/12	12.0	15 x 1,2	8.0	5.3 (M5)	17.0	100
61825190	10/12	12.0	15 x 1,2	10.0	5.3 (M5)	18.0	100
61825200	12/12	12.0	15 x 1,2	12.0	5.3 (M5)	19.0	100
61825210	13/15	15.0	18,5 x 1,5	13.0	6.4 (M6)	23.7	100
61825355	14/15	15.0	18,5 x 1,5	14.0	6.4 (M6)	24.2	100
61825365	15/15	15.0	18,5 x 1,5	15.0	6.4 (M6)	24.7	100
61825375	16/15	15.0	18,5 x 1,5	16.0	6.4 (M6)	25.2	100
61825040	18/15	15.0	18,5 x 1,5	18.0	6.4 (M6)	26.2	100
61825052	19/15	15.0	18,5 x 1,5	19.0	6.4 (M6)	26.7	100
61825380	20/15	15.0	18,5 x 1,5	20.0	6.4 (M6)	27.2	100
61825382	21/15	15.0	18,5 x 1,5	21.0	6.4 (M6)	27.7	100
61825050	22/15	15.0	18,5 x 1,5	22.0	6.4 (M6)	28.2	100
61825390	23/15	15.0	18,5 x 1,5	23.0	6.4 (M6)	28.7	100
61825392	24/20	20.0	25 x 1,5	24.0	8.4 (M8)	35.0	100
61825400	25/15	15.0	18,5 x 1,5	25.0	6.4 (M6)	29.7	100
61825402	26/15	15.0	18,5 x 1,5	26.0	6.4 (M6)	30.2	100
61825250	28/15	15.0	18,5 x 1,5	28.0	6.4 (M6)	31.2	100
61825255	30/15	15.0	18,5 x 1,5	30.0	6.4 (M6)	32.2	100
61825257	32/15	15.0	18,5 x 1,5	32.0	6.4 (M6)	33.2	100
61825259	34/15	15.0	18,5 x 1,5	34.0	6.4 (M6)	34.2	100
61825260	35/15	15.0	18,5 x 1,5	35.0	6.4 (M6)	34.7	100
61825262	36/20	20.0	25 x 1,5	36.0	8.4 (M8)	41.0	100
61825264	38/20	20.0	25 x 1,5	38.0	8.4 (M8)	42.0	100
61825295	40/20	20.0	25 x 1,5	40.0	8.4 (M8)	43.0	100

Photographs are not to scale and do not represent detailed images of the respective products.

SILVYN® CHAIN Series Light

RoHS ✓



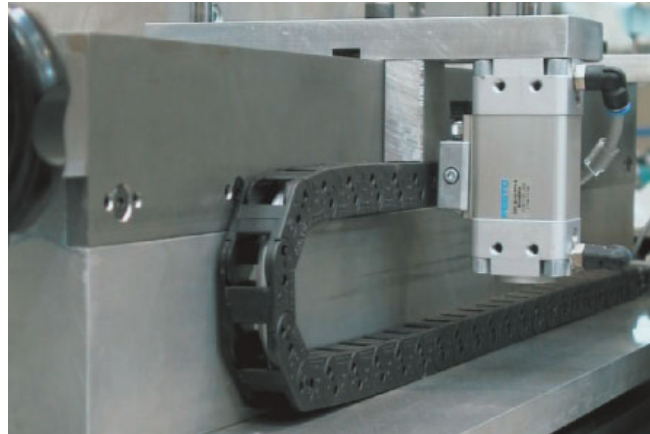
The lightweight with small diameters long traverse paths are also possible in connection with its guiding channel.

■ Characteristics

- Light applications
- Simple bolt system
- Inner height 12 – 25 mm
- 7 types

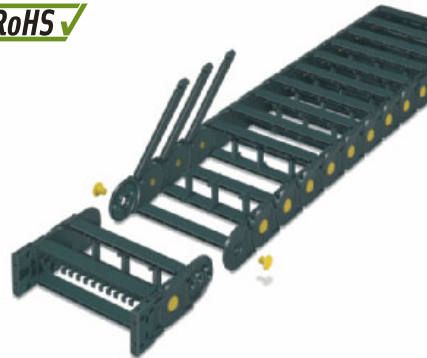
■ Application areas

- Automation
- Smaller robot gantries
- Textile equipment with long travel
- Printing equipment



SILVYN® CHAIN Series Medium

RoHS ✓



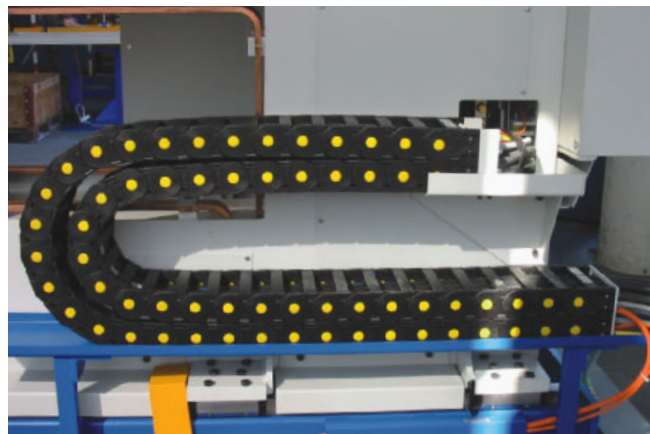
All purpose, due to its single pin, also for higher mechanical requirements. Specially for small and medium-size chains. Available closed or with openable lid.

■ Characteristics

- Standard applications
- Tongue/groove system with yellow pin
- Inner height 18 – 76 mm
- 12 types, many widths

■ Application areas

- Automation
- Handling equipment
- CNC machines
- Medium sliding applications



SILVYN® CHAIN Series Heavy



The robust with triple pin for self-supporting lengths up to 6.5 m. Guarantees durability of wires and chains and a wide selection of various frame systems.

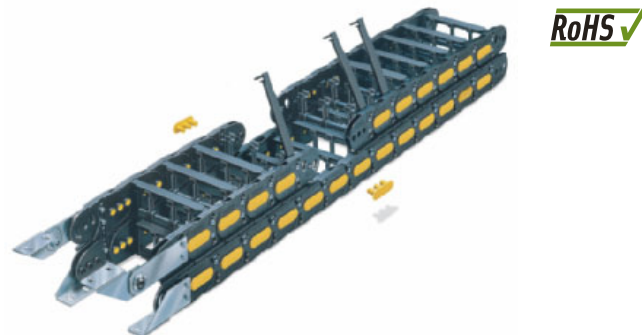
■ Characteristics

- Superior applications
- Tongue/groove system with yellow tripple pin
- Inner height 30 – 112 mm
- 12 types, many frame versions: Nylon, Aluminium, Inox

■ Application areas

- Automation with high travel frequency
- Outdoor equipment
- Movement with high lateral acceleration

SILVYN® CHAIN Series Sliding



Specialist for operation on very long travelling distances up to 400 meters. Chain links with shoes made of low-friction, low-wear plastics. System-completing channel constructions available for supporting and guiding the chain.

■ Characteristics

- Long sliding distances
- Tongue/groove system with yellow tripple pin
- Inner height 30 – 70 mm
- 12 types, many frame versions: Nylon, Aluminium, Inox

■ Application areas

- Sliding with high speed and high charge weight
- Long life-cycle applications (very long lifetime)

SILVYN® CHAIN Series Protection

RoHS ✓



Completely covered for extreme environments involving dust, wood and steel chips etc. Each chain link is fitted with removable covers – for very quick assembly or exchanging completed wires and conduits.

■ Characteristics

- Standard applications
- Tongue/groove system with yellow pin
- Inner height 35 – 76 mm
- 10 types, many with

■ Application areas

- Automation
- Dirty environment
- Machine tool centers



SILVYN® CHAIN Series Robot

RoHS ✓



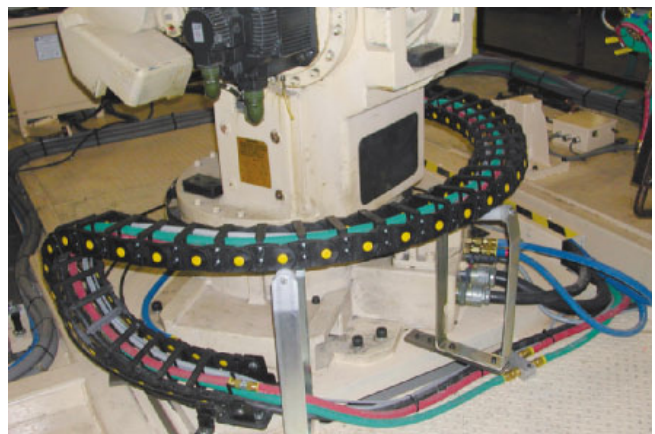
Specialist in rotary motion (over 360°) for example in welding and painting robots manipulators, assembling units, etc. Available in nine versions. Each chain link has folding traverses for simple assembly of wires and tubes.

■ Characteristics

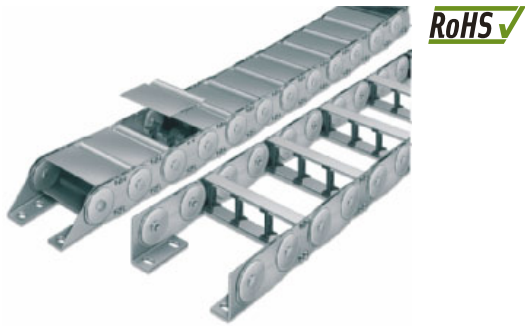
- Rotative applications
- Tongue / groove system patented element construction
- Inner height 35 – 60 mm
- Standard rotation angle up to 200° Guided rotation angle up to 400°
- 6 types

■ Application areas

- Welding robots
- Painting robots
- Handling robots



SILVYN® CHAIN Series Steel



The hardliner. For all applications not allowing the use of a plastic chain, for example in steel works, foundries, on machine tools and oil-rigs.

Made of galvanized steel with drilled aluminium frames or steel separators (adjustable separators). Available in stainless steel AISI 316 if required.

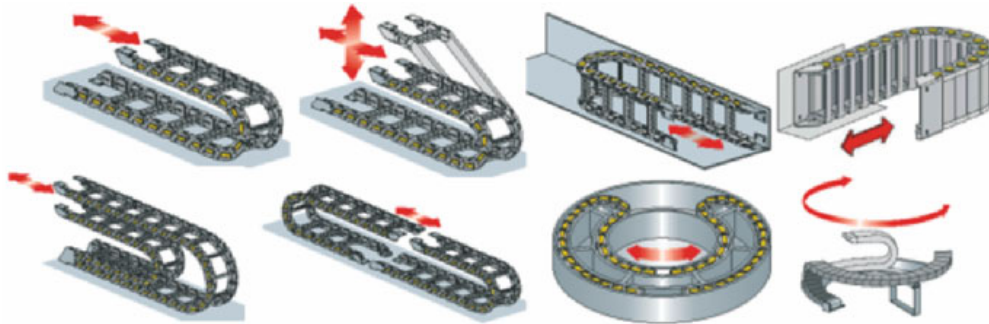
■ Characteristics

- Highest load capacity
- Highest chemical resistance
- Tongue/groove system in metal
- Inner height 32 – 182 mm
- 5 standard types
- Customised versions

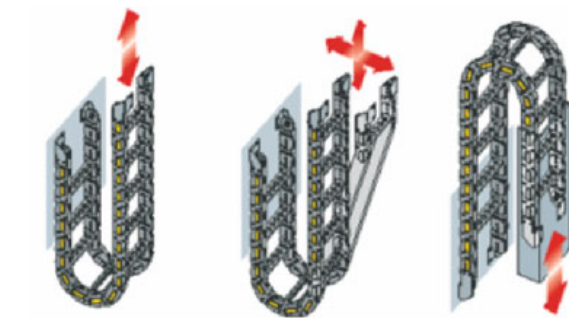
■ Application areas

- Steel mills/steel works
- Off-Shore
- Long-travel machining centers
- Heavy duty environment

SILVYN® CHAIN Installation types



Horizontal








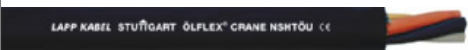

Vertical

SILVYN® CHAIN Cable protection and guiding systems

As a system provider, we offer one-stop complete systems such as cable guiding systems and suitable wires.

Lapp Kabel FD wires are a synonym for highly flexible drag chain cables in machine tools, building installations and apparatus, basically, in all places where moved

wires are used. Designed for maximum continuous use in the drag chain. Many types available.

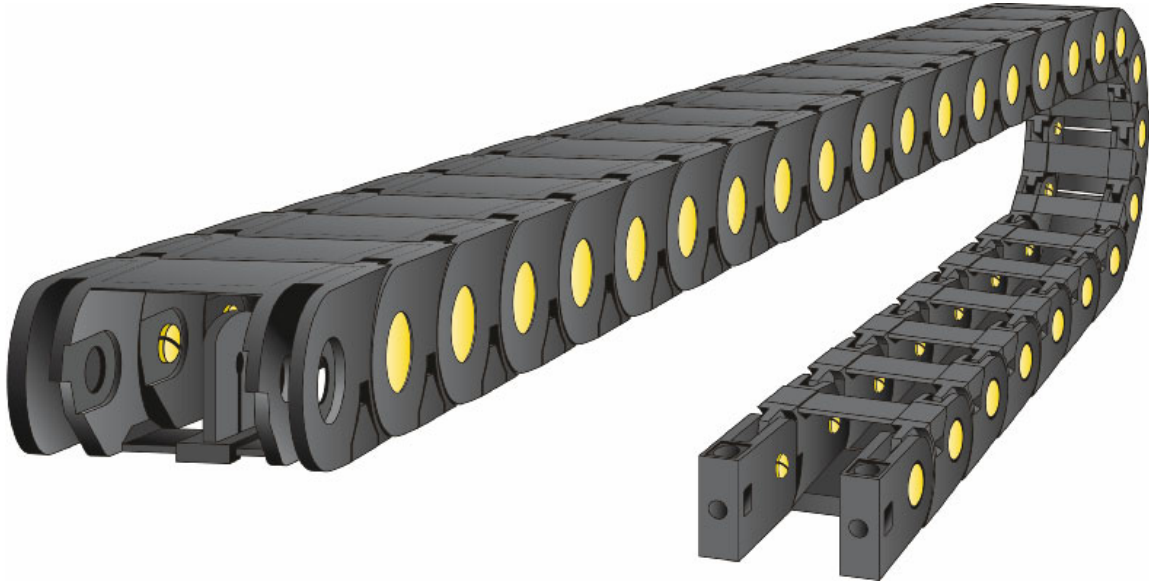
Picture of cable and wires	Description of cables and wires	Area of application
	ÖLFLEX® SERVO FD	Electronic drive engineering
	Wires according to renowned manufacturers' standards	Electronic drive engineering
	ÖLFLEX® CHAIN/FD	Measuring, drive and control technology
	UNITRONIC® FD	Analogue and digital signal transmission
	Coaxial FD cable	High-frequency transmission
	ÖLFLEX® CRANE NSHTÖU/ÖLFLEX® CRANE	Power, MSR technology, exterior
	HITRONIC® POF FD	Signal transmission via fibre optics

Overall summary selection see table A2.



New

SILVYN® CHAIN KITS – Quick, easy, modular and safe

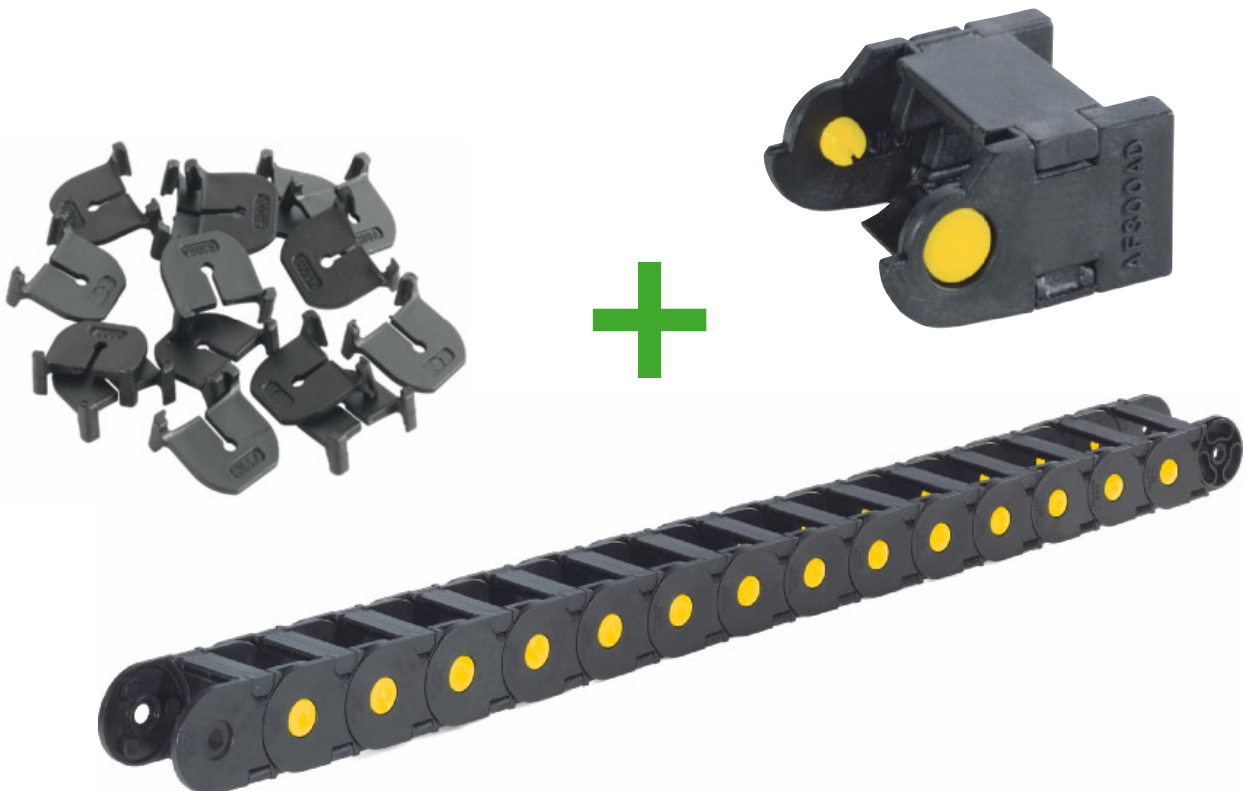


SILVYN® CHAIN the cable guidance system of the Lapp GROUP, known for reliable and long lasting cable guidance, is now introduced with a brand new selection opportunity. The so called SILVYN® CHAIN KITS, create an individual part assortment, which enables a fast, comfortable and

safe selection of the power chain, the suitable end brackets and further accessories. Due to the absolute clear determination of the system components, valuable time will be saved by terminating the correct chain components of SILVYN® CHAIN KITS.

Find our complete SILVYN® CHAIN KITS program at www.lappgroup.com

SILVYN® CHAIN KITS



Single core marking

FLEXIMARK® Single core marking	854
Marking rings and sleeves	859

FLEXIMARK® cable and component marking

FLEXIMARK® MINI System	866
FLEXIMARK® HEAT SHRINK FCC	871
FLEXIMARK® Stainless steel marking	872
FLEXIMARK® device marking FCC-BMK	876

FLEXIMARK® PC marking

FLEXIMARK® marking software	877
FLEXIMARK® Laser printer system	878
FLEXIMARK® Thermal Transfer System	885

Easy to label

Cable ties with marking field	890
Cable markers and pens	891

Electronic label-printers

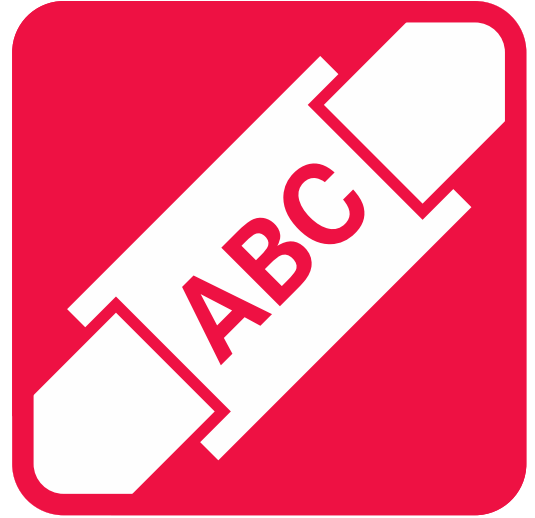
Electronic label-printers	892
---------------------------	-----

Embossing machines

Manual embossing machines	896
---------------------------	-----

FLEXIMARK®

Cable marking systems



Single core marking

Resistance of FLEXIMARK® labels	851
FLEXIMARK® Marking Guide	852
FLEXIMARK® Single core marking	
FLEXIMARK® Flexipart single wire marking	854
FLEXIMARK® Flexipart FCC	855
FLEXIMARK® Sleeve FS	855
FLEXIMARK® Collar Snap-on	856
FLEXIMARK® Collar halogenfree	857
FLEXIMARK® Collar with cable tie	858
FLEXIMARK® Flexilabel LFL	858
Marking rings and sleeves	
Marking rings PC	859
PCG Mounting tools	861
Storage box	861
Marking rings PA	862
PAD Mounting rod	864
PAV Mounting tool	864
PT Marking sleeves	865
PF Labels	865

FLEXIMARK® cable and component marking

FLEXIMARK® MINI System	
FLEXIMARK® Marking Kit MINI	866
FLEXIMARK® Character holders MINI	866
FLEXIMARK® Character holders PTEF/ CAB	867
FLEXIMARK® FLG End plug / FLEXIMARK® FLKA Lock button	867
FLEXIMARK® FL52 - ERA special hole pliers	868
FLEXIMARK® FL 52A special hole pliers	868
FLEXIMARK® Character holders PGS - MINI	868
FLEXIMARK® Characters plastic MINI	
FLEXIMARK® Characters strips plastic set MINI	869
FLEXIMARK® MINI/MAXI FCC Cable marking	870
FLEXIMARK® HEAT SHRINK FCC	
FLEXIMARK® SHRINK MARK FCC-FK Shrink tube marking	871
FLEXIMARK® Stainless steel marking	
FLEXIMARK® Stainless steel kit	872
FLEXIMARK® NM Stainless steel - character holders	872
FLEXIMARK® ZT Stainless steel - character holders	873
FLEXIMARK® LD Steel cable tie	873
FLEXIMARK® MR Stainless steel character	
FLEXIMARK® Stainless steel - character Set	874
FLEXIMARK® Stainless steel FCC	875
FLEXIMARK® device marking FCC-BMK	
FLEXIMARK® Engraved markers BMK-FCC - component markers	876

FLEXIMARK® PC marking

FLEXIMARK® marking software	
FLEXIMARK® Software 10.0	877
FLEXIMARK® Laser printer system	
FLEXIMARK® ULTRA L 12X8,5	New 878
FLEXIMARK® FLEXIPRINT LF Single core marking	879
FLEXIMARK® LFL Cable label	879
FLEXIMARK® Wrapping labels LCK	880
FLEXIMARK® LA Labels	881
FLEXIMARK® LB Labels	881
FLEXIMARK® LA Labels	New 882
SK Self-adhesive labels	882
KKSB Marking labels	883
FKLS Marking labels	883
ETB Marking labels	884
KMK Marking labels	884
FLEXIMARK® Thermal Transfer System	
FLEXIMARK® Thermoprint A4+M/300	885
FLEXIMARK® Accessories Transfer Printer A4+M/300	886
FLEXIPRINT TF Single core marking	886
FLEXIMARK® FLEXILABEL TFL Cable marking	New 887
FLEXIMARK® Heat shrinkable tubing	887
FLEXIMARK® TA Labels Cable marking	888
FLEXIMARK® TCK Labels Cable marking	889

Easy to label

Cable ties with marking field	
Basic Tie Ident BTI-I Cable tie	890
Basic Tie Ident BTI-II Cable tie	890
Basic Tie Ident BTI-III Cable tie	890
Cable markers and pens	
WM BW Blanc cable marker	891
MS Marker pens	891

Electronic label-printers

Electronic label-printers	
DYMO® Industry Rhino Pro 6000 Kit / DYMO® Rhino Pro 5200	892
DYMO® ID1 - Industry tape D1	893
DYMO® Label Manager 260P	894
DYMO® Label Manager 210D	894
DYMO® Tape D1	895

Embossing machines

Manual embossing machines	
M1011 Manual embossing machine	896
SP Metal print	896

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Resistance of FLEXIMARK® labels																			
Product	Material	Temperature Range	Resistance			Chemical						Chemical resistance and abrasion test							
			UV-light	Ageing	Abrasion of the marking text	Diesel	Acid (H2SO4), 25%	Alkali (Detergent solution, 10%)	Distilled water	Salt water (5% NaCl)	Transformer oil (Nytro 10X)	Ethanol	Diesel	Acid (H2SO4), 25%	Alkali (Detergent solution, 10%)	Distilled water	Salt water (5% NaCl)	Transformer oil (Nytro 10X)	Ethanol
LCK Wrapping labels	Polyester	-40°C - +125°C	■	■	■							■	■	■	■	■	■	■	■
Flexiprint LF	Polyester	-40°C - +125°C	■	■	■							■	□	■	■	■	■	□	□
Flexipart	Polyester	-40°C - +100°C	□	■	■							■	■	□	■	■	■	■	■
LFL cable label	Polyester	-40°C - +125°C	■	■	■							■	□	■	■	■	■	■	■
LB labels	Polyester	-40°C - +125°C	■	■	■							■	■	■	■	■	■	■	■
Flexiprint TF	Polyester	-40°C - +125°C	■	■	■							■	□	□	■	■	■	■	■
Character holders MINI	PTE	-75°C - +80°C	■	■	■	■	■	■	■	■	■								
Character holders PTEF/CAB	PTE	-75°C - +80°C	■	■	■	■	■	■	■	■	■								
Characters strips plastic MINI	PVC	-20°C - +65°C	■	■	■	■	■	■	■	■	■								
TA Labels Cable marking	Polyester	-40°C - +150°C	■	■	■							■	■	□	■	■	■	■	■
Flexi sleeve FS	PVC	-15°C - +90°C	■	■	■							■	■	■	■	■	■	■	■
Shrink tube marking	Polyolefin	-55°C - +125°C	■	■	□							□	□	□	□	□	□	□	□
Collars	PUR+PE	-40°C - +80°C	■	■	■	■	■	■	■	■	■								
Character holders PGS - MINI	ABS	-20°C - +45°C	■	■	■							■	■	■	■	■	■	■	■
MINI FCC Cable marking system	PE	-30°C - +70°C	■	■	□	■	■	■	■	■	■								
Stainless steel marking FCC	SS 2348	max +500°C	■	■	■	■	■	■	■	■	■								

■ = high ■ = medium □ = none

To meet the high requirements of our products and to ensure our quality standard all FLEXIMARK® products are subjected to a series of strict tests. These are made

by the independent SP Technical Research Institute of Sweden using the SP 2171 Test Method which is used especially for collars and plastic information carrier which mark

electric wires, cables, components and clamps. For receiving an impression, some of the tests are listed below:

Test	Method and criteria
Ageing resistance	Accelerated ageing in heat oven (2000 days at 90°C (194°F)) corresponding to use at 20°C (+68°F) for 30 years. Check for cracks, breaks or similar damage. (Max 50% reduction in elongation before breakage.) Also check for mountability and dismountability.
UV-resistance	Accelerating test corresponding to ISO 4892-2 exposure 1 year outdoors in southern Sweden. Check for brittleness and change in colour and readability.
Abrasion resistance of marking text	According to SP Method 2172 (rubbing machine). Load 75 g per mm mandrel diameter. 200+200 cycles.
Chemical resistance	Mounted sleeves kept for 24 hours at +23°C & -2°C (+73.4°F & 28.4°F) immersed in the chemical. Drying for 2 hours then check for functionality, colour fastness and print legibility. Chemicals used: Synthetic diesel oil, Sulphuric acid 25%, basic cleaning agent (Berol226, 10%), Distilled water, Sea water (5% NaCl), Transformer oil (Nytro 10x), Ethanol, other chemicals on request.
Chemical resistance with Abrasion test	Combination of abrasion-test and chemical resistance-test.

Note: actual version and further information are available on our homepage

		BASIC SYSTEM	CUSTOMIZED SYSTEM				
How?		Ready made to deliver for each environment	Your demand - we deliver				
	What?						
CABLE	Outdoor & Indoor	<p>MINI & MAXI & HOLDERS PTE</p>	<p>STAINLESS STEEL</p>	<p>STAINLESS STEEL</p>	<p>CABLE MARKING</p>		
		<p>COLLARS TS & HF & MARKING TAGS</p>	<p>SHRINK TUBES</p>	<p>COLLARS FOR CABLE TIES & MARKING TAGS</p>	<p>COLLARS FOR CABLE TIES & MARKING TAGS</p>	<p>TEXT COLLARS PTET</p>	
	Indoor	<p>LABEL CARDS AND BLOCKS</p>	<p>DYMO® printer</p>	<p>SHRINK TUBE MARKING</p>	<p>CABLE TIE MARKING FKBB</p>		
		<p>FLEXIPART</p>	<p>PA MARKING RINGS</p>	<p>SHRINK TUBE MARKING</p>	<p>FLEXIPART</p>	<p>MARKING RINGS</p>	
	WIRE	before mounting the wire	<p>FLEXIPART</p>	<p>PA MARKING RINGS</p>	<p>SHRINK TUBE MARKING</p>	<p>FLEXIPART</p>	<p>MARKING RINGS</p>
		after mounting the wire	<p>SNAP-ON COLLARS & MARKING TAGS</p>	<p>PC MARKING RINGS</p>	<p>SNAP-ON COLLARS & MARKING TAGS</p>		
COMPONENT	Device marking	<p>MLM MOUNTING PROFILES & MINI</p>	<p>PGS CHARACTER HOLDERS</p>	<p>ENGRAVED MARKING</p>			
	Terminal	<p>TERMINAL BLOCK</p>	<p>DYMO® printer</p>	<p>TERMINAL BLOCK</p>			
	Sensor						

DYMO® is a registered trademark of SANFORD GmbH

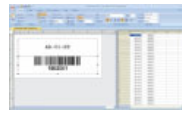
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

DATA MARKING

Laser office printer



FLEXIMARK® 10.0



Thermal transfer printers



COLLARS FOR CABLE TIES LFL 4,2



FLEXILABEL LFL & HOLDERS
PTET/LAB



FLEXILABEL TFL & HOLDERS
PTEF/LAB



COLLARS FOR CABLE TIES &
MARKING TAGS TMB



LCK/LCFK LABELS



CABLE LABEL LFL & TIES



CABLELABEL TFL & TIES



TCK LABELS



TAG TIES & LA/LB LABELS



FLEXIMARK® flat shrink tube



TAG TIES & TA LABELS



FLEXIPRINT LF



COLLARS TS/HF &
FLEXILABEL LFL 4,2



FLEXIPRINT TF



SHRINKING TUBES
SHRINK MARK SM



LCFK/LCK LABELS



BRADY® FLAG LABELS B-425



TCK LABELS



FLAG LABELS



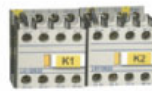
SNAP-ON COLLARS &
MARKING TAGS



LA/LB LABELS



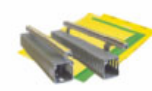
LFL LEXEL/THORSMAN



TA LABELS



BRADY® EPREP



MLM MOUNTING
PROFILES & TFL 9,5



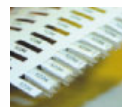
LA/LB/LC LABELS



TERMINAL BLOCK



CLIP-ON COLLARS & LFL



BRADY® DURASLEEVE

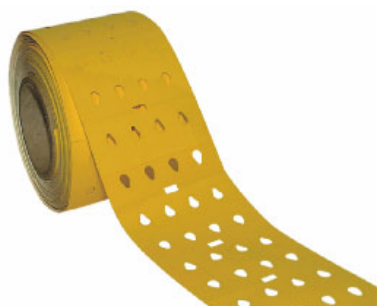


CLIP-ON COLLARS &
MARKING TAGS

Single core marking

FLEXIMARK® Single core marking

FLEXIMARK® Flexipart single wire marking



FLEXIMARK® Flexipart single wire marking

Benefits

- Easy to assemble/install
- Good overall view, as the remaining markers stay on the marking roll

Application range

- Flexipart is a unique system for clean and permanent marking of single cores and thin cables.
- This system is suitable for marking electrical equipment and fibre cables during installation

Approvals



Note

- For cable cross-sections over 16.00 mm², cable ties can be used for installing single markers
- Special FCC cards in all sizes with customised printing

Design

- Flexipart consists of single marking rolls that contain 20-60 perforated markers, depending on the size (F0/F1/F1b/F2/F3)
- The following colours are available upon request: yellow, green, blue, red

Included

- Customised order size on rolls

Technical data

- Note**
On rolls
- Colour delivered**
White
- Material**
Halogen-free polyester
Thickness: 0.25 mm
- Temperature range**
-40°C to +125°C

Article number	Article designation	Marking	For mm ²	Contents (unit)	PU
Blank rolls in different sizes					
83255011	FLEXIMARK Flexipart BF0 0.25-0.75 WH	Blank, for customised labelling	0.25 - 0.75	600	1
83255012	FLEXIMARK Flexipart BF1 0.75-1.5 WH	Blank, for customised labelling	0.75 - 1.5	600	1
83255013	FLEXIMARK Flexipart BF1B 1.5-2.5 WH	Blank, for customised labelling	1.5 - 2.5	600	1
83255014	FLEXIMARK Flexipart BF2 2.5-6.0 WH	Blank, for customised labelling	2.5 - 6	600	1
83255015	FLEXIMARK Flexipart BF3 6.0-16.0 WH	Blank, for customised labelling	6 - 16	200	1
F1 sequence labels with consecutive numbers					
83280010	FLEXIMARK Flexipart Sequencecard F1 0.75-1.5 1-50 WH	1-50+10 Blanko	0.75 - 1.5	60	1
83280011	FLEXIMARK Flexipart Sequencecard F1 0.75-1.5 51-100 WH	51-100+10 Blanko	0.75 - 1.5	60	1
83280012	FLEXIMARK Flexipart Sequencecard F1 0.75-1.5 101-150 WH	101-150+10 Blanko	0.75 - 1.5	60	1
83280013	FLEXIMARK Flexipart Sequencecard F1 0.75-1.5 151-200 WH	151-200+10 Blanko	0.75 - 1.5	60	1
F1b sequence labels with consecutive numbers					
83280014	FLEXIMARK Flexipart Sequencecard F1B 1.5-2.5 1-50 WH	1-50+10 Blanko	1.5 - 2.5	60	1
83280015	FLEXIMARK Flexipart Sequencecard F1B 1.5-2.5 51-100 WH	51-100+10 Blanko	1.5 - 2.5	60	1
83280016	FLEXIMARK Flexipart Sequencecard F1B 1.5-2.5 101-150 WH	101-150+10 Blanko	1.5 - 2.5	60	1
83280017	FLEXIMARK Flexipart Sequencecard F1B 1.5-2.5 151-200 WH	151-200+10 Blanko	1.5 - 2.5	60	1

Other colours and sizes are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

FLEXIMARK® Flexipart FCC

Benefits

- Marking before assembly
- Customised printed labels in all sizes (F0/ F1/F1b/F2/F3)

Application range

- FLEXIMARK® cable marking system for individual application areas
- Up to max. 7 characters; L version up to max. 15 characters

Product features

- The shape ensures secure fixation to the cable, while the anti-rotation feature allows for a secure combination marking.

Approvals



Note

- Customised data will be emailed as a ASCII file or Excel file to the responsible Lapp employee when the order is made

Technical data

- Upon request**
Other colours are available upon request
- Colour delivered**
White



Article number	Article designation	Marking	Cable Ø (mm)	PU
83251101	FLEXIMARK Marker F0 0,25-0,75 WH	customised	0.25 - 0.75	1
83251111	FLEXIMARK Marker F10,75-1,5WH FCC	customised	0.75 - 1.5	1
83251121	FLEXIMARK Marker F1B1,5-2,5WH FCC	customised	1.5 - 2.5	1
83251131	FLEXIMARK Marker F2 2,5-6 WH FCC	customised	2.5 - 6	1
83251141	FLEXIMARK Marker F3 6-16 WH FCC	customised	6 - 16	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Benefits

- Easy to label

Application range

- Control Cabinet Single Cores
- FLEXIMARK® cable and component marking

Product features

- Easy to handle

Approvals



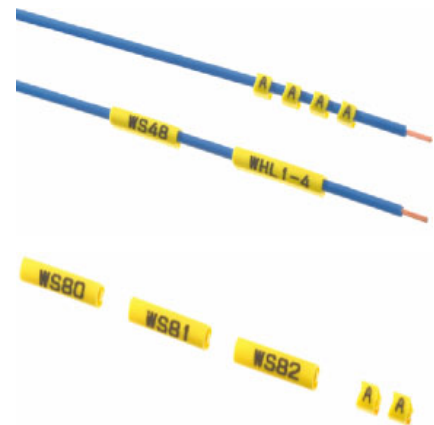
Note

- Customised data will be emailed as a ASCII file or Excel file to the responsible Lapp employee when the order is made

Technical data

- Material**
Flexible PVC; UL94 V0 (fire class)
- Temperature range**
-15 °C to +90 °C

FLEXIMARK® Sleeve FS



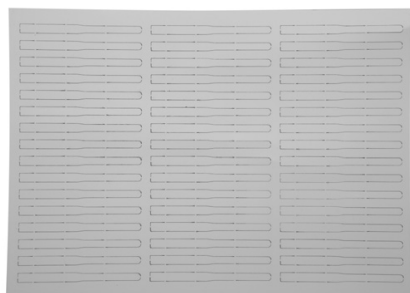
Article number	Article designation	Colour	For mm²	Number of characters	PU
83263000	FLEXIMARK Sleeve FS 30 0.5-1.5 1-4 YE	yellow	0.5 - 1.5	1-7	1
83263001	FLEXIMARK Sleeve FS 30 0.5-1.5 5-7 YE	yellow	0.5 - 1.5	8-12	1
83263002	FLEXIMARK Sleeve FS 30 0.5-1.5 8-12 YE	yellow	0.5 - 1.5	13-17	1
83263003	FLEXIMARK Sleeve FS 45 0.75-6 1-4 YE	yellow	0.75 - 6	1-7	1
83263004	FLEXIMARK Sleeve FS 45 0.75-6 5-7 YE	yellow	0.75 - 6	8-12	1
83263005	FLEXIMARK Sleeve FS 45 0.75-6 8-12 YE	yellow	0.75 - 6	13-17	1
83263006	FLEXIMARK Sleeve FS 90 4-16 1-4 YE	yellow	4 - 16	1-7	1
83263007	FLEXIMARK Sleeve FS 90 4-16 5-7 YE	yellow	4 - 16	8-12	1
83263008	FLEXIMARK Sleeve FS 90 4-16 8-12 YE	yellow	4 - 16	13-17	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Single core marking

FLEXIMARK® Single core marking

FLEXIMARK® Collar Snap-on



FLEXIMARK® Collar Snap-on

Benefits

- Efficient way of marking cables that are already installed
- Enhanced scratch-protection
- Unique system for rational and durable marking of wires and thin cables (e.g. fibre-optic cables) in control cabinets.

Application range

- FLEXIMARK® collar snap-on is composed of one rigid and elastic part that snaps onto the cable, and a soft and transparent part designed to hold the marker. Thus, the cable can still be marked after the electrical connection has been made.
- UNITRONIC® Fieldbus sensor-/actuator wiring

Approvals



Note

- FLEXIMARK® LMB labels can be used in different FLEXIMARK® marking collars. These labels are on DIN A 5 sheets and can be printed easily with the FLEXIMARK® Software. These labels are halogen-free.

Included

- Marking collars without labels (please see FLEXIMARK® labels LMB - 10 pcs. DIN A 5 sheets of 46 labels with laser printer)

Technical data

	Approvals Flame-retardant according to UL94 VO
	Colour delivered Transparent
	Material HD PE halogen-free
	Temperature range -40°C to +80°C

Article number	Article designation	Colour	Length (mm)	Cable Ø (mm)	Contents (unit)	PU
83252650	FLEXIMARK collar SnapOn 2-3.5/ 10 TR	transparent	10.0	3.5	1,000	1
83252651	FLEXIMARK collar SnapOn 2-3.5/ 15 TR	transparent	15.0	3.5	1,000	1
83252695	FLEXIMARK collar SnapOn 2-3.5/ 23 TR	transparent	23.0	3.5	500	1
83252653	FLEXIMARK collar SnapOn 2.8-5/ 10 TR	transparent	10.0	5	1,000	1
83252654	FLEXIMARK collar SnapOn 2.8-5/ 15 TR	transparent	15.0	5	1,000	1
83252656	FLEXIMARK collar SnapOn 5-8/ 10 TR	transparent	10.0	8	500	1
83252657	FLEXIMARK collar SnapOn 5-8/ 15 TR	transparent	15.0	8	500	1
83252660	FLEXIMARK collar SnapOn 8-10/ 15 TR	transparent	15.0	10	500	1
Suitable labels						
83254680	FLEXIMARK Label LMB 69-4.7 YEWB	white/yellow	30.0		460	1

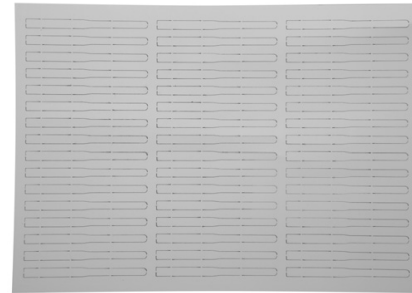
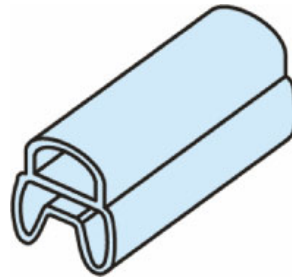
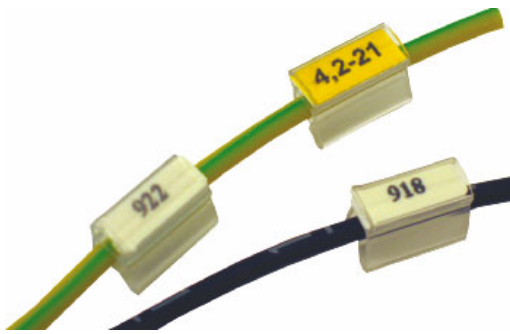
Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Software 10.0 refer to page 877

ÖLFLEX® | UNITRONIC® | ETHERLINE® | HITRONIC® | EPIC® | SKINTOP® | SILVYN® | FLEXIMARK® | ACCESSORIES | APPENDIX

FLEXIMARK® Collar halogenfree



FLEXIMARK® Collar halogenfree

Benefits

- Enhanced scratch-protection
- Durable application
- FLEXIMARK® collar halogen-free is equipped with a marking sleeve that is effective in scratch protection, making it an ideal option for permanent cable marking. This collar does not release halogenous substances if burned, and is therefore used in high-risk installations.

Application range

- Control cabinet wiring
- UNITRONIC® Fieldbus sensor-/actuator wiring

Product features

- FLEXIMARK® LMB labels can be used in different FLEXIMARK® marking collars. These labels are on DIN A 5 sheets and can be printed easily with the FLEXIMARK® Software. These labels are halogen-free.

Approvals



Included

- Marking collars without labels (please see FLEXIMARK® labels LMB - 10 pcs. DIN A 5 sheets of 46 labels with laser printer)

Technical data



Approvals

Flame-retardant according to UL94 VO



Colour delivered

Transparent



Material

Halogen-free PUR



Temperature range

-50 °C to +80 °C

Article number	Article designation	Colour	Length (mm)	Cable Ø (mm)	Contents (unit)	PU
83252670	FLEXIMARK collar halogenfree 1.4-5/10 TR	transparent	10.0	5	1,000	1
83252671	FLEXIMARK collar halogenfree 1.4-5/15 TR	transparent	15.0	5	1,000	1
83252693	FLEXIMARK collar halogenfree 1.4-5/23 TR	transparent	23.0	5	500	1
83252672	FLEXIMARK collar halogenfree 1.4-5/30 TR	transparent	30.0	5	500	1
83252673	FLEXIMARK collar halogenfree 5-11/10 TR	transparent	10.0	11	500	1
83252674	FLEXIMARK collar halogenfree 5-11/15 TR	transparent	15.0	11	500	1
83252694	FLEXIMARK collar halogenfree 5-11/23 TR	transparent	23.0	11	200	1
83252675	FLEXIMARK collar halogenfree 5-11/30 TR	transparent	30.0	11	200	1
Suitable labels						
83254680	FLEXIMARK Label LMB 69-4.7 YEWB	white/yellow	30.0		460	1

Photographs are not to scale and do not represent detailed images of the respective products.

Contents: roll, metre, unit, marker, label

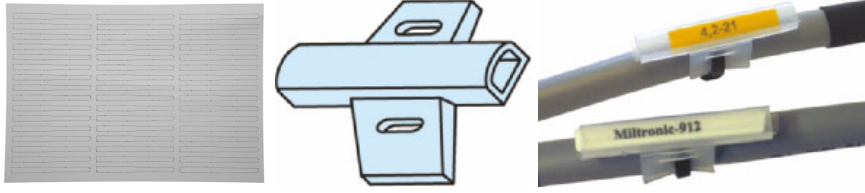
Accessories

- FLEXIMARK® Software 10.0 refer to page 877

Single core marking

FLEXIMARK® Single core marking

FLEXIMARK® Collar with cable tie



FLEXIMARK® Collar with cable tie

Benefits

- These FLEXIMARK® collars are scratch-resistant, thus they can be mounted outdoors.
- The use of cable ties allow the labelling to be reused several times

Application range

- Together with the FLEXIMARK® LMB labels, this becomes a reliable solution for marking, even for large cross-sections. This collar can easily be mounted onto a cable with cable ties.
- UNITRONIC® Fieldbus sensor-/actuator wiring

Approvals



Included

- Marking collars without labels (please see FLEXIMARK® labels LMB - 10 pcs. DIN A 5 sheets of 46 labels with laser printer)



Info

- Sample labels are available upon request

Technical data



Approvals

Flame-retardant according to UL94 VO



Colour delivered

Transparent



Material

Halogen-free PUR



Temperature range

-20°C to +65°C

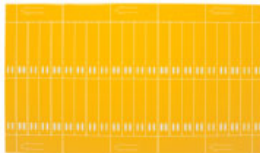
Article number	Article designation	Colour	Length (mm)	Contents (unit)	PU
83252676	FLEXIMARK collar for cable ties 30 halogenfree	transparent	30.0	200	1
Suitable labels					
83254680	FLEXIMARK Label LMB 69-4.7 YEWH	white/yellow	30.0	460	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Software 10.0 refer to page 877
- TY - FAST® standard cable ties refer to page 955

FLEXIMARK® Flexilabel LFL



Design

- MINI pre-assembled character holders PTEF/ CAB (from)
- MINI MLM mounting profile
- MINI PTE character-holders
- Printable on both sides

Benefits

- Printing fields can be printed with laser printer by using the FLEXIMARK® software, or marked with waterproof, permanent MS marker pens

Application range

- Easy to label
- Manufacturing of control cabinets and equipment

Approvals



Note

- Insert sheet in manual paper feed compartment



Info

- Sample labels are available upon request

Technical data



General

Resistant to chemicals, UV-light, moisture and some oils



Upon request

Other sizes are available upon request



Colour delivered

Standard colour: yellow/white



Material

Halogen-free polyester film, thickness: 0.175 mm



Temperature range

-40°C to +125°C

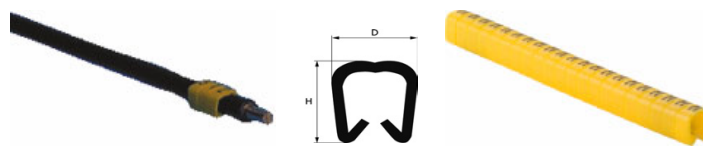
Article number	Article designation	Width x height (mm)	Labels per side	Contents (unit)	PU
LFL Flexilabel - MINI					
83254650	FLEXIMARK Label LFL 9.5-17.5 YEWH	17.5 x 9.5	352	3,520	1
83254660	FLEXIMARK Label LFL 9.5-28 YEWH	28.0 x 9.5	224	2,240	1
83254670	FLEXIMARK Label LFL 9.5-35 YEWH	35.0 x 9.5	150	1,500	1
83254701	FLEXIMARK Label LFL 9.9-66 CYB YEWH	70.0 x 9.5	84	840	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Software 10.0 refer to page 877
- FLEXIMARK® Character holders MINI refer to page 866
- FLEXIMARK® Character holders PTEF/ CAB refer to page 867
- FLEXIMARK® Character holders PGS - MINI refer to page 868

Marking rings PC



Technical data

- Approvals
UL 94 V0
- Note
Resistant; self-extinguishing
- Colour delivered
yellow
- Material
Cadmium-free hard PVC
- Temperature range
-30 °C to +70 °C

Application range

Marking rings PC 10

- These open collars are suitable for labelling cables before and after installation.
- They can be clipped onto the cable easily and quickly.
- The shape ensures secure fixation to the cable, while the anti-rotation feature allows for a secure combination marking.
- Marking after assembly

Approvals



Article number	Article designation	Width x height (mm)	Sleeve length (mm)	Area of application Ø (mm)	Contents (unit)
PC 10					
61820900	PC 10 / O	3.7 x 3.6	3	2.4 - 3.0	200
61820910	PC 10 / 1	3.7 x 3.6	3	2.4 - 3.0	200
61820920	PC 10 / 2	3.7 x 3.6	3	2.4 - 3.0	200
61820930	PC 10 / 3	3.7 x 3.6	3	2.4 - 3.0	200
61820940	PC 10 / 4	3.7 x 3.6	3	2.4 - 3.0	200
61820950	PC 10 / 5	3.7 x 3.6	3	2.4 - 3.0	200
61820960	PC 10 / 6	3.7 x 3.6	3	2.4 - 3.0	200
61820970	PC 10 / 7	3.7 x 3.6	3	2.4 - 3.0	200
61820980	PC 10 / 8	3.7 x 3.6	3	2.4 - 3.0	200
61820990	PC 10 / 9	3.7 x 3.6	3	2.4 - 3.0	200
61821000	PC 10 / blank	3.7 x 3.6	3	2.4 - 3.0	200
61821010	PC 10 / A	3.7 x 3.6	3	2.4 - 3.0	200
61821020	PC 10 / B	3.7 x 3.6	3	2.4 - 3.0	200
61821030	PC 10 / C	3.7 x 3.6	3	2.4 - 3.0	200
61821040	PC 10 / D	3.7 x 3.6	3	2.4 - 3.0	200
61821050	PC 10 / E	3.7 x 3.6	3	2.4 - 3.0	200
61821060	PC 10 / F	3.7 x 3.6	3	2.4 - 3.0	200
61821070	PC 10 / G	3.7 x 3.6	3	2.4 - 3.0	200
61821080	PC 10 / H	3.7 x 3.6	3	2.4 - 3.0	200
61821090	PC 10 / I	3.7 x 3.6	3	2.4 - 3.0	200
61821100	PC 10 / J	3.7 x 3.6	3	2.4 - 3.0	200
61821110	PC 10 / K	3.7 x 3.6	3	2.4 - 3.0	200
61821120	PC 10 / L	3.7 x 3.6	3	2.4 - 3.0	200
61821130	PC 10 / M	3.7 x 3.6	3	2.4 - 3.0	200
61821140	PC 10 / N	3.7 x 3.6	3	2.4 - 3.0	200
61821150	PC 10 / O	3.7 x 3.6	3	2.4 - 3.0	200
61821160	PC 10 / P	3.7 x 3.6	3	2.4 - 3.0	200
61821170	PC 10 / Q	3.7 x 3.6	3	2.4 - 3.0	200
61821180	PC 10 / R	3.7 x 3.6	3	2.4 - 3.0	200
61821190	PC 10 / S	3.7 x 3.6	3	2.4 - 3.0	200
61821200	PC 10 / T	3.7 x 3.6	3	2.4 - 3.0	200
61821210	PC 10 / U	3.7 x 3.6	3	2.4 - 3.0	200
61821220	PC 10 / V	3.7 x 3.6	3	2.4 - 3.0	200
61821230	PC 10 / W	3.7 x 3.6	3	2.4 - 3.0	200
61821240	PC 10 / X	3.7 x 3.6	3	2.4 - 3.0	200
61821250	PC 10 / Y	3.7 x 3.6	3	2.4 - 3.0	200
61821260	PC 10 / Z	3.7 x 3.6	3	2.4 - 3.0	200
61821270	PC 10 / /	3.7 x 3.6	3	2.4 - 3.0	200
61821280	PC 10 / .	3.7 x 3.6	3	2.4 - 3.0	200
61821290	PC 10 / ,	3.7 x 3.6	3	2.4 - 3.0	200
61821300	PC 10 / :	3.7 x 3.6	3	2.4 - 3.0	200
61821310	PC 10 / =	3.7 x 3.6	3	2.4 - 3.0	200
61821320	PC 10 / earth	3.7 x 3.6	3	2.4 - 3.0	200
61821360	PC 10 / +	3.7 x 3.6	3	2.4 - 3.0	200
61821370	PC 10 / -	3.7 x 3.6	3	2.4 - 3.0	200
61821380	PC 10 / ~	3.7 x 3.6	3	2.4 - 3.0	200
PC 20					
61821400	PC 20 / 0	4.5 x 4.2	3	3.0 - 4.0	200
61821410	PC 20 / 1	4.5 x 4.2	3	3.0 - 4.0	200
61821420	PC 20 / 2	4.5 x 4.2	3	3.0 - 4.0	200
61821430	PC 20 / 3	4.5 x 4.2	3	3.0 - 4.0	200
61821440	PC 20 / 4	4.5 x 4.2	3	3.0 - 4.0	200
61821450	PC 20 / 5	4.5 x 4.2	3	3.0 - 4.0	200
61821460	PC 20 / 6	4.5 x 4.2	3	3.0 - 4.0	200
61821470	PC 20 / 7	4.5 x 4.2	3	3.0 - 4.0	200
61821480	PC 20 / 8	4.5 x 4.2	3	3.0 - 4.0	200
61821490	PC 20 / 9	4.5 x 4.2	3	3.0 - 4.0	200
61821500	PC 20 / blank	4.5 x 4.2	3	3.0 - 4.0	200
61821510	PC 20 / A	4.5 x 4.2	3	3.0 - 4.0	200
61821520	PC 20 / B	4.5 x 4.2	3	3.0 - 4.0	200
61821530	PC 20 / C	4.5 x 4.2	3	3.0 - 4.0	200
61821540	PC 20 / D	4.5 x 4.2	3	3.0 - 4.0	200
61821550	PC 20 / E	4.5 x 4.2	3	3.0 - 4.0	200
61821560	PC 20 / F	4.5 x 4.2	3	3.0 - 4.0	200
61821570	PC 20 / G	4.5 x 4.2	3	3.0 - 4.0	200
61821580	PC 20 / H	4.5 x 4.2	3	3.0 - 4.0	200
61821590	PC 20 / I	4.5 x 4.2	3	3.0 - 4.0	200
61821600	PC 20 / J	4.5 x 4.2	3	3.0 - 4.0	200
61821610	PC 20 / K	4.5 x 4.2	3	3.0 - 4.0	200
61821620	PC 20 / L	4.5 x 4.2	3	3.0 - 4.0	200
61821630	PC 20 / M	4.5 x 4.2	3	3.0 - 4.0	200
61821640	PC 20 / N	4.5 x 4.2	3	3.0 - 4.0	200
61821650	PC 20 / O	4.5 x 4.2	3	3.0 - 4.0	200
61821660	PC 20 / P	4.5 x 4.2	3	3.0 - 4.0	200
61821670	PC 20 / Q	4.5 x 4.2	3	3.0 - 4.0	200
61821680	PC 20 / R	4.5 x 4.2	3	3.0 - 4.0	200
61821690	PC 20 / S	4.5 x 4.2	3	3.0 - 4.0	200
61821700	PC 20 / T	4.5 x 4.2	3	3.0 - 4.0	200
61821710	PC 20 / U	4.5 x 4.2	3	3.0 - 4.0	200
61821720	PC 20 / V	4.5 x 4.2	3	3.0 - 4.0	200
61821730	PC 20 / W	4.5 x 4.2	3	3.0 - 4.0	200

Single core marking

Marking rings and sleeves

Article number	Article designation	Width x height (mm)	Sleeve length (mm)	Area of application Ø (mm)	Contents (unit)
61821740	PC 20 / X	4.5 x 4.2	3	3.0 - 4.0	200
61821750	PC 20 / Y	4.5 x 4.2	3	3.0 - 4.0	200
61821760	PC 20 / Z	4.5 x 4.2	3	3.0 - 4.0	200
61821770	PC 20 / /	4.5 x 4.2	3	3.0 - 4.0	200
61821780	PC 20 / .	4.5 x 4.2	3	3.0 - 4.0	200
61821790	PC 20 / ,	4.5 x 4.2	3	3.0 - 4.0	200
61821800	PC 20 / :	4.5 x 4.2	3	3.0 - 4.0	200
61821810	PC 20 / =	4.5 x 4.2	3	3.0 - 4.0	200
61821820	PC 20/earth	4.5 x 4.2	3	3.0 - 4.0	200
61821860	PC 20 / +	4.5 x 4.2	3	3.0 - 4.0	200
61821870	PC 20 / -	4.5 x 4.2	3	3.0 - 4.0	200
61821880	PC 20 / ~	4.5 x 4.2	3	3.0 - 4.0	200
PC 30					
61821900	PC 30 / 0	5.7 x 5.5	3	4.0 - 5.0	200
61821910	PC 30 / 1	5.7 x 5.5	3	4.0 - 5.0	200
61821920	PC 30 / 2	5.7 x 5.5	3	4.0 - 5.0	200
61821930	PC 30 / 3	5.7 x 5.5	3	4.0 - 5.0	200
61821940	PC 30 / 4	5.7 x 5.5	3	4.0 - 5.0	200
61821950	PC 30 / 5	5.7 x 5.5	3	4.0 - 5.0	200
61821960	PC 30 / 6	5.7 x 5.5	3	4.0 - 5.0	200
61821970	PC 30 / 7	5.7 x 5.5	3	4.0 - 5.0	200
61821980	PC 30 / 8	5.7 x 5.5	3	4.0 - 5.0	200
61821990	PC 30 / 9	5.7 x 5.5	3	4.0 - 5.0	200
61822000	PC 30/blank	5.7 x 5.5	3	4.0 - 5.0	200
61822010	PC 30 / A	5.7 x 5.5	3	4.0 - 5.0	200
61822020	PC 30 / B	5.7 x 5.5	3	4.0 - 5.0	200
61822030	PC 30 / C	5.7 x 5.5	3	4.0 - 5.0	200
61822040	PC 30 / D	5.7 x 5.5	3	4.0 - 5.0	200
61822050	PC 30 / E	5.7 x 5.5	3	4.0 - 5.0	200
61822060	PC 30 / F	5.7 x 5.5	3	4.0 - 5.0	200
61822070	PC 30 / G	5.7 x 5.5	3	4.0 - 5.0	200
61822080	PC 30 / H	5.7 x 5.5	3	4.0 - 5.0	200
61822090	PC 30 / I	5.7 x 5.5	3	4.0 - 5.0	200
61822100	PC 30 / J	5.7 x 5.5	3	4.0 - 5.0	200
61822110	PC 30 / K	5.7 x 5.5	3	4.0 - 5.0	200
61822120	PC 30 / L	5.7 x 5.5	3	4.0 - 5.0	200
61822130	PC 30 / M	5.7 x 5.5	3	4.0 - 5.0	200
61822140	PC 30 / N	5.7 x 5.5	3	4.0 - 5.0	200
61822150	PC 30 / O	5.7 x 5.5	3	4.0 - 5.0	200
61822160	PC 30 / P	5.7 x 5.5	3	4.0 - 5.0	200
61822170	PC 30 / Q	5.7 x 5.5	3	4.0 - 5.0	200
61822180	PC 30 / R	5.7 x 5.5	3	4.0 - 5.0	200
61822190	PC 30 / S	5.7 x 5.5	3	4.0 - 5.0	200
61822200	PC 30 / T	5.7 x 5.5	3	4.0 - 5.0	200
61822210	PC 30 / U	5.7 x 5.5	3	4.0 - 5.0	200
61822220	PC 30 / V	5.7 x 5.5	3	4.0 - 5.0	200
61822230	PC 30 / W	5.7 x 5.5	3	4.0 - 5.0	200
61822240	PC 30 / X	5.7 x 5.5	3	4.0 - 5.0	200
61822250	PC 30 / Y	5.7 x 5.5	3	4.0 - 5.0	200
61822260	PC 30 / Z	5.7 x 5.5	3	4.0 - 5.0	200
61822270	PC 30 / /	5.7 x 5.5	3	4.0 - 5.0	200
61822280	PC 30 / .	5.7 x 5.5	3	4.0 - 5.0	200
61822290	PC 30 / ,	5.7 x 5.5	3	4.0 - 5.0	200
61822300	PC 30 / :	5.7 x 5.5	3	4.0 - 5.0	200
61822310	PC 30 / =	5.7 x 5.5	3	4.0 - 5.0	200
61822320	PC 30/earth	5.7 x 5.5	3	4.0 - 5.0	200
61822360	PC 30 / +	5.7 x 5.5	3	4.0 - 5.0	200
61822370	PC 30 / -	5.7 x 5.5	3	4.0 - 5.0	200
61822380	PC 30 / ~	5.7 x 5.5	3	4.0 - 5.0	200
PC 40					
61822400	PC 40 / 0	6.9 x 6.7	4	5.0 - 6.2	200
61822410	PC 40 / 1	6.9 x 6.7	4	5.0 - 6.2	200
61822420	PC 40 / 2	6.9 x 6.7	4	5.0 - 6.2	200
61822430	PC 40 / 3	6.9 x 6.7	4	5.0 - 6.2	200
61822440	PC 40 / 4	6.9 x 6.7	4	5.0 - 6.2	200
61822450	PC 40 / 5	6.9 x 6.7	4	5.0 - 6.2	200
61822460	PC 40 / 6	6.9 x 6.7	4	5.0 - 6.2	200
61822470	PC 40 / 7	6.9 x 6.7	4	5.0 - 6.2	200
61822480	PC 40 / 8	6.9 x 6.7	4	5.0 - 6.2	200
61822490	PC 40 / 9	6.9 x 6.7	4	5.0 - 6.2	200
61822500	PC 40/blank	6.9 x 6.7	4	5.0 - 6.2	200
61822510	PC 40 / A	6.9 x 6.7	4	5.0 - 6.2	200
61822520	PC 40 / B	6.9 x 6.7	4	5.0 - 6.2	200
61822530	PC 40 / C	6.9 x 6.7	4	5.0 - 6.2	200
61822540	PC 40 / D	6.9 x 6.7	4	5.0 - 6.2	200
61822550	PC 40 / E	6.9 x 6.7	4	5.0 - 6.2	200
61822560	PC 40 / F	6.9 x 6.7	4	5.0 - 6.2	200
61822570	PC 40 / G	6.9 x 6.7	4	5.0 - 6.2	200
61822580	PC 40 / H	6.9 x 6.7	4	5.0 - 6.2	200
61822590	PC 40 / I	6.9 x 6.7	4	5.0 - 6.2	200
61822600	PC 40 / J	6.9 x 6.7	4	5.0 - 6.2	200
61822610	PC 40 / K	6.9 x 6.7	4	5.0 - 6.2	200
61822620	PC 40 / L	6.9 x 6.7	4	5.0 - 6.2	200
61822630	PC 40 / M	6.9 x 6.7	4	5.0 - 6.2	200
61822640	PC 40 / N	6.9 x 6.7	4	5.0 - 6.2	200
61822650	PC 40 / O	6.9 x 6.7	4	5.0 - 6.2	200
61822660	PC 40 / P	6.9 x 6.7	4	5.0 - 6.2	200
61822670	PC 40 / Q	6.9 x 6.7	4	5.0 - 6.2	200
61822680	PC 40 / R	6.9 x 6.7	4	5.0 - 6.2	200
61822690	PC 40 / S	6.9 x 6.7	4	5.0 - 6.2	200
61822700	PC 40 / T	6.9 x 6.7	4	5.0 - 6.2	200
61822710	PC 40 / U	6.9 x 6.7	4	5.0 - 6.2	200
61822720	PC 40 / V	6.9 x 6.7	4	5.0 - 6.2	200
61822730	PC 40 / W	6.9 x 6.7	4	5.0 - 6.2	200
61822740	PC 40 / X	6.9 x 6.7	4	5.0 - 6.2	200
61822750	PC 40 / Y	6.9 x 6.7	4	5.0 - 6.2	200
61822760	PC 40 / Z	6.9 x 6.7	4	5.0 - 6.2	200
61822770	PC 40 / /	6.9 x 6.7	4	5.0 - 6.2	200
61822780	PC 40 / .	6.9 x 6.7	4	5.0 - 6.2	200
61822790	PC 40 / ,	6.9 x 6.7	4	5.0 - 6.2	200
61822800	PC 40 / :	6.9 x 6.7	4	5.0 - 6.2	200
61822810	PC 40 / =	6.9 x 6.7	4	5.0 - 6.2	200
61822820	PC 40/earth	6.9 x 6.7	4	5.0 - 6.2	200
61822860	PC 40 / +	6.9 x 6.7	4	5.0 - 6.2	200
61822870	PC 40 / -	6.9 x 6.7	4	5.0 - 6.2	200
61822880	PC 40 / ~	6.9 x 6.7	4	5.0 - 6.2	200

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

For current information see: www.lappgroup.com

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

PCG Mounting tools

Application range

- PCG 10-20 and PCG 30-40 are tools to make installation easy in locations that are difficult to access.

Technical data

- Note**
L x W x D: 102 x 15 x 4 mm
- Material**
ABS plastic
- Temperature range**
-30 °C to +70 °C



Article number	Article designation	Colour	Suitable for:	Contents (unit)
61822900	Installation tool PCG 10-20/30-40	orange + yellow	PC 10, PC 20, PC 30, PC 40	1

Photographs are not to scale and do not represent detailed images of the respective products.
 Contents: roll, metre, unit, marker, label

Accessories

- Marking rings PC 10 refer to page 859

Storage box

Benefits

- Simple assignment
- With 18 storage compartments

Application range

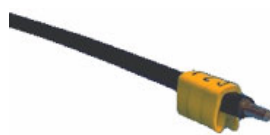
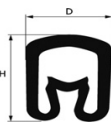
- PA marking rings
- PC marking rings



Article number	Article designation	Dimensions W x H x D (mm)	Contents (unit)
61794910	Storage box	250.0 x 46.0 x 170.0	1

Photographs are not to scale and do not represent detailed images of the respective products.
 Contents: roll, metre, unit, marker, label

Marking rings PA



Application range

Marking rings PA02

- Marking before assembly
- Due to its special profile with spring effects, the 4 different sizes can cover a range of cross-sections from 0.2 to 70 mm².
- The anti-rotation protection enables reliable combination marking.
- These closed collars are intended for cables that are not connected yet.

Approvals



Technical data



Approvals
UL 94 V0



Note
Resistant; self-extinguishing



Colour delivered
yellow



Material
Cadmium-free soft PVC



Temperature range
-30°C to +70°C

Article number	Article designation	Width x height (mm)	Sleeve length (mm)	Area of application Ø (mm)	Contents (unit)
PA 02					
61817800	PA 02 / 0	3.5 x 3.6	3	1.3 - 3.0	200
61817810	PA 02 / 1	3.5 x 3.6	3	1.3 - 3.0	200
61817820	PA 02 / 2	3.5 x 3.6	3	1.3 - 3.0	200
61817830	PA 02 / 3	3.5 x 3.6	3	1.3 - 3.0	200
61817840	PA 02 / 4	3.5 x 3.6	3	1.3 - 3.0	200
61817850	PA 02 / 5	3.5 x 3.6	3	1.3 - 3.0	200
61817860	PA 02 / 6	3.5 x 3.6	3	1.3 - 3.0	200
61817870	PA 02 / 7	3.5 x 3.6	3	1.3 - 3.0	200
61817880	PA 02 / 8	3.5 x 3.6	3	1.3 - 3.0	200
61817890	PA 02 / 9	3.5 x 3.6	3	1.3 - 3.0	200
61817900	PA 02 / blank	3.5 x 3.6	3	1.3 - 3.0	200
61817910	PA 02 / A	3.5 x 3.6	3	1.3 - 3.0	200
61817920	PA 02 / B	3.5 x 3.6	3	1.3 - 3.0	200
61817930	PA 02 / C	3.5 x 3.6	3	1.3 - 3.0	200
61817940	PA 02 / D	3.5 x 3.6	3	1.3 - 3.0	200
61817950	PA 02 / E	3.5 x 3.6	3	1.3 - 3.0	200
61817960	PA 02 / F	3.5 x 3.6	3	1.3 - 3.0	200
61817970	PA 02 / G	3.5 x 3.6	3	1.3 - 3.0	200
61817980	PA 02 / H	3.5 x 3.6	3	1.3 - 3.0	200
61817990	PA 02 / I	3.5 x 3.6	3	1.3 - 3.0	200
61818000	PA 02 / J	3.5 x 3.6	3	1.3 - 3.0	200
61818011	PA 02 / K	3.5 x 3.6	3	1.3 - 3.0	200
61818020	PA 02 / L	3.5 x 3.6	3	1.3 - 3.0	200
61818030	PA 02 / M	3.5 x 3.6	3	1.3 - 3.0	200
61818040	PA 02 / N	3.5 x 3.6	3	1.3 - 3.0	200
61818050	PA 02 / O	3.5 x 3.6	3	1.3 - 3.0	200
61818060	PA 02 / P	3.5 x 3.6	3	1.3 - 3.0	200
61818070	PA 02 / Q	3.5 x 3.6	3	1.3 - 3.0	200
61818080	PA 02 / R	3.5 x 3.6	3	1.3 - 3.0	200
61818090	PA 02 / S	3.5 x 3.6	3	1.3 - 3.0	200
61819100	PA 02 / T	3.5 x 3.6	3	1.3 - 3.0	200
61819110	PA 02 / U	3.5 x 3.6	3	1.3 - 3.0	200
61819120	PA 02 / V	3.5 x 3.6	3	1.3 - 3.0	200
61819130	PA 02 / W	3.5 x 3.6	3	1.3 - 3.0	200
61819140	PA 02 / X	3.5 x 3.6	3	1.3 - 3.0	200
61819150	PA 02 / Y	3.5 x 3.6	3	1.3 - 3.0	200
61819160	PA 02 / Z	3.5 x 3.6	3	1.3 - 3.0	200
61819170	PA 02 / /	3.5 x 3.6	3	1.3 - 3.0	200
61819180	PA 02 / .	3.5 x 3.6	3	1.3 - 3.0	200
61819190	PA 02 / ,	3.5 x 3.6	3	1.3 - 3.0	200
61819200	PA 02 / :	3.5 x 3.6	3	1.3 - 3.0	200
61819210	PA 02 / =	3.5 x 3.6	3	1.3 - 3.0	200
61819220	PA 02 / earth	3.5 x 3.6	3	1.3 - 3.0	200
61819260	PA 02 / +	3.5 x 3.6	3	1.3 - 3.0	200
61819270	PA 02 / -	3.5 x 3.6	3	1.3 - 3.0	200
61819280	PA 02 / ~	3.5 x 3.6	3	1.3 - 3.0	200
PA 1					
61819300	PA 1 / 0	4.2 x 5.5	3	2.5 - 5.0	200
61819310	PA 1 / 1	4.2 x 5.5	3	2.5 - 5.0	200
61819320	PA 1 / 2	4.2 x 5.5	3	2.5 - 5.0	200
61819330	PA 1 / 3	4.2 x 5.5	3	2.5 - 5.0	200
61819360	PA 1 / 6	4.2 x 5.5	3	2.5 - 5.0	200
61819340	PA 1 / 4	4.2 x 5.5	3	2.5 - 5.0	200
61819350	PA 1 / 5	4.2 x 5.5	3	2.5 - 5.0	200
61819370	PA 1 / 7	4.2 x 5.5	3	2.5 - 5.0	200
61819380	PA 1 / 8	4.2 x 5.5	3	2.5 - 5.0	200
61819390	PA 1 / 9	4.2 x 5.5	3	2.5 - 5.0	200
61819400	PA 1 / blank	4.2 x 5.5	3	2.5 - 5.0	200
61819410	PA 1 / A	4.2 x 5.5	3	2.5 - 5.0	200
61819420	PA 1 / B	4.2 x 5.5	3	2.5 - 5.0	200
61819430	PA 1 / C	4.2 x 5.5	3	2.5 - 5.0	200
61819440	PA 1 / D	4.2 x 5.5	3	2.5 - 5.0	200
61819450	PA 1 / E	4.2 x 5.5	3	2.5 - 5.0	200
61819460	PA 1 / F	4.2 x 5.5	3	2.5 - 5.0	200
61819470	PA 1 / G	4.2 x 5.5	3	2.5 - 5.0	200
61819480	PA 1 / H	4.2 x 5.5	3	2.5 - 5.0	200
61819490	PA 1 / I	4.2 x 5.5	3	2.5 - 5.0	200
61819500	PA 1 / J	4.2 x 5.5	3	2.5 - 5.0	200
61819510	PA 1 / K	4.2 x 5.5	3	2.5 - 5.0	200
61819520	PA 1 / L	4.2 x 5.5	3	2.5 - 5.0	200
61819530	PA 1 / M	4.2 x 5.5	3	2.5 - 5.0	200
61819540	PA 1 / N	4.2 x 5.5	3	2.5 - 5.0	200
61819550	PA 1 / O	4.2 x 5.5	3	2.5 - 5.0	200
61819560	PA 1 / P	4.2 x 5.5	3	2.5 - 5.0	200
61819570	PA 1 / Q	4.2 x 5.5	3	2.5 - 5.0	200
61819580	PA 1 / R	4.2 x 5.5	3	2.5 - 5.0	200
61819590	PA 1 / S	4.2 x 5.5	3	2.5 - 5.0	200
61819600	PA 1 / T	4.2 x 5.5	3	2.5 - 5.0	200

Article number	Article designation	Width x height (mm)	Sleeve length (mm)	Area of application Ø (mm)	Contents (unit)
61819610	PA 1 / U	4.2 x 5.5	3	2.5 - 5.0	200
61819620	PA 1 / V	4.2 x 5.5	3	2.5 - 5.0	200
61819630	PA 1 / W	4.2 x 5.5	3	2.5 - 5.0	200
61819640	PA 1 / X	4.2 x 5.5	3	2.5 - 5.0	200
61819650	PA 1 / Y	4.2 x 5.5	3	2.5 - 5.0	200
61819660	PA 1 / Z	4.2 x 5.5	3	2.5 - 5.0	200
61819670	PA 1 / /	4.2 x 5.5	3	2.5 - 5.0	200
61819680	PA 1 / .	4.2 x 5.5	3	2.5 - 5.0	200
61819690	PA 1 / ,	4.2 x 5.5	3	2.5 - 5.0	200
61819700	PA 1 / :	4.2 x 5.5	3	2.5 - 5.0	200
61819710	PA 1 / =	4.2 x 5.5	3	2.5 - 5.0	200
61819720	PA 1 / earth	4.2 x 5.5	3	2.5 - 5.0	200
61819760	PA 1 / +	4.2 x 5.5	3	2.5 - 5.0	200
61819770	PA 1 / -	4.2 x 5.5	3	2.5 - 5.0	200
61819780	PA 1 / ~	4.2 x 5.5	3	2.5 - 5.0	200
PA 2					
61819800	PA 2 / 0	6.6 x 9.5	4	4.0 - 10.0	100
61819810	PA 2 / 1	6.6 x 9.5	4	4.0 - 10.0	100
61819820	PA 2 / 2	6.6 x 9.5	4	4.0 - 10.0	100
61819830	PA 2 / 3	6.6 x 9.5	4	4.0 - 10.0	100
61819840	PA 2 / 4	6.6 x 9.5	4	4.0 - 10.0	100
61819850	PA 2 / 5	6.6 x 9.5	4	4.0 - 10.0	100
61819860	PA 2 / 6	6.6 x 9.5	4	4.0 - 10.0	100
61819870	PA 2 / 7	6.6 x 9.5	4	4.0 - 10.0	100
61819880	PA 2 / 8	6.6 x 9.5	4	4.0 - 10.0	100
61819890	PA 2 / 9	6.6 x 9.5	4	4.0 - 10.0	100
61819900	PA 2 / blanko	6.6 x 9.5	4	4.0 - 10.0	100
61819910	PA 2 / A	6.6 x 9.5	4	4.0 - 10.0	100
61819920	PA 2 / B	6.6 x 9.5	4	4.0 - 10.0	100
61819930	PA 2 / C	6.6 x 9.5	4	4.0 - 10.0	100
61819940	PA 2 / D	6.6 x 9.5	4	4.0 - 10.0	100
61819950	PA 2 / E	6.6 x 9.5	4	4.0 - 10.0	100
61819960	PA 2 / F	6.6 x 9.5	4	4.0 - 10.0	100
61819970	PA 2 / G	6.6 x 9.5	4	4.0 - 10.0	100
61819980	PA 2 / H	6.6 x 9.5	4	4.0 - 10.0	100
61819990	PA 2 / I	6.6 x 9.5	4	4.0 - 10.0	100
61820000	PA 2 / J	6.6 x 9.5	4	4.0 - 10.0	100
61820010	PA 2 / K	6.6 x 9.5	4	4.0 - 10.0	100
61820020	PA 2 / L	6.6 x 9.5	4	4.0 - 10.0	100
61820030	PA 2 / M	6.6 x 9.5	4	4.0 - 10.0	100
61820040	PA 2 / N	6.6 x 9.5	4	4.0 - 10.0	100
61820050	PA 2 / O	6.6 x 9.5	4	4.0 - 10.0	100
61820060	PA 2 / P	6.6 x 9.5	4	4.0 - 10.0	100
61820070	PA 2 / Q	6.6 x 9.5	4	4.0 - 10.0	100
61820080	PA 2 / R	6.6 x 9.5	4	4.0 - 10.0	100
61820090	PA 2 / S	6.6 x 9.5	4	4.0 - 10.0	100
61820100	PA 2 / T	6.6 x 9.5	4	4.0 - 10.0	100
61820110	PA 2 / U	6.6 x 9.5	4	4.0 - 10.0	100
61820120	PA 2 / V	6.6 x 9.5	4	4.0 - 10.0	100
61820130	PA 2 / W	6.6 x 9.5	4	4.0 - 10.0	100
61820140	PA 2 / X	6.6 x 9.5	4	4.0 - 10.0	100
61820150	PA 2 / Y	6.6 x 9.5	4	4.0 - 10.0	100
61820160	PA 2 / Z	6.6 x 9.5	4	4.0 - 10.0	100
61820170	PA 2 / /	6.6 x 9.5	4	4.0 - 10.0	100
61820180	PA 2 / .	6.6 x 9.5	4	4.0 - 10.0	100
61820190	PA 2 / ,	6.6 x 9.5	4	4.0 - 10.0	100
61820200	PA 2 / :	6.6 x 9.5	4	4.0 - 10.0	100
61820210	PA 2 / =	6.6 x 9.5	4	4.0 - 10.0	100
61820220	PA 2 / earth	6.6 x 9.5	4	4.0 - 10.0	100
61820260	PA 2 / +	6.6 x 9.5	4	4.0 - 10.0	100
61820270	PA 2 / -	6.6 x 9.5	4	4.0 - 10.0	100
61820280	PA 2 / ~	6.6 x 9.5	4	4.0 - 10.0	100
PA 3					
61820300	PA 3 / 0	11.0 x 16.5	6	8.0 - 16.0	20
61820310	PA 3 / 1	11.0 x 16.5	6	8.0 - 16.0	20
61820320	PA 3 / 2	11.0 x 16.5	6	8.0 - 16.0	20
61820330	PA 3 / 3	11.0 x 16.5	6	8.0 - 16.0	20
61820340	PA 3 / 4	11.0 x 16.5	6	8.0 - 16.0	20
61820350	PA 3 / 5	11.0 x 16.5	6	8.0 - 16.0	20
61820360	PA 3 / 6	11.0 x 16.5	6	8.0 - 16.0	20
61820370	PA 3 / 7	11.0 x 16.5	6	8.0 - 16.0	20
61820380	PA 3 / 8	11.0 x 16.5	6	8.0 - 16.0	20
61820390	PA 3 / 9	11.0 x 16.5	6	8.0 - 16.0	20
61820400	PA 3 / blanc	11.0 x 16.5	6	8.0 - 16.0	20
61820410	PA 3 / A	11.0 x 16.5	6	8.0 - 16.0	20
61820420	PA 3 / B	11.0 x 16.5	6	8.0 - 16.0	20
61820430	PA 3 / C	11.0 x 16.5	6	8.0 - 16.0	20
61820440	PA 3 / D	11.0 x 16.5	6	8.0 - 16.0	20
61820450	PA 3 / E	11.0 x 16.5	6	8.0 - 16.0	20
61820460	PA 3 / F	11.0 x 16.5	6	8.0 - 16.0	20
61820470	PA 3 / G	11.0 x 16.5	6	8.0 - 16.0	20
61820480	PA 3 / H	11.0 x 16.5	6	8.0 - 16.0	20
61820490	PA 3 / I	11.0 x 16.5	6	8.0 - 16.0	20
61820500	PA 3 / J	11.0 x 16.5	6	8.0 - 16.0	20
61820510	PA 3 / K	11.0 x 16.5	6	8.0 - 16.0	20
61820520	PA 3 / L	11.0 x 16.5	6	8.0 - 16.0	20
61820530	PA 3 / M	11.0 x 16.5	6	8.0 - 16.0	20
61820540	PA 3 / N	11.0 x 16.5	6	8.0 - 16.0	20
61820550	PA 3 / O	11.0 x 16.5	6	8.0 - 16.0	20
61820560	PA 3 / P	11.0 x 16.5	6	8.0 - 16.0	20
61820570	PA 3 / Q	11.0 x 16.5	6	8.0 - 16.0	20
61820580	PA 3 / R	11.0 x 16.5	6	8.0 - 16.0	20
61820590	PA 3 / S	11.0 x 16.5	6	8.0 - 16.0	20
61820600	PA 3 / T	11.0 x 16.5	6	8.0 - 16.0	20
61820610	PA 3 / U	11.0 x 16.5	6	8.0 - 16.0	20
61820620	PA 3 / V	11.0 x 16.5	6	8.0 - 16.0	20
61820630	PA 3 / W	11.0 x 16.5	6	8.0 - 16.0	20
61820640	PA 3 / X	11.0 x 16.5	6	8.0 - 16.0	20
61820650	PA 3 / Y	11.0 x 16.5	6	8.0 - 16.0	20
61820660	PA 3 / Z	11.0 x 16.5	6	8.0 - 16.0	20
61820670	PA 3 / /	11.0 x 16.5	6	8.0 - 16.0	20
61820680	PA 3 / .	11.0 x 16.5	6	8.0 - 16.0	20
61820720	PA 3 / earth	11.0 x 16.5	6	8.0 - 16.0	20
61820760	PA 3 / +	11.0 x 16.5	6	8.0 - 16.0	20
61820770	PA 3 / -	11.0 x 16.5	6	8.0 - 16.0	20
61820780	PA 3 / ~	11.0 x 16.5	6	8.0 - 16.0	20

Photographs are not to scale and do not represent detailed images of the respective products.
 Contents: roll, metre, unit, marker, label

For current information see: www.lappgroup.com

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

PAD Mounting rod



■ Benefits

- The long cylindrical PAD mounting rod makes it easier to label stripped conductors, and reduces mounting time.

■ Application range

- Marking before assembly

Article number	Article designation	Up to cable diameter (mm)	Suitable for:	Contents (unit)
61822920	PAD 3 installation tool	3.1	PA 02	1
61822930	PAD 4 installation tool	3.5	PA 1	1
61822940	PAD 5 installation tool	4.5	PA 1	1

Photographs are not to scale and do not represent detailed images of the respective products.
 Contents: roll, metre, unit, marker, label

■ Accessories

- Marking rings PA02 refer to page 862

PAV Mounting tool



■ Benefits

- This U-shaped stainless steel mounting tool makes marking considerably easier.
- Marking rings can be mounted from both the left and right sides of the conductor

■ Application range

- Marking before assembly

Article number	Article designation	Up to cable diameter (mm)	Suitable for:	Contents (unit)
61822960	PAV 02 installation tool	3.0	PA 02	1
61822970	PAV 10 installation tool	4.0	PA 1	1

Photographs are not to scale and do not represent detailed images of the respective products.
 Contents: roll, metre, unit, marker, label

■ Accessories

- Marking rings PA02 refer to page 862

PT Marking sleeves



PT Marking sleeves

Benefits

- The flexible design of the sleeve allows it to be attached quickly and easily to the conductor.

Application range

- Marking before assembly
- This enclosed transparent sleeve with a label pocket is used to hold PF labels.
- The PT marking sleeve allows the PF label to be attached before or after installing the sleeve.
- The label is simply inserted into the sleeve.

Product features

- Resistant to gamma and UV-rays

Approvals



Design

- Cross-section: 0.25 to 75.0 mm²

Technical data



Note
Resistant to gamma and UV-rays; self-extinguishing



Material
Cadmium-free soft PVC



Temperature range
-30°C to +70°C

Article number	Article designation	Length x width x height (mm)	Area of application Ø (mm)	Suitable PF labels	Cable Ø (mm)	Contents (unit)
61823000	PT-02015	15 x 6.5 x 5.5	1.3 - 3.0	PF-10015	0.25 - 1.5	200
61823010	PT-10015	15 x 6.5 x 7	2.5 - 5.0	PF-10015	1.5 - 4	200
61823020	PT-20015	15 x 6.5 x 9.5	4.0 - 10.0	PF-10015	2.5 - 16	100
61823030	PT-30015	15 x 9.5 x 15	8.0 - 16.0	PF-10015	16 - 70	50
61823040	PT-02021	21 x 6.5 x 5.5	1.3 - 3.0	PFK 10021	0.25 - 1.5	200
61823050	PT-10021	21 x 6.5 x 7	2.5 - 5.0	PFK 10021	1.5 - 4	200
61823060	PT-20021	21 x 6.5 x 9.5	4.0 - 10.0	PFK 10021	2.5 - 16	100
61823070	PT-30021	21 x 9.5 x 15	8.0 - 16.0	PFK 10021	16 - 70	50

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Application range

- Marking before assembly
- The PF labels are suitable for the PT character-holders.

Product features

- Resistant to most solvents

Approvals



Technical data



General
Resistant to most solvents



Material
Halogen-free polyester film



Temperature range
-30°C to +120°C

PF Labels



Note

- A laser printer can be used to print the labels, which are easy to separate at the perforated edges.
- Printable on both sides

Article number	Article designation	Length x height (mm)	Labels per side	Pages/PU	Contents (unit)	PU
61823110	PF-10015	15.0 x 4.6	792	1	792	1
61823122	PFK 10021	21.0 x 4.6	396	1	396	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Character holders PTEF/ CAB refer to page 867
- PT Marking sleeves refer to page 865

FLEXIMARK® Marking Kit MINI



Application range

- Cable and component marking system
- Automotive industry
- Plant engineering

Approvals



Included

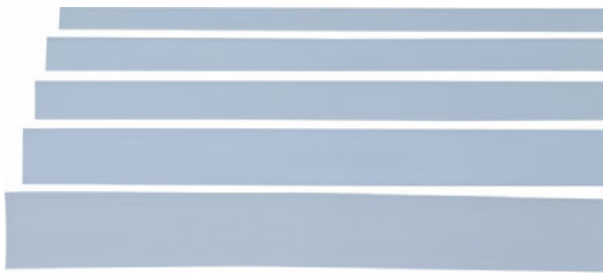
- Two character strips (alphabets, numbers, symbols, blank) with 10 markers for each character
- 40 locking-buttons, 20 end-pieces, 1 pair of special pliers (two alternatives), and one bag of cable ties
- Two 285 mm MINI PGS holders
- Seven (for PTE) or two (for SK) 285-mm pieces of the standard character holder

FLEXIMARK® Marking Kit MINI

Article number	Article designation	Contents (unit)
83252001	FLEXIMARK Marking Kit Mini FL5203 YE	1
83251996	FLEXIMARK Mini Box FL52A	1
83252002	FLEXIMARK case empty Mini FL5214GS	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

FLEXIMARK® Character holders MINI



Benefits

- For an overview of character-holders and suitable labels, refer to the overview of the FLEXIMARK® MINI labelling system (system list)

Application range

- MINI character-holders are suitable for holding text and character strips, printable LFL labels, and e.g. DYMO or Brother label strips
- E.g. cable/conduit marking
- Automotive industry
- Plant engineering

Approvals



Design

- With 2.6 mm cable ties (for outdoor applications, use UV-resistant cable ties) or fasten with screws and rivets when using end caps (only for MINI)
- SA (self-adhesive), standard MINI character-holder (type 9.5) in different lengths for smooth surfaces.
- PTE standard character-holder MINI (type 6 and 9.5) in different lengths.

Suitable tools

- FLEXIMARK® FL52 - ERA special hole pliers refer to page 868
- FLEXIMARK® FL 52A special hole pliers refer to page 868

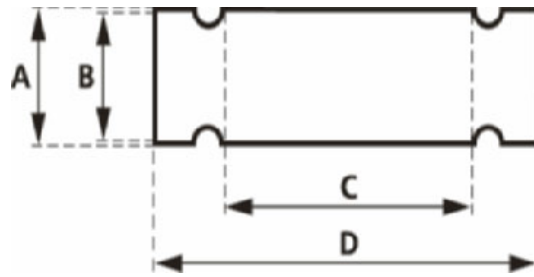
Technical data

	Note UV-filter protects the marking and guarantees durability
	Material Halogen-free PE
	Temperature range -75°C up to +80°C

Article number	Article designation	Length (mm)	Max. height of holder (mm)	Suitable tools	Contents (m)	PU
PTE standard character-holder - MINI						
83253012	FLEXIMARK Character Holder PTE 6-1000 TR	1,000.0	6.7	FL52 - ERA, FL 52 A	10	1
83259950	FLEXIMARK CharacterHolder PTE 6-10000 TR	10,000.0	6.7	FL52 - ERA, FL 52 A	1	1
83252081	FLEXIMARK CharacterHolder PTE 9.5-285 TR	285.0	9.5	FL52 - ERA, FL 52 A	10	1
83252084	FLEXIMARK CharacterHolder PTE 9.5-1000TR	1,000.0	9.5	FL52 - ERA, FL 52 A	10	1
83259951	FLEXIMARK CharacterHolder PTE9.5-10000TR	10,000.0	9.5	FL52 - ERA, FL 52 A	1	1
PTE standard character-holder - MAXI						
83252028	FLEXIMARK Character Holder PTE 12-285 TR	285.0	13.0	FL52 - ERA, FL 52 A	10	1
83252027	FLEXIMARK CharacterHolder PTE 12-1000 TR	1,000.0	13.0	FL52 - ERA, FL 52 A	10	1
83251060	FLEXIMARK Character Holder PTE 19-285 TR	285.0	19.8	FL 52 A	10	1
83251061	FLEXIMARK CharacterHolder PTE 19-1000 TR	1,000.0	19.8	FL 52 A	10	1
SA standard character-holder - MINI						
83252086	FLEXIMARK CharacterHolder PTES 9.5-285TR	285.0	9.5	FL 52 A	10	1
83252089	FLEXIMARK CharacterHolder SK 9.5-1000TR	1,000.0	9.5	FL 52 A	10	1
SA standard character-holder - MAXI						
83251063	FLEXIMARK CharacterHolder PTES 19-285 TR	285.0	19.8	FL 52 A	10	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

FLEXIMARK® Character holders PTEF/ CAB



FLEXIMARK® Character holders PTEF/ CAB

Benefits

- UV-filter protects the marking
- Guarantees durability

Application range

- Control cabinet manufacturing
- Plant engineering

Approvals



Note

- UV-resistant (black) cable ties should be used for outdoor applications
- Save on price, as you save on time for cutting

Design

- PC labels LFL are adapted to be pushed into different sizes of character-holder
- Fastening: by cable ties (2.4 mm) or fixing of the MINI character holders with screws and rivets when using FLG end stoppers

Technical data

Upon request
Other sizes are available upon request

Article number	Article designation	A mm	B in mm	C mm	D (mm)	Suitable flexi-labels	Contents (unit)	PU
PTEF character-holder - without cable tie								
83254960	FLEXIMARK CharacterHolder PTEF 9.5-18 TR	12.2	9.5	18.0	30.0	LFL-17P	50	1
83254961	FLEXIMARK CharacterHolder PTEF 9.5-28 TR	12.2	9.5	28.0	40.0	LFL-28P	50	1
83254963	FLEXIMARK CharacterHolder PTEF 9.5-58 TR	12.2	9.5	35.0	47.0	LFL-35P	50	1
83254962	FLEXIMARK CharacterHolder PTEF 9.5-38 TR	12.2	9.5	38.0	50.0	LFL-35P	50	1
83254964	FLEXIMARK CharacterHolder PTEF 9.5-58 TR	12.2	9.5	58.0	70.0	2 x LFL28P	50	1
83254965	FLEXIMARK CharacterHolder PTEF 9.5-70 TR	12.2	9.5	70.0	82.0	LFL-70P	50	1
83280006	FLEXIMARK Character holder PTEF 12-18	14.8	13.0	18.0	30.0		50	1
83254976	FLEXIMARK Character Holder PTEF 12-28 TR	14.8	13.0	28.0	40.0		50	1
83254977	FLEXIMARK Character Holder PTEF 12-38 TR	14.8	13.0	38.0	50.0		50	1
83254978	FLEXIMARK Character Holder PTEF 12-58 TR	14.8	13.0	58.0	70.0		50	1
CAB character-holder - with cable tie								
83259087	FLEXIMARK Character Holder CAB 9.5-18 TR	12.2	9.5	18.0	30.0	LFL-17P	50	1
83259084	FLEXIMARK Character Holder CAB 9.5-28 TR	12.2	9.5	28.0	40.0	LFL-28P	50	1
83259085	FLEXIMARK Character Holder CAB 9.5-38 TR	12.2	9.5	38.0	50.0	LFL-35P	50	1
83259086	FLEXIMARK Character Holder CAB 9.5-58 TR	12.2	9.5	58.0	70.0	2 x LFL28P	50	1
83259078	FLEXIMARK Character Holder CAB 12-18 TR	14.8	13.0	18.0	30.0		50	1
83259079	FLEXIMARK Character Holder CAB 12-28 TR	14.8	13.0	28.0	40.0		50	1
83259080	FLEXIMARK Character Holder CAB 12-38 TR	14.8	13.0	38.0	50.0		50	1
83259081	FLEXIMARK Character Holder CAB 12-58 TR	14.8	13.0	58.0	70.0		50	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- TY - FAST® standard cable ties refer to page 955

FLEXIMARK® FLG End plug / FLEXIMARK® FLKA Lock button



FLEXIMARK® FLG Endstöpsel

FLEXIMARK® FLKA Verschlussknopf

Benefits

FLEXIMARK® FLKA Lock button

- The buttons prevent the characters, labels and label strings from slipping out of the PTE standard character holders during tag plate mounting

FLEXIMARK® FLG End plug

- Protected against water and dirt
- End caps tightly seal the character-holders

- Hole for fastening the MINI standard character-holder PTE with screws or rivets, in particular.

Application range

- Installation accessories for character-holders

Approvals



Design

FLEXIMARK® FLG End plug

- Hole for fastening the MINI standard character-holder PTE with screws or rivets, in particular.

Article number	Article designation	Colour	Suitable for:	Contents (unit)	PU
83252005	FLEXIMARK Lock Button Mini FLKA 5206 YE	nature	MINI	500	1
83252020	FLEXIMARK End clamp Mini FLG 5242 YE	yellow	MINI	100	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

FLEXIMARK® FLKA Lock button

- FLEXIMARK® Marking Kit MINI refer to page 866

FLEXIMARK® FL52 - ERA special hole pliers



Benefits

- Function for a centred hole
- New puncher creates accurate hole-punching on cable ties

Application range

- Installation accessories for character-holders - special hole pliers

Product features

- The pliers can hold 6-12 mm character holders

Design

- Lightweight model suitable for all hand sizes
- Pocket-size

Included

- Single parts (cutting and punching device) can be exchanged

Article number	Article designation	Character holder	Contents (unit)
83252047	FLEXIMARK Plier FL52ERA	6 / 9.5 / 12	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Marking Kit MINI refer to page 866
- FLEXIMARK® Character holders MINI refer to page 866

FLEXIMARK® FL 52A special hole pliers



Application range

- Installation accessories for character-holders - special hole pliers
- Can also be used as a knife for shortening character carrier PGS and mounting profile MLM
- Cuts and punches MINI standard PTE character holders (6 to 25)

Product features

- The pliers can hold 6-25 mm character holders

Design

- Lightweight model suitable for all hand sizes
- Pocket-size

Included

- Single parts (cutting and punching device) can be exchanged

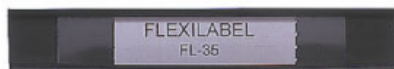
Article number	Article designation	Suitable for:	Contents (unit)
83252024	FLEXIMARK Plier FL52A	MINI	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Marking Kit MINI refer to page 866
- FLEXIMARK® Character holders MINI refer to page 866

FLEXIMARK® Character holders PGS - MINI



Benefits

- Assembly: snap the MINI character into the character holder from above

Application range

- Character holder + assembly profile
- For marking component groups in the manufacturing of control cabinets

Product features

- Fastening: bonding, or at temperatures > +45°C with screws or rivets

Approvals



Technical data

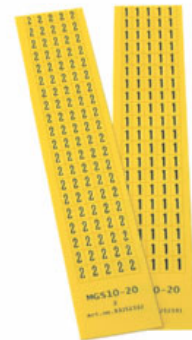
RAL	Colour delivered Black and white
	Material ABS plastic
	Temperature range -20 °C to +45 °C

Article number	Article designation	Colour	Length x height (mm)	Contents (unit)	PU
83252010	FLEXIMARK Character Holder PGS 10-285 WH	white	285.0 x 10.0	10	1
83250002	FLEXIMARK Character Holder PGS 10-285 BK	black	285.0 x 10.0	10	1
83250041	FLEXIMARK Label cover MT10-1000 MLM/PG TR	transparent	1,000.0 x 10.0	10	1
83252011	FLEXIMARK CharacterHolder PGS 10-1000 WH	white	1,000.0 x 10.0	10	1
83250003	FLEXIMARK CharacterHolder PGS 10-1000 BK	black	1,000.0 x 10.0	10	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

FLEXIMARK® Characters plastic MINI

FLEXIMARK® Characters strips plastic set MINI



FLEXIMARK® Characters plastic MINI

Benefits

FLEXIMARK® Characters plastic MINI

- Easy to label
- Efficient way of marking cables that are already installed

Application range

- Insert strips for MINI character holders

Product features

- First of all, slide the character strips into the character holders as far as the pre-folded bend and then break them off.

Approvals



Note

- Includes assembly aid

Technical data



Dimensions
FLEXIMARK® Characters plastic MINI
H x W: approx. 9.5 x 6 mm (MINI character)



Colour delivered
FLEXIMARK® Characters plastic MINI
Yellow with black lettering
White with black lettering (on request)



Material
FLEXIMARK® Characters plastic MINI
Hard PVC (thickness: 0.75 mm)



Temperature range
FLEXIMARK® Characters plastic MINI
-20°C to +65°C

Article number	Article designation	Contents (unit)	PU
MINI numbers			
83252330	FLEXIMARK Character Mini MGS10-20-0 YE	200	1
83252331	FLEXIMARK Character Mini MGS10-20-1 YE	200	1
83252332	FLEXIMARK Character Mini MGS10-20-2 YE	200	1
83252333	FLEXIMARK Character Mini MGS10-20-3 YE	200	1
83252334	FLEXIMARK Character Mini MGS10-20-4 YE	200	1
83252335	FLEXIMARK Character Mini MGS10-20-5 YE	200	1
83252336	FLEXIMARK Character Mini MGS10-20-6 YE	200	1
83252337	FLEXIMARK Character Mini MGS10-20-7 YE	200	1
83252338	FLEXIMARK Character Mini MGS10-20-8 YE	200	1
MINI letters			
83252300	FLEXIMARK Character Mini MGS10-20-A YE	200	1
83252301	FLEXIMARK Character Mini MGS10-20-B YE	200	1
83252302	FLEXIMARK Character Mini MGS10-20-C YE	200	1
83252303	FLEXIMARK Character Mini MGS10-20-D YE	200	1
83252304	FLEXIMARK Character Mini MGS10-20-E YE	200	1
83252305	FLEXIMARK Character Mini MGS10-20-F YE	200	1
83252306	FLEXIMARK Character Mini MGS10-20-G YE	200	1
83252307	FLEXIMARK Character Mini MGS10-20-H YE	200	1
83252308	FLEXIMARK Character Mini MGS10-20-I YE	200	1
83252309	FLEXIMARK Character Mini MGS10-20-J YE	200	1
83252310	FLEXIMARK Character Mini MGS10-20-K YE	200	1
83252311	FLEXIMARK Character Mini MGS10-20-L YE	200	1
83252312	FLEXIMARK Character Mini MGS10-20-M YE	200	1
83252313	FLEXIMARK Character Mini MGS10-20-N YE	200	1
83252314	FLEXIMARK Character Mini MGS10-20-O YE	200	1
83252315	FLEXIMARK Character Mini MGS10-20-P YE	200	1
83280000	FLEXIMARK Character Mini MGS10-20-Q YE	200	1
83252317	FLEXIMARK Character Mini MGS10-20-R YE	200	1
83252318	FLEXIMARK Character Mini MGS10-20-S YE	200	1
83252319	FLEXIMARK Character Mini MGS10-20-T YE	200	1
83252320	FLEXIMARK Character Mini MGS10-20-U YE	200	1
83252321	FLEXIMARK Character Mini MGS10-20-V YE	200	1
83280001	FLEXIMARK Character Mini MGS10-20-W YE	200	1
83252323	FLEXIMARK Character Mini MGS10-20-X YE	200	1
83252324	FLEXIMARK Character Mini MGS10-20-Y YE	200	1
83280002	FLEXIMARK Character Mini MGS10-20-Z YE	200	1
83252327	FLEXIMARK Character Mini MGS10-20-Å YE	200	1
83252328	FLEXIMARK Character Mini MGS10-20-Ö YE	200	1
83252340	FLEXIMARK Character Mini MGS10-20-Û YE	200	1
MINI symbols			
83252058	FLEXIMARK Character Mini MGS10-20-+ YE	200	1
83252059	FLEXIMARK Character Mini MGS10-20- - YE	200	1
83252055	FLEXIMARK Character Mini MGS10-20-EA YE	200	1
83252057	FLEXIMARK Character Mini MGS10-20-~ YE	200	1
83252056	FLEXIMARK Character Mini MGS10-20- = YE	200	1
83252061	FLEXIMARK Character Mini MGS10-20- . YE	200	1
83252062	FLEXIMARK Character Mini MGS10-20- / YE	200	1
83252060	FLEXIMARK Character Mini MGS10-20- : YE	200	1
83252076	FLEXIMARK Character Mini MGS10-20-x YE	200	1
83252101	FLEXIMARK Character Mini MGS10-20-blank YE	200	1
Plastic character strip set			
83250039	FLEXIMARK Character Mini 123-Pack YE	2,000	1
83259021	FLEXIMARK Character Mini ABC-Pack YE	5,200	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

FLEXIMARK® MINI/MAXI FCC Cable marking



■ Benefits

- Customised labelling system that is tailored to your specific requirements and application conditions
- Ready-made markers offer an effective and inexpensive marking option
- Products are sorted according to your specified order
- No time-consuming preparation and installation
- One or two-line printing

■ Application range

- Plant engineering
- Air-conditioning technology

■ Product features

- Marker size, colour (white, blue, green, red), font size, pre-assembly and packaging will be customised to your requirements
- Holder for up to 46 characters

■ Approvals



■ Note

- Fastening options:
- For plastic cable ties
- Customised data will be emailed as a ASCII file or Excel file to the responsible Lapp employee when the order is made

■ Included

- Markers (including cable ties) are pre-assembled prior to delivery



Info

- Coloured-printing service using inkjet or a print technology of your choice.

■ Technical data



Dimensions

Max. length approx. 200 mm



Caution

Coloured-printing service using inkjet or a print technology of your choice.



Note

Standard cable tie: natural (black on request)
Cable ties 142 x 4.2 mm



Colour delivered

Standard colour: black lettering against yellow background



Material

Character holder: halogen-free PE



Temperature range

-30 °C to +70 °C

Article number	Article designation	Colour	Height (mm)	PU
83251300	FLEXIMARK Cable marker FCC 6 YE	yellow	6.7	1
83251320	FLEXIMARK Cable marker FCC 9,5 YE	yellow	9.5	1
83251350	FLEXIMARK Cable marker FCC 19 YE	yellow	19.8	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

FLEXIMARK® SHRINK MARK FCC-FK Shrink tube marking



Info

- Coloured-printing service using inkjet or a print technology of your choice.



FLEXIMARK® SHRINK MARK FCC-FK Shrink tube marking

Benefits

- The shrinking tube segments are individually printed to customer specifications.
- Easy to label

Application range

- Cable and component marking system
- Automotive industry
- Machine and equipment manufacturing, control technology

Approvals



Note

- The following colours are available upon request:
blue, red, yellow, white

Design

- Customised data will be emailed as a ASCII file or Excel file to the responsible Lapp employee when the order is made

Technical data



Material
Polyolefine

Shrinking ratio
2:1



Temperature range
-55 °C to +125 °C

Article number	Article designation	Colour	Ø before shrinking (mm)	Ø after shrinking (mm)	Number of characters	Contents (unit)
83280029	SHRINK MARK FCC-FK 3,2	black	3.2	1.6	1-7	1
83280030	SHRINK MARK FCC-FK 3,2	black	3.2	1.6	8-12	1
83280031	SHRINK MARK FCC-FK 3,2	black	3.2	1.6	13-17	1
83280032	SHRINK MARK FCC-FK 4,8	black	4.8	2.4	1-7	1
83280033	SHRINK MARK FCC-FK 4,8	black	4.8	2.4	8-12	1
83280034	SHRINK MARK FCC-FK 4,8	black	4.8	2.4	13-17	1
83280035	SHRINK MARK FCC-FK 6,4	black	6.4	3.2	1-7	1
83280036	SHRINK MARK FCC-FK 6,4	black	6.4	3.2	8-12	1
83280037	SHRINK MARK FCC-FK 6,4	black	6.4	3.2	13-17	1
83280038	SHRINK MARK FCC-FK 9,5	black	9.5	4.7	1-7	1
83280039	SHRINK MARK FCC-FK 9,5	black	9.5	4.7	8-12	1
83280040	SHRINK MARK FCC-FK 9,5	black	9.5	4.7	13-17	1
83280041	SHRINK MARK FCC-FK 12,7	black	12.7	6.3	1-7	1
83280042	SHRINK MARK FCC-FK 12,7	black	12.7	6.3	8-12	1
83280043	SHRINK MARK FCC-FK 12,7	black	12.7	6.3	13-17	1
83280044	SHRINK MARK FCC-FK 19,1	black	19.1	9.5	1-7	1
83280045	SHRINK MARK FCC-FK 19,1	black	19.1	9.5	8-12	1
83280046	SHRINK MARK FCC-FK 19,1	black	19.1	9.5	13-17	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- HG 2310 LCD hot-air pistol refer to page 948

FLEXIMARK® Stainless steel kit



■ Benefits

- The basic equipment of the FLEXIMARK® stainless steel system in a handy box

■ Approvals



■ Included

- With special round pliers
- 1920 single characters (40 pieces for every alphabet A-Z, number 0-9, various symbols and blank strips)
- Five character holders with lengths of 286, 106, 82, 58 and 46 mm

Article number	Article designation	PU
83254220	FLEXIMARK Kit Stainless Steel	1
83280047	FLEXIMARK KitStainless Steel with plier	1

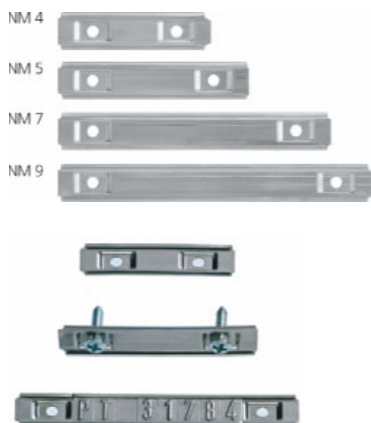
Photographs are not to scale and do not represent detailed images of the respective products.

Contents: roll, metre, unit, marker, label

■ Accessories

- FLEXIMARK® MR Stainless steel character refer to page 874

FLEXIMARK® NM Stainless steel - character holders



■ Benefits

- Cable and component marking system

■ Application range

- Outdoor applications

■ Product features

- Holder for up to 46 characters
- Character holder with counter-sunk fastener for steel cable ties and screw hole
- In five different sizes

■ Approvals



■ Design

- Screws and rivets (up to max. 3 mm Ø)
- Steel cable ties AE 601 up to 7 mm width
- Steel cable ties LS up to 7 mm width

■ Technical data

Z_∞ Info	Height: approx. 11 mm Screw hole Ø: 3 mm
Material	Acid-resistant stainless steel SS 2348 (AISI 316)
Temperature range	Max. temperature: +500 °C

Article number	Article designation	Length (mm)	Contents (unit)	Characters/unit	PU
83254214	FLEXIMARK Stainless Holder PR10 NM4	46.0	50	4	1
83254213	FLEXIMARK Stainless Holder PR10 NM5	58.0	50	8	1
83254212	FLEXIMARK Stainless Holder PR10 NM7	82.0	50	12	1
83254211	FLEXIMARK Stainless Holder PR10 NM9	106.0	50	16	1
83254210	FLEXIMARK Stainless Holder PR10 NM24	286.0	50	46	1

Photographs are not to scale and do not represent detailed images of the respective products.

Contents: roll, metre, unit, marker, label

■ Accessories

- FLEXIMARK® LD Steel cable tie refer to page 873
- LS steel cable ties refer to page 961

FLEXIMARK® ZT Stainless steel - character holders




■ Benefits

- Holder for up to 42 characters
- Character holder with hole profile

■ Product features

- Shorten character holder at one end only (e.g. with wire cutters), as otherwise the character strips can no longer be inserted.
- After the character strips have been inserted, the edges are pressed together with pliers so that they will not slip out.

■ Technical data

	Info Height: approx. 11 mm Screw hole Ø: 3 mm
	Material Acid-resistant stainless steel SS 2348 (AISI-316)
	Temperature range Max. temperature: +500 °C



■ Approvals



Article number	Article designation	Length (mm)	Number of characters	Contents (unit)	PU
83254101	FLEXIMARK Stainless Holder PR10 M24 42CH	286.0	42	50	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

FLEXIMARK® LD Steel cable tie



■ Application range

- Profile tie for fastening (width 7 mm) the NM stainless steel character holders

■ Approvals



■ Technical data

	Material Acid-resistant stainless steel SS 2348 (AISI 316)
	Temperature range Max. temperature: +500 °C



■ Suitable tools

- STEEL GUN HT-338 cable tie pliers refer to page 963

Article number	Article designation	Width x length (mm)	Bundling Ø (mm)	Minimum tensile strength (N/mm²)	Contents (unit)	PU
83280048	YLD-7-150-B	152.0 x 7.0	48.0	1,120.0	100	1

Other sizes are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

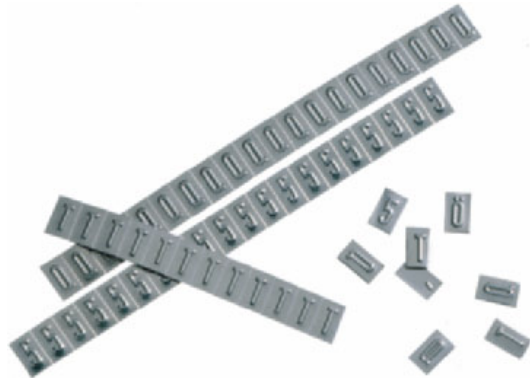
■ Accessories

- FLEXIMARK® NM Stainless steel - character holders refer to page 872

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

FLEXIMARK® MR Stainless steel character

FLEXIMARK® Stainless steel - character Set



FLEXIMARK® MR Stainless steel character

Benefits

- For assembly, the character strips are pushed either into the NM stainless steel character holders or into the ZT character holder (20 pre-stamped single characters per character strip)

Application range

FLEXIMARK® Stainless steel - character Set

- Plant engineering

Approvals



Design

FLEXIMARK® MR Stainless steel character

- MR stainless steel character strips are also available with Cyrillic characters upon request.

Technical data



General

FLEXIMARK® MR Stainless steel character
 Height x width: approx. 9.5 x 6 mm
 Character height: approx. 6.8 mm



Material

FLEXIMARK® MR Stainless steel character
 Acid-resistant stainless steel SS 2348 (AISI 316)



Temperature range

FLEXIMARK® MR Stainless steel character
 Max. temperature: +500 °C

Article number	Article designation	Contents (unit)	PU
Numbers			
83254179	FLEXIMARK Character Strip MR 10-20 1	200	1
83254180	FLEXIMARK Character Strip MR 10-20 2	200	1
83254181	FLEXIMARK Character Strip MR 10-20 3	200	1
83254182	FLEXIMARK Character Strip MR 10-20 4	200	1
83254183	FLEXIMARK Character Strip MR 10-20 5	200	1
83254184	FLEXIMARK Character Strip MR 10-20 6/9	200	1
83254185	FLEXIMARK Character Strip MR 10-20 7	200	1
83254186	FLEXIMARK Character Strip MR 10-20 8	200	1
Letters			
83254150	FLEXIMARK Character Strip MR 10-20 A	200	1
83254151	FLEXIMARK Character Strip MR 10-20 B	200	1
83254152	FLEXIMARK Character Strip MR 10-20 C	200	1
83254153	FLEXIMARK Character Strip MR 10-20 D	200	1
83254154	FLEXIMARK Character Strip MR 10-20 E	200	1
83254155	FLEXIMARK Character Strip MR 10-20 F	200	1
83254156	FLEXIMARK Character Strip MR 10-20 G	200	1
83254157	FLEXIMARK Character Strip MR 10-20 H	200	1
83254158	FLEXIMARK Character Strip MR 10-20 I	200	1
83254159	FLEXIMARK Character Strip MR 10-20 J	200	1
83254160	FLEXIMARK Character Strip MR 10-20 K	200	1
83254161	FLEXIMARK Character Strip MR 10-20 L	200	1
83254162	FLEXIMARK Character Strip MR 10-20 M	200	1
83254163	FLEXIMARK Character Strip MR 10-20 N	200	1
83254164	FLEXIMARK Character Strip MR 10-20 O/0	200	1
83254165	FLEXIMARK Character Strip MR 10-20 P	200	1
83254166	FLEXIMARK Character Strip MR 10-20 Q	200	1
83254167	FLEXIMARK Character Strip MR 10-20 R	200	1
83254168	FLEXIMARK Character Strip MR 10-20 S	200	1
83254169	FLEXIMARK Character Strip MR 10-20 T	200	1
83254170	FLEXIMARK Character Strip MR 10-20 U	200	1
83254171	FLEXIMARK Character Strip MR 10-20 V	200	1
83254172	FLEXIMARK Character Strip MR 10-20 W	200	1
83254173	FLEXIMARK Character Strip MR 10-20 X	200	1
83254174	FLEXIMARK Character Strip MR 10-20 Y	200	1
83254175	FLEXIMARK Character Strip MR 10-20 Z	200	1
83254177	FLEXIMARK Character Strip MR 10-20 Å	200	1
83254178	FLEXIMARK Character Strip MR 10-20 Ö	200	1
83254201	FLEXIMARK Character Strip MR 10-20 Ü	200	1
Symbols			
83254192	FLEXIMARK Character Strip MR 10-20 +	200	1
83254191	FLEXIMARK Character Strip MR 10-20 -	200	1
83254194	FLEXIMARK Character Strip MR 10-20 /	200	1
83254195	FLEXIMARK Character Strip MR 10-20 .	200	1
83254199	FLEXIMARK Character Strip MR 10-20 :	200	1
83254198	FLEXIMARK Character Strip MR 10-20 ~	200	1
83254193	FLEXIMARK Character Strip MR 10-20 =	200	1
83254200	FLEXIMARK Character Strip MR 10-20 Earth	200	1
83254196	FLEXIMARK Character Strip MR 10-20 .	200	1
83254202	FLEXIMARK Character Strip MR 10-20 (200	1
83254189	FLEXIMARK Character Strip MR 10-20P blank	200	1
Sets			
83254122	FLEXIMARK Character strip MR SET 0-9	200	1
83254120	FLEXIMARK Character strip MR SET A-Z	2600	1

Photographs are not to scale and do not represent detailed images of the respective products.
 Contents: roll, metre, unit, marker, label

FLEXIMARK® Stainless steel FCC



FLEXIMARK® Stainless steel FCC

Benefits

- Customised stainless steel cable labelling
- Signplates are sorted prior to delivery
- No time-consuming preparation and installation

Approvals



Design

- Order process
- Customised data will be emailed as a ASCII file or Excel file to the responsible Lapp employee when the order is made

Design

- Type A
- For fastening with cable ties (LS) up to a width of 7 mm
- Also available with pre-assembled cable tie (L x W = 200 x 4.6)

Suitable tools

- STEEL GUN HT-338 cable tie pliers refer to page 963

Technical data

- General**
Character size (height x width): 4.5 x 3.25 mm
Marker size: 10/14 mm height
- Material**
Acid-resistant stainless steel SS 2348 (AISI-316)
- Temperature range**
Max. temperature: +500 °C

Article number	Article designation	Height (mm)	Design	Number of characters	Contents (unit)
One line embossing / with cable tie brackets					
83251406	FLEXIMARK Stainless marker SMC FSBT200 0-15 FCC	10.0	with cable tie	0-15	1
83251456	FLEXIMARK Stainless marker SMC FSBT200 16-25 FCC	10.0	with cable tie	16-25	1
83251402	FLEXIMARK Cable marker SMC 0-15	10.0	without cable tie	0-15	1
83251454	FLEXIMARK Stainless marker FCC SMC 16-25 FCC	10.0	without cable tie	16-25	1
One line embossing / with screw hole					
83251450	FLEXIMARK Stainless marker SM 0-15 FCC	10.0	with screw hole	0-15	1
83251478	FLEXIMARK Marker SM 16-25 stainless steel	10.0	with screw hole	16-25	1
Two-line embossing / with cable tie brackets*					
83251426	FLEXIMARK Stainless marker SMC2R FSBT2000-15 FCC	14.0	with cable tie	0-15	1
83251468	FLEXIMARK Stainless marker SMC2R FSBT20016-25 FCC	14.0	with cable tie	16-25	1
83251422	FLEXIMARK Stainless marker SMC2R 0-15 FCC	14.0	without cable tie	0-15	1
83251466	FLEXIMARK Stainless marker SMC2R 16-25 FCC	14.0	without cable tie	16-25	1
Two-line embossing / with screw hole					
83251451	FLEXIMARK Stainless marker SM2R 0-15 FCC	14.0	with screw hole	0-15	1
83251479	FLEXIMARK Marker SM2R 16-25 stainless steel	14.0	with screw hole	16-25	1

Blank signplates are available upon request; fasteners for cable ties are also available in concave design (standard: convex).
Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- LS steel cable ties refer to page 961



FLEXIMARK® Engraved markers BMK-FCC - component markers



Benefits

- The plates are freely configurable in terms of colour, number of text lines, self-adhesive or non-self-adhesive, plate size and number of holes.

Application range

- Automotive industry
- Components in switch cabinet construction

Approvals



Design

- Order process
- The Excel file must have the following structure:
- Column A = text for top row
- Column B = text for bottom row
- Column C = number of respective plate

Design

- Two-colour, customised engraved plates.

Technical data

	General Right/left horizontal holes
	Colour delivered Standard colour: black lettering on white plate
	Material PMMA (1.6 mm)
	Temperature range -40 °C to +80 °C

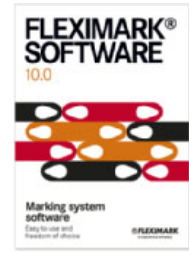
Article number	Article designation	Self-adhesive	Width x height (mm)	Text height (mm)	Number of text rows	Contents (unit)
Self-adhesive						
83264000	FLEXIMARK Engraved BMK 30-12 1-r RD FCC AD	yes	30.0 x 12.0	6.0	1	1
83264001	FLEXIMARK Engraved BMK 30-12 2-r RD FCC AD	yes	30.0 x 12.0	3.0	2	1
83264002	FLEXIMARK Engraved BMK 30-12 3-r RD FCC AD	yes	30.0 x 12.0	4.0	3	1
83264003	FLEXIMARK Engraved BMK 25-25 1-r RD FCC AD	yes	25.0 x 25.0	10.0	1	1
83264005	FLEXIMARK Engraved BMK 25-25 3-r RD FCC AD	yes	25.0 x 25.0	4.0	3	1
83264006	FLEXIMARK Engraved BMK 52-17 1-r RD FCC AD	yes	52.0 x 17.0	6.0	1	1
83264009	FLEXIMARK Engraved BMK 75-25 1-r RD FCC AD	yes	75.0 x 25.0	10.0	1	1
83264010	FLEXIMARK Engraved BMK 75-25 2-r RD FCC AD	yes	75.0 x 25.0	6.0	2	1
83264011	FLEXIMARK Engraved BMK 75-25 3-r RD FCC AD	yes	75.0 x 25.0	4.0	3	1
83264012	FLEXIMARK Engraved BMK 80-30 1-r RD FCC AD	yes	80.0 x 30.0	10.0	1	1
83264013	FLEXIMARK Engraved BMK 80-30 2-r RD FCC AD	yes	80.0 x 30.0	8.0	2	1
83264014	FLEXIMARK Engraved BMK 80-30 3-r RD FCC AD	yes	80.0 x 30.0	7.0	3	1
83264015	FLEXIMARK Engraved BMK 100-30 1-r RD FCC AD	yes	100.0 x 30.0	10.0	1	1
83264018	FLEXIMARK Engraved BMK 110-40 1-r RD FCC AD	yes	110.0 x 40.0	10.0	1	1
83264019	FLEXIMARK Engraved BMK 110-40 2-r RD FCC AD	yes	110.0 x 40.0	8.0	2	1
83264020	FLEXIMARK Engraved BMK 110-40 3-r RD FCC AD	yes	110.0 x 40.0	7.0	3	1
83264022	FLEXIMARK Engraved BMK 140-43 2-r RD FCC AD	yes	140.0 x 43.0	8.0	2	1
83264025	FLEXIMARK Engraved BMK 70-30 2-r RD FCC AD	yes	70.0 x 30.0	8.0	2	1
83264026	FLEXIMARK Engraved BMK 70-30 3-r RD FCC AD	yes	70.0 x 30.0	7.0	3	1
Not self-adhesive						
83264050	FLEXIMARK Engraved BMK 30-12 1-r RD FCC	no	30.0 x 12.0	6.0	1	1
83264053	FLEXIMARK Engraved BMK 25-25 1-r RD FCC	no	25.0 x 25.0	10.0	1	1
83264056	FLEXIMARK Engraved BMK 52-17 1-r RD FCC	no	52.0 x 17.0	6.0	1	1
83264058	FLEXIMARK Engraved BMK 52-17 3-r RD FCC	no	52.0 x 17.0	4.0	3	1
83264062	FLEXIMARK Engraved BMK 80-30 1-r RD FCC	no	80.0 x 30.0	10.0	1	1
83264065	FLEXIMARK Engraved BMK 100-30 1-r RD FCC	no	100.0 x 30.0	10.0	1	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

FLEXIMARK® Software 10.0

Info

- Marking software for FLEXIMARK® labels
- Download www.lappkabel.com - Service - Downloadcenter - Marking system FLEXIMARK®



FLEXIMARK® Software 10.0

Benefits

- New layout
- Integrated word processing
- Guide that leads to the right label
- Function keys for frequently used commands
- Self-explanatory installation

Application range

- Machine and equipment manufacturing, control technology
- Control cabinets and equipment wiring
- Automotive industry
- Building Installation
- FLEXIMARK® Software is the marking software that enables you to print all kinds of labels. It is especially suitable for FLEXIMARK® labels, which are already defined in this catalogue. With the FLEXIMARK® Software you can use all Microsoft® Windows options to print your labels: graphics, cliparts, fonts and font sizes. Integrated word processing will give you any desired result for your label text quickly and easily. You will be able to import data, store individual logos and apply bar codes easily.

Product features

- System requirements:
20 MB free hard disk space
Printer and driver for Microsoft® Windows 2000 or higher
- Possible to import from Microsoft® Windows applications or ASCII files (e.g. tables or graphs, logos)
- Zoom function from 25 % to 800 %
- Printer: laser, thermal transfer, dot-matrix
- Software is available in following languages: german, english, swedish and french

Note

- The full version is available for download free of charge, with a trial period of 30 days
- Light version is available for download free-of-charge

Design

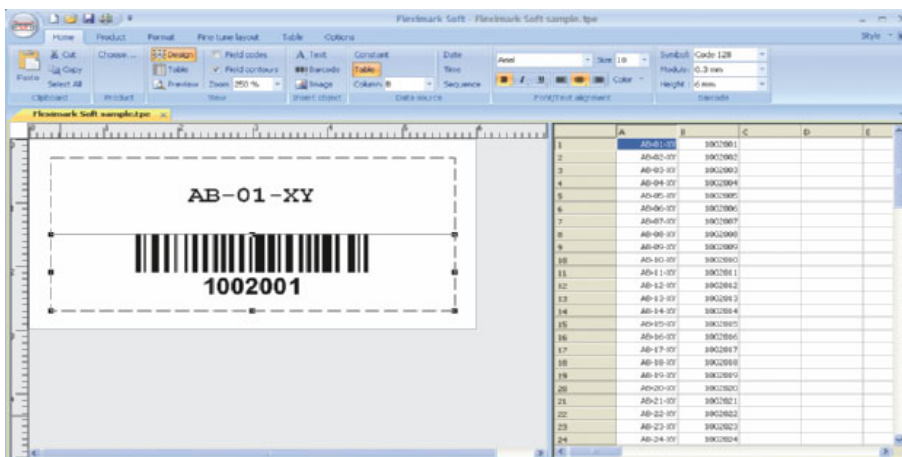
- Consecutive numbering, text sorting
- Barcodes: EAN-8, EAN-13, EAN-128, Code-128, Code-39, interleaved 2/5, UPC-A

Included

- CD-ROM
- Operating manual and help function in the program
- Service manual on CD-ROM

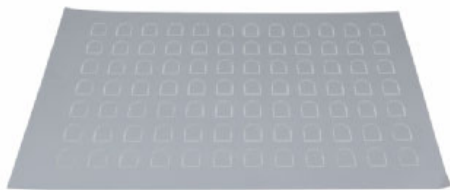
Article number	Article designation	Language	PU
83251080	FLEXIMARK Software 10.0	DE / EN / SE / FR	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label



New

FLEXIMARK® ULTRA L 12X8,5



Info

- Sample labels are available upon request

FLEXIMARK® ULTRA L 12X8,5

Benefits

- Printing with FLEXIMARK® Software
- Designed for the EPIC® ULTRA marking field

Application range

- Self-adhesive labels made from polyester film for laser printers
- Special marking for EPIC® ULTRA hood

Approvals



Note

- Optimum printing results from laser printers are achieved with straight sheet feed-in with no deflection over rollers and little heat build-up
- Insert sheet in manual paper feed compartment
- Use of original toner is recommended

Design

- Rounded-corners
- Perforated sheets, approx. DIN A5

Technical data



Upon request

Other colours are available upon request



Note

Adhesive strength: 15 N/25 mm



Colour delivered

Silver-grey



Material

Halogen-free polyester film
Thickness: 0.05 mm



Temperature range

-40°C to +125°C
Working temperature: min. +10 °C

Article number	Article designation	Width x height (mm)	Labels per side	Contents (unit)	PU
83252424	FLEXIMARK Ultra 12-8.5 SV	12.0 x 8.5	84	840	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

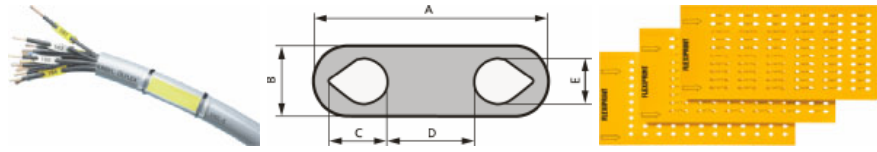
- FLEXIMARK® Software 10.0 refer to page 877

FLEXIMARK® FLEXIPRINT LF Single core marking



Info

- Download www.lappkabel.com - Service - Downloadcenter - Marking system FLEXIMARK®



FLEXIMARK® FLEXIPRINT LF Single core marking

Benefits

- FLEXIMARK® Software is the marking software that enables you to print all kinds of labels. It is especially suitable for FLEXIMARK® labels, which are already defined in this catalogue. With the FLEXIMARK® Software you can use all Microsoft® Windows options to print your labels: graphics, cliparts, fonts and font sizes. Integrated word processing will give you any desired result for your label text quickly and easily. You will be able to import data, store individual logos and apply bar codes easily.

Application range

- Polyester single core marking for laser printers
- Use of original toner is recommended. Insert sheet in manual paper-feed compartment.

Product features

- Printable on both sides by using standard laser printers and the Fleximark® Software (front yellow, rear white)
- Fast and easy assembly
- FLEXIPRINT LF for laser printers

Approvals



Design

- Flexiprint consists of single marking cards that contain 20-60 perforated markers, depending on the size (F0/F1/F1b/F2/F3)

Design

- For cable cross-sections over 16.00 mm², cable ties can be used for installing single markers

Technical data

- Caution**
Resistant to oil, water, commonly used chemicals, UV-light
- Note**
Thickness: 0.175 mm
- Colour delivered**
Front: yellow; rear: white
- Material**
Halogen-free polyester
- Temperature range**
-40 °C to +125 °C

Article number	Article designation	Cable Ø (mm)	Contents (unit)	PU
Flexiprint for laser printers				
83280005	FLEXIMARK Flexiprint L-F0 YE	0.25 - 0.75	4,500	1
83254420	FLEXIMARK Flexiprint LF1 0.75-1.5 YE	0.75 - 1.5	4,500	1
83254460	FLEXIMARK Flexiprint LF1B 1.5-2.5 YE	1.5 - 2.5	4,500	1
83254480	FLEXIMARK Flexiprint LF0 Long 1.5-2.5 YE	1.5 - 2.5	2,250	1
83254500	FLEXIMARK Flexiprint LF2 2.5-6 YE	2.5 - 6	4,500	1
83254520	FLEXIMARK Flexiprint LF3 6-16 YE	6 - 16	1,500	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Software 10.0 refer to page 877

FLEXIMARK® LFL Cable label

Benefits

- Easy to label
- Printing with FLEXIMARK® Software

Application range

- For marking cables in switch and control cabinets

Product features

- A5 and A4 label sheets for laser printers

Approvals



Technical data

- Colour delivered**
Standard colour: yellow/white
- Material**
Halogen-free polyester film, thickness: 0.175 mm
- Temperature range**
-40 °C to +125 °C



Note

- Insert sheet in manual paper feed compartment

Design

- Cable label attached directly with a cable tie
- Printable on both sides
- One (LFL1H) or two-sided (LFL2H) fastening with cable ties (up to 4.5 mm in width)

Article number	Article designation	Width x height (mm)	Labels per side	Contents (unit)	PU
83254750	FLEXIMARK Label LFL2H9.9-26 YEWH	28.0 x 9.9	40	400	1
83254760	FLEXIMARK Label LFL1H9.9-35 YEWH	35.0 x 9.9	40	400	1
83254765	FLEXIMARK Label LFL2H 66-9.9 YEWH	66.0 x 9.9	56	560	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Software 10.0 refer to page 877
- TY - FAST® standard cable ties refer to page 955
- MS Marker pens refer to page 891

FLEXIMARK® Wrapping labels LCK



FLEXIMARK® Wrapping labels LCK



Info

- Sample labels for checking the print quality of your printer are available upon request

Benefits

- A transparent foil is wrapped around the cable and pasted over the printed field, so that the printing is protected against abrasion, moisture, oils and solvents

Application range

- Very suitable for marking cables and switch cabinets

Product features

- White or yellow labelling field
- Printing fields can be printed with laser printer by using the FLEXIMARK® software, or marked with waterproof, permanent MS marker pens

Approvals



Design

- LCK labels for laser printers
- On DIN-A4 sheets. We recommend the use of original toner. Insert sheet in manual paper feed compartment. Optimum printing results from laser printers are achieved with straight sheet feed-in with no deflection over rollers and little heat build-up

Technical data



Caution
Halogen-free



Colour delivered
White or yellow labelling field



Material
Polyester film
Thickness: 0.025 mm



Temperature range
-40°C to +125°C
Minimum working temperature: +10°C

Article number	Article designation	Width (mm) x length (m)	Labelling surface (mm)	For outer Ø (mm)	Labels per side	Contents (unit)	PU
LCK labels for laser printers							
83256143	FLEXIMARK Label LCK 32 25-35.5 WH	25.0 x 35.5	25 x 12	4 - 7	64	640	1
83256142	FLEXIMARK Label LCK 32 25-35.5 YE	25.0 x 35.5	25 x 12	4 - 7	64	640	1
83256145	FLEXIMARK Label LCK 35 25-57 WH	25.0 x 57.0	25 x 19	6 - 12	40	400	1
83256144	FLEXIMARK Label LCK 35 25-57 YE	25.0 x 57.0	25 x 19	6 - 12	40	400	1
83256147	FLEXIMARK Label LCK 40 25-95 WH	25.0 x 95.0	25 x 25	8 - 22	24	240	1
83256146	FLEXIMARK Label LCK 40 25-95 YE	25.0 x 95.0	25 x 25	8 - 22	24	240	1
83256149	FLEXIMARK Label LCK 45 25-142.5 WH	25.0 x 142.5	25 x 25	8 - 37	16	160	1
83256148	FLEXIMARK Label LCK 45 25-142.5 YE	25.5 x 142.5	25 x 25	8 - 37	16	160	1
83256160	FLEXIMARK Label LCK 48 35-95 WH	34.0 x 95.0	34 x 25	8 - 22	18	180	1
83256161	FLEXIMARK Label LCK 48 35-95 YE	34.0 x 95.0	34 x 25	8 - 22	18	180	1
83256151	FLEXIMARK Label LCK 60 50-57 WH	50.0 x 57.0	50 x 19	6 - 12	20	200	1
83256150	FLEXIMARK Label LCK 60 50-57 YE	50.0 x 57.0	50 x 19	6 - 12	20	200	1
83256153	FLEXIMARK Label LCK 65 50-95 WH	50.0 x 95.0	50 x 25	8 - 22	12	120	1
83256152	FLEXIMARK Label LCK 65 50-95 YE	50.0 x 95.0	50 x 25	8 - 22	12	120	1
83256155	FLEXIMARK Label LCK 70 50-142.5 WH	50.0 x 142.5	50 x 25	8 - 37	8	80	1
83256154	FLEXIMARK Label LCK 70 50-142.5 YE	50.0 x 142.5	50 x 25	8 - 37	8	80	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Software 10.0 refer to page 877

FLEXIMARK® LA Labels

Benefits

- Printing with FLEXIMARK® Software

Application range

- Self-adhesive labels made from polyester film for laser printers
- Cable and component marking system

Approvals



Note

- Optimum printing results from laser printers are achieved with straight sheet feed-in with no deflection over rollers and little heat build-up
- Insert sheet in manual paper feed compartment
- Use of original toner is recommended



Info

- Sample labels are available upon request

Technical data



Note
Adhesive strength: 15 N/25 mm



Colour delivered
White



Material
Halogen-free polyester film
Thickness: 0.05 mm



Temperature range
-40°C to +125°C
Working temperature: min. +10 °C

Design

- Rounded-corners



Article number	Article designation	Width x height (mm)	Labels per side	Contents (unit)	PU
83256096	FLEXIMARK Label LA 30 30.5-12.7 WH	30.8 x 12.7	110	1,110	1
83256097	FLEXIMARK Label LA 50 60-30 WH	60.0 x 30.0	24	240	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Software 10.0 refer to page 877

Benefits

- Printing with FLEXIMARK® Software

Application range

- Cable and component marking system
- Self-adhesive labels made from polyester film for laser printers

Approvals



Note

- Insert sheet in manual paper feed compartment
- Optimum printing results from laser printers are achieved with straight sheet feed-in with no deflection over rollers and little heat build-up
- Use of original toner is recommended



Info

- Sample labels are available upon request

Technical data



Note
Adhesive strength: 15 N/25 mm



Colour delivered
yellow-white



Material
Halogen-free polyester film
Thickness: 0.05 mm



Temperature range
-40°C to +125°C
Working temperature: min. +10 °C

Design

- Rectangular shape

FLEXIMARK® LB Labels



Article number	Article designation	Width x height (mm)	Labels per side	Contents (unit)	PU
83256091	FLEXIMARK Label LB 10 7-8 YE	7.0 x 8.0	780	7,800	1
83256156	FLEXIMARK Label LB 10 7-8 WH	7.0 x 8.0	780	7,800	1
83256092	FLEXIMARK Label LB 20 11-8 YE	11.0 x 8.0	480	4,800	1
83256157	FLEXIMARK Label LB 20 11-8 WH	11.0 x 8.0	480	4,800	1
83256090	FLEXIMARK Label LB 30 12-6 YE	12.0 x 6.0	600	6,000	1
83256158	FLEXIMARK Label LB 30 12-6 WH	12.0 x 6.0	600	6,000	1
83256093	FLEXIMARK Label LB 40 16-8 YE	16.0 x 8.0	330	3,300	1
83256159	FLEXIMARK Label LB 40 16-8 WH	16.0 x 8.0	330	3,300	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Software 10.0 refer to page 877

New

FLEXIMARK® LA Labels



Benefits

- Printing with FLEXIMARK® Software

Application range

- Self-adhesive labels made from polyester film for laser printers
- Cable and component marking system

Approvals



Note

- Optimum printing results from laser printers are achieved with straight sheet feed-in with no deflection over rollers and little heat build-up

Design

- Rounded-corners



Info

- Sample labels are available upon request

Technical data



Note
Adhesive strength: 15 N/25 mm



Colour delivered
White or yellow labelling field



Material
Halogen-free polyester film
Thickness: 0.05 mm



Temperature range
-40°C to +125°C
Working temperature: min. +10 °C

Article number	Article designation	Width x height (mm)	Labels per side	Contents (unit)	PU
83256203	FLEXIMARK label LA 15-6 WH	15.0 x 6.0	517	5,170	1
83256204	FLEXIMARK label LA 15-6 YE	15.0 x 6.0	517	5,170	1
83256206	FLEXIMARK label LA 16.9-7 WH	16.9 x 9.0	310	3,100	1
83256207	FLEXIMARK label LA 16.9-7 YE	16.9 x 9.0	310	3,100	1
83256212	FLEXIMARK label LA 20-8 WH	20.0 x 8.0	280	2,800	1
83256213	FLEXIMARK label LA 20-8 YE	20.0 x 8.0	280	2,800	1
83256215	FLEXIMARK label LA 25-12 WH	25.0 x 12.0	161	1,610	1
83256216	FLEXIMARK label LA 25-12 YE	25.0 x 12.0	161	1,610	1
83256218	FLEXIMARK label LA 25.6-10 WH	25.6 x 10.0	196	1,960	1
83256219	FLEXIMARK label LA 25.6-10 YE	25.6 x 10.0	196	1,960	1
83256221	FLEXIMARK label LA 46.9-9 WH	46.9 x 9.0	124	1,240	1
83256222	FLEXIMARK label LA 46.9-9 YE	46.9 x 9.0	124	1,240	1
83256224	FLEXIMARK label LA 56-21.8 WH	56.0 x 21.8	39	390	1
83256225	FLEXIMARK label LA 56-21.8 YE	56.0 x 21.8	39	390	1
83256209	FLEXIMARK Label LA 16.9x9 WH 3100	16.9 x 9.0	310	3,100	1
83256210	FLEXIMARK Label LA 16.9x9 YE 3100	16.9 x 9.0	310	3,100	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Software 10.0 refer to page 877

SK Self-adhesive labels



Benefits

- The FKLS labels are made from white cardboard and can be easily replaced.
- Easy to handle

Application range

- SK quick adhesive labels are suitable for many purposes. The FKLS marking sheets made from white cardboard can be easily replaced. Control panels, switching boards, control devices, counter panels and similar are clearly marked with these labels. The protective foil is simply removed from the back and the label pressed onto the dry, clean, grease-free surface.

Technical data



Material
Impact-resistant polystyrene



Temperature range
-30°C to +70°C

Approvals



Included

- Without marking labels

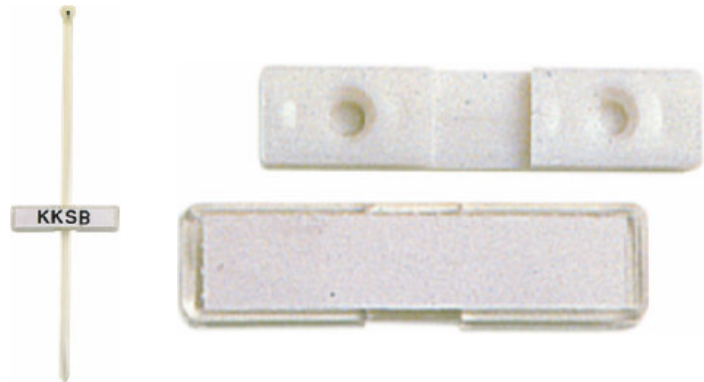
Article number	Article designation	Width x height (mm)	Suitable marking labels	Contents (unit)
61711260	SK 1324	24.0 x 13.0	FKLS 1324	100
61711280	SK 1337	37.0 x 13.0	FKLS 1337	100
61711300	SK 1852	52.0 x 18.0	FKLS 16 / FB 110	100

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FKLS Marking labels refer to page 883

KKSB Marking labels



KKSB Marking labels

Benefits

- KKSB labels can be installed with cable ties, double-sided adhesive tape or screws.
- Labelling options: by hand, typewriter or laser/matrix/ink-jet printer

Approvals



Design

- KKSB labels consist of two parts: the lower part (white) for securing the label; and the cover (transparent).
- The FKLS labels are made from white cardboard, are perforated and easy to replace.

Included

- With marking labels
- Without cable ties, screws

Technical data



General

Fastening: cable ties up to 11 mm width, screw holes 3.5 mm



Material

Polystyrene

Article number	Article designation	Width x height (mm)	Suitable marking labels	Contents (unit)
61712660	KKSB 10	52.0 x 12.0	FKLS 10 / FB 112	100
61712680	KKSB 16	52.0 x 18.0	FKLS 16 / FB 110	100

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- TY - FAST® standard cable ties refer to page 955
- MS Marker pens refer to page 891
- FKLS Marking labels refer to page 883

FKLS Marking labels

Product features

- Labelling options: by hand, typewriter, or laser/matrix/ink-jet printer

Approvals



Technical data



Colour delivered

White



Material

Perforated sheets, approx. DIN A5



Article number	Article designation	Width x height (mm)	Suitable labels	Contents (unit)	PU
61721810	FKLS 1337	35.0 x 10.5	SK 1337	72	1
61721820	FKLS 1324	23.0 x 10.5	SK 1324	108	1
61721830	FKLS 10 / FB 112	48.0 x 9.5	KKS 10, KKSB 10	36	1
61721840	FKLS 16 / FB 110	48.0 x 16.0	SK 1852, KKS 16, KKSB 16	32	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- SK Self-adhesive labels refer to page 882
- KKSB Marking labels refer to page 883

ETB Marking labels



Benefits

- ETB marking sign has various areas of use in addition to binding and bundling.
- The marking sign can be opened and closed easily for replacement of the label.

Application range

- Areas of use include marking cables, tubes, items, or as advertising media, baggage labels and any other kind of labelling.

Product features

- The label is folded in a way that can be reduced to a quarter of its size, matching the visible part of the printing field in the label holder.

Approvals



Technical data



Material

Polypropylene (PP)
UV-resistant



Temperature range

-30°C to +110°C

Design

- Perforated sheets, approx. DIN A5
- Cable tie dimensions: 200 x 5 mm

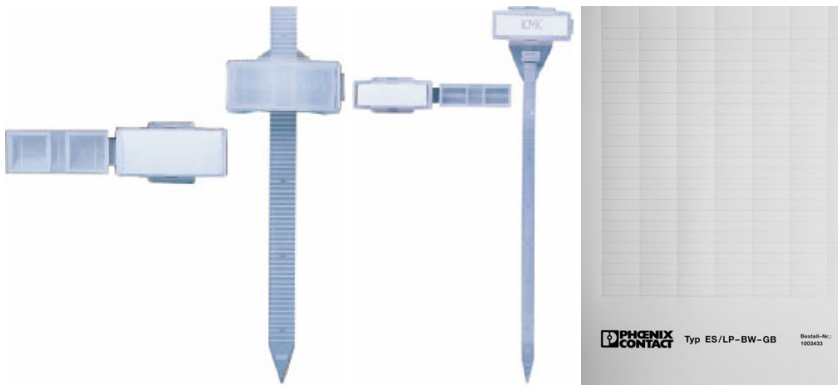
Included

- With marking labels

Article number	Article designation	Width x height (mm)	Labels per side	Contents (unit)
61742810	ETB holder, transparent	60.0 x 33.0		50
61742900	ETB labels	53.0 x 18.0	56	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

KMK Marking labels



KMK Marking labels

Benefits

- Printed insert strips are placed inside the label-holder and enclosed by a dust-proof cap.

Application range

- The KMK marking signs are suitable for both marking and bundling several conductors and cables in interiors.

Product features

- Labelling options: by hand, typewriter, or laser/matrix/ink-jet printer

Approvals



- Smudge-proof: DIN 30646:1993-11, DIN VDE 0611-1:1977-11

Design

- Strap width of KMK: 5 mm
- Bundling area of KMK: 10-25 mm
- Strap width of KMK3: 10 mm
- Bundling area of KMK3: 16-31 mm
- Fastening loops KMK2/KMK4: 5 mm

Included

- Please order labels separately

Technical data



Colour delivered

Transparent



Material

Label-holder: PE, halogen-free
Labels: cardboard, DIN A4 perforated, halogen-free



Temperature range

-40°C to +80°C

Article number	Article designation	Width x height (mm)	Equipment per piece	Suitable for:	Contents (unit)
61742820	KMK 1 label-holder	29.0 x 8.0	with strap	ES/LP-BW-GB	100
61742822	KMK 2 label-holder	29.0 x 8.0	without strap	ES/LP-BW-GB	100
61742824	KMK 3 label-holder	40.0 x 17.0	with strap	ES/KMK 3 GB	50
61742826	KMK 4 label-holder	40.0 x 17.0	without strap	ES/KMK 3 GB	50
61742922	ES/LP-BW-GB labels	29.0 x 8.0	1500 labels	KMK 1, KMK 2	10
61742926	ES/KMK 3 GB labels	40.0 x 17.0	500 labels	KMK 3, KMK 4	10

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

FLEXIMARK® Thermoprint A4+M/300



Info

- **Precise printing/high reliability**
- quick and easy handling



FLEXIMARK® Thermoprint A4+M/300

Benefits

- The FLEXIMARK® Thermoprint A4+M/300 is built for uncompromising permanent operation and for high printing volumes. The thermal transfer print is used for several applications. Every specific customer demand can be implemented thanks to the large periphery and software.
- Different designs, another language, in black and white or in colour, with or without barcode – each label can be printed by the label-marking printer as desired
- Ideal for industrial marking. The thermal transfer printing method increases the smudge and scratch-resistance of the printed surface, and provides increased resistance to oils and chemicals as well. For printing on many different types of labels, e.g. self-adhesive labels for equipment labelling (TA), cable markers (TCK) and shrink tubes.

Application range

- Printing on very narrow and thick endless materials is easily possible (width from 10 to 110 mm, thickness to 1.2 mm), e.g. heat shrink tube
- For difficult printable surfaces with reduced printing speed from 30 mm/sec.
- For packing robots, manual packing, in the production lines or for delivery of spare parts

Product features

- With 300 dpi print resolution
- Centred material position
- the material is inserted centre aligned
- Easily connected due to USB-interface
- Thermotransfer
For printing on standard paper, cardboard or synthetic materials PET/PE/PP/PVC/PU/acrylate/PI. This print method requires wax, resin or wax/resin ribbons.
Thermodirekt
Printer can be operated in thermal direct printing without ribbon.

Approvals



Note

- Other thermal transfer printing systems or printers are available upon request
- New technology: with this system, a RFID option is available for reading and editing the Smarrt labels before printing (More information is available upon request)

Design

- Operating mode: stand-alone operation, PC application or network - the printer meets every requirement.
- Basic maintenance such as cleaning the label sensor, changing the print head or print roller, can be easily done by yourself

Included

- FLEXIMARK® Thermoprint A4+M/300 and operation manual
- Marking software FLEXIMARK® Software 10.0
- Windows® driver
- Service manual on CD-ROM
- Power supply
USB cable (length 1.8 m)

Technical data

	Dimensions H x W x D: 274 x 242 x 446 mm
	Label rolls Material thickness: 0.055 - 1.2 mm Carrier width: 10 - 120 mm Max. core diameter Ø: 38.0 - 100.0 mm
	Ribbons L = variable up to 500 m
	Speed Up to 125.00 mm/s
	Weight 9.0 kg
	Material Labels or endless material on coils

Article number	Article designation	PU
83259602	FLEXIMARK Thermoprint A4+M/300	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Software 10.0 refer to page 877
- FLEXIMARK® Accessories Transfer Printer A4+M/300 refer to page 886
- FLEXIPRINT TF Single core marking refer to page 886
- FLEXIMARK® FLEXILABEL TFL Cable marking refer to page 887
- FLEXIMARK® TA Labels Cable marking refer to page 888
- FLEXIMARK® TCK Labels Cable marking refer to page 889
- FLEXIMARK® Heat shrinkable tubing refer to page 887

FLEXIMARK® Accessories Transfer Printer A4+M/300



■ Benefits

- Perforation-cutter and cutter for labels
- The perforation cutter creates the perforation holes on the material so that it can be separated manually.
- Ribbons
- Suitable for each label width and surface. Resistant to scratching and abrasion (also in colour) - available in various qualities.

■ Approvals



■ Note

- Other versions are available upon request



Info

- Cutting, perforating or individual colour selection - no problem!

■ Technical data



Dimensions

Roll diameter up to 80 mm



Note

Perforation-cutter and cutter:
Material width up to 120 mm
Material thickness 0.05 - 1.2 mm
Gap height up to 4.5 mm



Material

Resin

Article number	Article designation	Colour	Width (mm) x length (m)	Suitable labels	For printers	PU
Ribbons						
83259604	FLEXIMARK Ribbon R71 55/360 resin BK	black	55.0 x 360.0	Thermal transfer labels and shrinking tubes	A4 + M/300	1
83259609	FLEXIMARK Ribbon R71 110/360 resin BK	black	110.0 x 360.0	Thermal transfer labels and shrinking tubes	A4 + M/300	1
Perforation-cutter and cutter for labels						
83259603	FLEXIMARK Perforation cutter PCU4/2.5	black/ metal			A4 + M/300	1

Other colours, sizes and materials are available upon request.

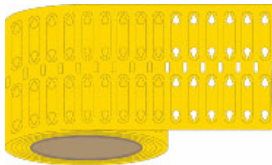
Photographs are not to scale and do not represent detailed images of the respective products.

Contents: roll, metre, unit, marker, label

■ Accessories

- FLEXIMARK® Thermoprint A4+M/300 refer to page 885

FLEXIPRINT TF Single core marking



■ Benefits

- Unique system for rational and durable marking of wires and thin cables (e.g. fibre-optic cables) in control cabinets.

■ Approvals



■ Note

- The following colours are available upon request:
white, red, blue, green

■ Technical data



Colour delivered

yellow



Material

Halogen-free polyester



Temperature range

-40°C to +125°C

Article number	Article designation	For mm ²	Contents (unit)	PU
83254372	FLEXIMARK FLEXIPRINT TF0 YE	0.25 - 0.75	2,000	1
83254378	FLEXIMARK Flexiprint TF1 0.75-1.5 YE	0.75 - 1.5	2,000	1
83254374	FLEXIMARK Flexiprint TF1B 1.5-2.5 YE	1.5 - 2.5	2,000	1
83254375	FLEXIMARK Flexiprint TF2 2.5-6.0 YE	2.5 - 6	2,000	1
83254376	FLEXIMARK Flexiprint TF3 6.0-16.0 YE	6 - 16	1,000	1

Photographs are not to scale and do not represent detailed images of the respective products.

Contents: roll, metre, unit, marker, label

■ Accessories

- FLEXIMARK® Software 10.0 refer to page 877
- FLEXIMARK® Thermoprint A4+M/300 refer to page 885

New

FLEXIMARK® FLEXILABEL TFL Cable marking

Benefits

- Easy to label

Application range

- The TFL labels are used together with the transparent character holders (PTE, CAB, PTFE). The result is a cable label that can be fixed to the cable with cable ties.

Approvals



Suitable tools

- Mounting pistol TY-GUN ERG 50

Technical data

RAL	Colour delivered yellow white
	Material Halogen-free polyester
	Temperature range -40°C to +125°C



Article number	Article designation	Colour	Width x length (mm)	Contents (unit)	PU
83254605	FLEXIMARK Flexilabel TFL 9.5-28 YE	yellow	28.0 x 9.5	1,000	1
83254600	FLEXIMARK flexi-label TFL 9.5-28 WH	white	28.0 x 9.5	1,000	1
83254610	FLEXIMARK flexi-label TFL 9.5-35 YE	yellow	35.0 x 9.5	1,000	1
83254615	FLEXIMARK flexi-label TFL 9.5-35 WH	white	35.0 x 9.5	1,000	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Software 10.0 refer to page 877
- FLEXIMARK® Thermoprint A4+M/300 refer to page 885

FLEXIMARK® Heat shrinkable tubing

Application range

- Many areas of application can be identified using the printable heat-shrink protective conduit. Especially for repair purposes.

Approvals



Technical data

	Caution Shrinking ratio 3:1
	Note UL 224 approval
RAL	Colour delivered black, yellow and white
	Material Polyolefine
	Temperature range -55°C to +135°C
	Specifications Flat material



Article number	Article designation	Colour	Width W (mm)	Contents (m)	PU
83251670	FLEXIMARK Shrinking tube 3/1 BK	black	3	30	1
83251671	FLEXIMARK Shrinking tube 6/2 BK	black	6	25	1
83251672	FLEXIMARK Shrinking tube 9/3 BK	black	9	20	1
83251673	FLEXIMARK Shrinking tube 12/4 BK	black	12	20	1
83251674	FLEXIMARK Shrinking tube 18/6 BK	black	18	20	1
83251680	FLEXIMARK Shrinking tube 3/1 YE	yellow	3	30	1
83251681	FLEXIMARK Shrinking tube 6/2 YE	yellow	6	25	1
83251682	FLEXIMARK Shrinking tube 9/3 YE	yellow	9	20	1
83251683	FLEXIMARK Shrinking tube 12/4 YE	yellow	12	20	1
83251684	FLEXIMARK Shrinking tube 18/6 YE	yellow	18	20	1
83251690	FLEXIMARK Shrinking tube 3/1 WH	white	3	30	1
83251691	FLEXIMARK Shrinking tube 6/2 WH	white	6	25	1
83251692	FLEXIMARK Shrinking tube 9/3 WH	white	9	20	1
83251693	FLEXIMARK Shrinking tube 12/4 WH	white	12	20	1
83251694	FLEXIMARK Shrinking tube 18/6 WH	white	18	20	1

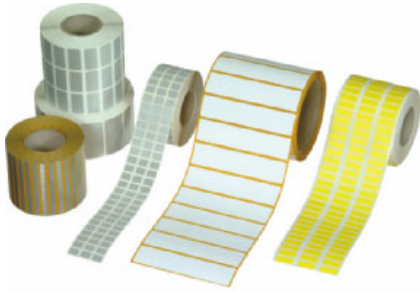
Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Software 10.0 refer to page 877

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

FLEXIMARK® TA Labels Cable marking



■ Benefits

- Ideal for industrial marking. The thermal transfer printing method increases the smudge and scratch-resistance of the printed surface, and provides increased resistance to oils and chemicals as well. For printing on many different types of labels, e.g. self-adhesive labels for equipment labelling (TA), cable markers (TCK) and shrink tubes.

■ Application range

- Components in switch cabinet construction
- Information signs etc.

■ Approvals



Info

- Sample labels are available upon request

■ Technical data

Adhesive
Acrylic-based
Permanent adhesion
Bonding strength: 15 N/mm



Material
Polyester (0.1 mm)



Temperature range
-40 °C to +150 °C
Processing: min. +10 °C

Article number	Article designation	Colour	Width x height (mm)	Core Ø	Labels per row	Material	Contents (unit)	PU
Width: 15.6 mm								
83259610	FLEXIMARK Label TA MT302 15-6 WH	white	15.6 x 6.0	38.0	3	MT302	10,000	1
83259611	FLEXIMARK Label TA MT302 15-6 YE	yellow	15.6 x 6.0	38.0	3	MT300	10,000	1
83259622	FLEXIMARK Label TA MT300 18-6.5 YE	yellow	18.0 x 6.5	38.0	3	MT300	10,000	1
83259623	FLEXIMARK Label TA MT302 18-6.5 WH	white	18.0 x 6.5	38.0	3	MT302	10,000	1
83259628	FLEXIMARK Label TA MT300 18-9 YE	yellow	18.0 x 9.0	38.0	3	MT300	10,000	1
83259629	FLEXIMARK Label TA MT302 18-9 WH	white	18.0 x 9.0	38.0	3	MT302	10,000	1
Width: 20 mm								
83259634	FLEXIMARK Label TA MT300 20-8 YE	yellow	20.0 x 8.0	38.0	3	MT301	10,000	1
83259635	FLEXIMARK Label TA MT302 20-8 WH	white	20.0 x 8.0	38.0	3	MT302	10,000	1
Width: 25.4 mm								
83259640	FLEXIMARK Label TA MT300 25.4-12.7 YE	yellow	25.4 x 12.7	38.0	1	MT301	2,000	1
83259641	FLEXIMARK Label TA MT300 25.4-12.7 YE	yellow	25.4 x 12.7	38.0	3	MT300	10,000	1
83259642	FLEXIMARK Label TA MT302 25.4-12.7 WH	white	25.4 x 12.7	38.0	1	MT302	2,000	1
83259643	FLEXIMARK Label TA MT302 25.4-12.7 WH	white	25.4 x 12.7	38.0	3	MT302	10,000	1
Width: 26 mm								
83259652	FLEXIMARK Label TA MT300 26-10 YE	yellow	26.0 x 10.0	38.0	1	MT300	2,000	1
83259653	FLEXIMARK Label TA MT300 26-10 YE	yellow	26.0 x 10.0	38.0	3	MT300	10,000	1
83259654	FLEXIMARK Label TA MT301 26-10 WH	white	26.0 x 10.0	38.0	1	MT302	2,000	1
83259655	FLEXIMARK Label TA MT302 26-10 WH	white	26.0 x 10.0	38.0	3	MT302	10,000	1
83259664	FLEXIMARK Label TA MT300 26.5-17.5 YE	yellow	26.5 x 17.5	38.0	3	MT300	5,000	1
83259665	FLEXIMARK Label TA MT302 26.5-17.5 WH	white	26.5 x 17.5	38.0	3	MT302	5,000	1
Width: 30 mm								
83259670	FLEXIMARK Label TA MT300 30-20 YE	yellow	30.0 x 20.0	38.0	1	MT300	2,000	1
83259671	FLEXIMARK Label TA MT300 30-20 YE	yellow	30.0 x 20.0	38.0	3	MT300	6,000	1
83259672	FLEXIMARK Label TA MT302 30-20 WH	white	30.0 x 20.0	38.0	1	MT302	2,000	1
83259673	FLEXIMARK Label TA MT302 30-20 WH	white	30.0 x 20.0	38.0	3	MT302	6,000	1
Width: 32 mm								
83259682	FLEXIMARK Label TA MT300 32-9.5 YE	yellow	32.0 x 9.5	38.0	1	MT300	2,000	1
83259683	FLEXIMARK Label TA MT300 32-9.5 YE	yellow	32.0 x 9.5	38.0	3	MT300	10,000	1
83259684	FLEXIMARK Label TA MT302 32-9.5 WH	white	32.0 x 9.5	38.0	1	MT302	2,000	1
83259685	FLEXIMARK Label TA MT302 32-9.5 WH	white	32.0 x 9.5	38.0	3	MT302	10,000	1
Width: 38 mm								
83259694	FLEXIMARK Label TA MT300 38-19 YE	yellow	38.0 x 19.0	38.0	1	MT300	20,000	1
83259695	FLEXIMARK Label TA MT302 38-19 WH	white	38.0 x 19.0	38.0	1	MT302	2,000	1
Width: 45 mm								
83259700	FLEXIMARK Label TA MT300 45-23 YE	yellow	45.0 x 23.0	38.0	1	MT300	2,000	1
83259701	FLEXIMARK Label TA MT302 45-23 WH	white	45.0 x 23.0	38.0	1	MT302	2,000	1
Width: 47 mm								
83259706	FLEXIMARK Label TA MT300 47-28 YE	yellow	47.0 x 28.0	38.0	1	MT300	1,500	1
83259707	FLEXIMARK Label TA MT302 47-28 WH	white	47.0 x 28.0	38.0	1	MT302	1,500	1
Width: 50 mm								
83259712	FLEXIMARK Label TA MT300 50-23 YE	yellow	50.0 x 23.0	38.0	1	MT300	2,000	1
83259713	FLEXIMARK Label TA MT302 50-23 WH	white	50.0 x 23.0	38.0	1	MT302	2,000	1
Width: 60 mm								
83259718	FLEXIMARK Label TA MT300 60-36 YE	yellow	60.0 x 36.0	38.0	1	MT300	1,000	1
83259719	FLEXIMARK Label TA MT302 60-36 WH	white	60.0 x 36.0	38.0	1	MT302	1,000	1
83259725	FLEXIMARK Label TA MT302 65-35 WH	white	65.0 x 35.0	38.0	1	MT302	1,000	1
83259730	FLEXIMARK Label TA MT300 65-53 YE	yellow	65.0 x 53.0	38.0	1	MT300	750	1
83259731	FLEXIMARK Label TA MT302 65-53 WH	white	65.0 x 53.0	38.0	1	MT302	750	1
Width: 70 mm								
83259736	FLEXIMARK Label TA MT300 70-48 YE	yellow	70.0 x 48.0	38.0	1	MT300	1,000	1
83259737	FLEXIMARK Label TA MT302 70-48 WH	white	70.0 x 48.0	38.0	1	MT302	1,000	1
Width: 76 mm								
83259742	FLEXIMARK Label TA MT300 76.2-22.9 YE	yellow	76.2 x 22.9	38.0	1	MT300	2,000	1
83259743	FLEXIMARK Label TA MT302 76.2-22.9 WH	white	76.2 x 22.9	38.0	1	MT302	2,000	1
Width: 89 mm								
83259748	FLEXIMARK Label TA MT300 89-82 YE	yellow	89.0 x 82.0	38.0	1	MT300	500	1
83259749	FLEXIMARK Label TA MT302 89-82 WH	white	89.0 x 82.0	38.0	1	MT302	500	1
Width: 101.6 mm								
83259755	FLEXIMARK Label TA MT300 101.6-23 YE	yellow	101.6 x 23.0	38.0	1	MT300	2,000	1
83259756	FLEXIMARK Label TA MT302 101.6-23 WH	white	101.6 x 23.0	38.0	1	MT302	2,000	1
83259763	FLEXIMARK Label TA MT300 101.6-36 YE	yellow	101.6 x 36.0	38.0	1	MT300	1,000	1
83259764	FLEXIMARK Label TA MT302 101.6-36 WH	white	101.6 x 36.0	38.0	1	MT302	1,000	1
83259769	FLEXIMARK Label TA MT300 101.6-48 YE	yellow	101.6 x 48.0	38.0	1	MT300	1,000	1
83259770	FLEXIMARK Label TA MT302 101.6-48 WH	white	101.6 x 48.0	38.0	1	MT302	1,000	1
83259775	FLEXIMARK Label TA MT300 101.6-74 YE	yellow	101.6 x 74.0	38.0	1	MT300	500	1
83259776	FLEXIMARK Label TA MT302 101.6-74 WH	white	101.6 x 74.0	38.0	1	MT302	500	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

■ Accessories

- FLEXIMARK® Software 10.0 refer to page 877
- FLEXIMARK® Thermoprint A4+M/300 refer to page 885

FLEXIMARK® TCK Labels Cable marking

■ Benefits

- Unique system for rational and durable marking of wires and thin cables (e.g. fibre-optic cables) in control cabinets.

■ Product features

- White or yellow printing field on transparent, laminated adhesive tape

■ Approvals



■ Technical data

Adhesive
Acrylic-based
Permanent adhesion
Bonding strength: 15 N/mm



Material
Polyester film (0.05 mm)



Temperature range
-40 °C to +125 °C
Processing: min. +10 °C



Article number	Article designation	Colour	Width x length (mm)	Printable surface (W x H mm)	For Ø (mm)	Core Ø (mm)	Material	Contents (unit)	Contents (unit)	PU
83259846	FLEXIMARK Label TCK MT 310 20 16-13 YE	yellow	17.8 x 33.9	16 x 13	4.1 - 6.7	38	MT310	3	3,000	1
83259847	FLEXIMARK Label TCK MT 310 20 16-13 WH	white	17.8 x 33.9	16 x 13	4.1 - 6.7	38	MT310	3	3,000	1
83259848	FLEXIMARK Label TCK MT 310 25 21-16 YE	yellow	23.0 x 55.0	21 x 6	1.9 - 15.6	38	MT310	3	2,400	1
83259849	FLEXIMARK Label TCK MT 310 25 21-16 WH	white	23.0 x 55.0	21 x 6	1.9 - 15.6	38	MT310	3	2,400	1
83259851	FLEXIMARK Label TCK MT 310 32 25-14 YE	yellow	25.0 x 35.0	25 x 14	4.5 - 6.7	38	MT310	3	4,500	1
83259850	FLEXIMARK Label TCK MT 310 32 25-14 WH	white	25.0 x 35.0	25 x 14	4.5 - 6.7	38	MT310	3	4,500	1
83259861	FLEXIMARK Label TCK MT 310 35 23-19 YE	yellow	25.0 x 76.0	23 x 19	6.1 - 18.2	38	MT310	3	1,800	1
83259860	FLEXIMARK Label TCK MT 310 35 23-19 WH	white	25.0 x 76.0	23 x 19	6.1 - 18.2	38	MT310	3	1,800	1
83259871	FLEXIMARK Label TCK MT 310 40 24-25 YE	yellow	25.0 x 140.0	24 x 25	8.0 - 36.6	38	MT310	3	1,050	1
83259870	FLEXIMARK Label TCK MT 310 40 24-25 WH	white	25.0 x 140.0	24 x 25	8.0 - 36.6	38	MT310	3	1,050	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

■ Accessories

- FLEXIMARK® Software 10.0 refer to page 877
- FLEXIMARK® Thermoprint A4+M/300 refer to page 885



Basic Tie Ident BTI-I Cable tie



Basic Tie Ident BTI-II Cable tie



Basic Tie Ident BTI-III Cable tie



Application range

Basic Tie Ident BTI-I Cable tie

- Cable tie with marking field for easy and manual marking of e.g. cable bundle

Basic Tie Ident BTI-II Cable tie

- Cable tie with marking field for easy and manual marking of e.g. cable bundle

Approvals



Note

Basic Tie Ident BTI-I Cable tie

- Suitable labels
- Laser printer: LB 40 (16x8)

Basic Tie Ident BTI-II Cable tie

- Suitable labels
- LC 30 (20.3x8.5) LB 40 (16x8)
- TA18x6,5 / TA 20x8

Basic Tie Ident BTI-III Cable tie

- Suitable labels
- TA 26x10
- LC 50 (26x10)

Suitable tools

Basic Tie Ident BTI-I Cable tie

- TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers refer to page 962

Technical data



Material

Basic Tie Ident BTI-I Cable tie
Polyamide 6.6 - halogen-free



Temperature range

Basic Tie Ident BTI-I Cable tie
Permanent: -40°C to +85°C
Processing: -10°C to +60°C
Short-term: up to +110°C

Article number	Article designation	Width x length (mm)	Labelling surface (mm)	Bundling Ø (mm)	Minimum tensile strength (N/mm ²)	Contents (unit)
61831072	BTI-I 52100-M	100.0x2,5	25,4x8	20.0	81.6	100
61831073	BTI-I 52200-M	200.0x2,5	25,4x8	50.0	81.6	100
61831074	BTI-II 52110-M	110.0x2,5	20,4x9,1	20.0	81.6	100
61831075	BTI-II 52210-M	210.0x2,5	20,4x9,1	52.0	81.6	100
61831076	BTI-III 52190-M	190.0x4,8	13x28	48.0	22.0	100
61831077	BTI-III 52270-M	270.0x4,8	13x28	68.0	22.0	100

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

Basic Tie Ident BTI-I Cable tie

- MS Marker pens refer to page 891

Basic Tie Ident BTI-II Cable tie

- MS Marker pens refer to page 891

WM BW Blanc cable marker

Benefits

- When the cover is applied onto the cable, the transparent foil covers the writing area, thus protecting it against abrasion, humidity, oil and light solvents.

Application range

- Wrapping label with protective foil
- The designations can be written with a pencil, a ballpoint, special pen, or other marker on the white writing area.

Technical data

- Note**
Protection against abrasion, humidity, oil, light solvents
- Material**
Vinyl strips, silicone-treated lining
Halogen-free
- Temperature range**
-35°C to +70°C



Article number	Article designation	Labelling surface (mm)	Number of markers per brochure	Contents (unit)
61726150	WM brochure BW 3	25 x 25	30	1
61726160	WM brochure BW 5	25 x 20	50	1
61726170	WM brochure BW 12	12 x 15	200	1
61726180	WM brochure BW 14	6 x 15	400	1
61726190	WM brochure BW 34	18 x 14	140	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- MS Marker pens refer to page 891

Benefits

- For individual, durable marking of blank MINI/MAXI character and text strips and labels.

Product features

- The marking is water, smudge and weather-resistant.
- For CD, glass, plastic, metal, foil and more
- Line width: 0.4 mm
- Integrated eraser

MS Marker pens



Article number	Article designation	Colour	Contents (unit)
61784650	MS-S marker pen	black	10
61784660	MS-R marker pen	red	10
61784670	MS-B marker pen	blue	10

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- Basic Tie Ident BTI-I Cable tie refer to page 890
- ETB Marking labels refer to page 884
- KMK Marking labels refer to page 884

DYMO® Industry Rhino Pro 6000 Kit / DYMO® Rhino Pro 5200

The mobile label printer for industrial use



Info

- Included: RHINO CONNECT software

DYMO® Industry Rhino Pro 6000 Kit / DYMO® Rhino Pro 5200

Benefits

- The new industrial printers simplify labelling of components for installation technicians and tradesmen in the field of electrical engineering and data communications.

Application range

- Labelling of cables and wires
- Labelling of terminal blocks
- Labelling of modules and components
- Labelling of patch panels and protective sockets

Product features

- New high-performance labels ID1, with strong adhesive, assure durable, smudge-proof and scratch-proof lettering. The flexible NYLON- or VINYL straps are suitable for use on uneven surfaces and cable marking; the permanent POLYESTER straps are reliable for marking indoors and outdoors. Heat shrink tubing cartridges are ideal for cable marking.
- With direct access to the various label layouts such as cable, patch panel and component designation.

Design

- DYMO® Rhino PRO 5200: without PC interface large display for several labels
- DYMO® Rhino Pro 6000 Kit With PC interface and software. For instance, E-Plan data can be stored on the memory card and printed on site.

Technical data



General

Power supply pack and USB cable
Quick guide and registration card



Upon request

Robust hard case
Two ID1 tapes incl.
- Nylon tape BK/WH 24 mm
- Vinyl tape BK/WH 9 mm



Note

RHINO 6000 printer
RHINO CONNECT Software



Colour delivered

black, yellow and white



Material

The thermal transer printing technology ensures the labels are highly durable and resistant.
Li-Ion storage battery

Article number	Article designation	Contents (unit)
DYMO® Rhino Pro 6000 Kit		
61800360	RHINO 6000 printer	1
DYMO® Rhino PRO 5200		
61800335	DYMO® Rhino PRO 5200	1
61800336	Rhino PRO 5200 with hard case	1
61800251	Battery pack	1

DYMO® is a registered trademark of Sanford GmbH, a Newell Rubbermaid Company
Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- DYMO® ID1 - Industry tape D1 refer to page 893
- ID1 - Industry tape D1



DYMO® ID1 - Industry tape D1



Info

- Industrial environment



DYMO® ID1 - Industry tape D1

Benefits

- The ID1 tapes are highly resistant to wear and tear, fluctuating temperatures, chemicals, solvents, water and UV-light. Due to the strong adhesive, the industrial tapes are suited for all smooth, rough, plain or bent surfaces.

Product features

- Temperature range: -40°C to +105°C

Design

- Permanent polyester tape: Ideal for heavily-textured and powder-coated surfaces where extremely good adhesion and a long service life are required; for identification of junction boxes, buttons and patch panels.
- Flexible nylon tape: The permanent adhesive connection and a high-quality Nylon material provide the ideal solution for permanent and legible labelling. Particularly suited to cable labelling.

- Coloured vinyl strips: The permanent adhesive connection; a flexible coloured vinyl; and a tape that is resistant to UV, oil, scratches and solvents; provide the ideal solution for every type of labelling. For indoor and outdoor applications. Ideal for warning and safety markings and for cable labelling.
- Shrink tube tape: For single core and cable labelling. The combination of shrinking tube and special coloured tape gives a smudge-proof and scratch-proof lettering which is resistant to solvents, oils and UV light.
- Non-adhesive insert label: Ideal as an insert for label-holders (e.g. PTFE / CAB), attached to the cable by a cable tie. Material: polypropylene

Article number	Article designation	Colour of lettering / tape	Width W (mm)	Length (m)	For cable Ø (mm)	Contents (unit)
Permanent polyester labels						
61800260	RP/ID1 9MM POLYESTER SW/WS	black / white	9	5.50		1
61800263	RP/ID1 9MM POLYESTER SW/METAL	black / metal	9	5.50		1
61800261	RP/ID1 12MM POLYESTER SW/WS	black / white	12	5.50		1
61800264	RP/ID1 12MM POLYESTER SW/METAL	black / metal	12	5.50		1
61800262	RP/ID1 19MM POLYESTER SW/WS	black / white	19	5.50		1
61800265	RP/ID1 19MM POLYESTER SW/METAL	black / metal	19	5.50		1
Transparent polyester labels						
61800285	RP/ID1 9mm POLYESTER SW/ TRANSP	black / transparent	9	5.50		1
Flexible Industry D1 (ID1) nylon labels						
61800266	RP/ID1 12MM NYLON SW/WS	black / white	12	3.50		1
61800268	RP/ID1 12MM NYLON SW/GELB	black / yellow	12	3.50		1
61800267	RP/ID1 19MM NYLON SW/WS	black / white	19	3.50		1
61800269	RP/ID1 19MM NYLON SW/GELB	black / yellow	19	3.50		1
Flexible VINYL labels						
61800270	RP/ID1 9mm VINYL SW/GELB	black / yellow	9	5.50		1
61800271	RP/ID1 9mm VINYL SW/ORANGE	black / orange	9	5.50		1
61800272	RP/ID1 9mm VINYL SW/ROT	black / red	9	5.50		1
61800273	RP/ID1 9mm VINYL SW/GRÜN	black / green	9	5.50		1
61800274	RP/ID1 9mm VINYL SW/WS	black / white	9	5.50		1
61800275	RP/ID1 12mm VINYL SW/GELB	black / yellow	12	5.50		1
61800276	RP/ID1 12mm VINYL SW/ORANGE	black / orange	12	5.50		1
61800277	RP/ID1 12mm VINYL SW/ROT	black / red	12	5.50		1
61800278	RP/ID1 12mm VINYL SW/GRÜN	black / green	12	5.50		1
61800279	RP/ID1 12mm VINYL SW/WS	black / white	12	5.50		1
61800280	RP/ID1 19mm VINYL SW/GELB	black / yellow	19	5.50		1
61800281	RP/ID1 19mm VINYL SW/ORANGE	black / orange	19	5.50		1
61800282	RP/ID1 19mm VINYL SW/ROT	black / red	19	5.50		1
61800283	RP/ID1 19mm VINYL SW/GRÜN	black / green	19	5.50		1
61800284	RP/ID1 19mm VINYL SW/WS	black / white	19	5.50		1
Shrink tube tape						
61800290	RP/ID1 Shrink 1-6-1400	black / white	6	1.50	1.18 - 2.33	1
61800294	RP/ID1 Shrink 1-6-1400YL	black / yellow	6	1.50	1.18 - 2.33	1
61800291	RP/ID1 Shrink 1-9-1400	black / white	9	1.50	1.73 - 3.73	1
61800295	RP/ID1 Shrink 1-9-1400YL	black / yellow	9	1.50	1.73 - 3.73	1
61800292	RP/ID1 Shrink 1-12-1400	black / white	12	1.50	2.97 - 5.13	1
61800296	RP/ID1 Shrink 1-12-1400YL	black / yellow	12	1.50	2.97 - 5.13	1
61800293	RP/ID1 Shrink 1-19-1400	black / white	19	1.50	4.64 - 8.70	1
61800297	RP/ID1 Shrink 1-19-1400YL	black / yellow	19	1.50	4.64 - 8.70	1
Non-adhesive inserts						
61800340	RP/ID1 insertion plate 1-6-1600	black / white	6	5.50		1
61800341	RP/ID1 insertion plate 1-6-1600YL	black / yellow	6	5.50		1
61800342	RP/ID1 insertion plate 1-9-1600	black / white	9	5.50		1
61800343	RP/ID1 insertion plate 1-9-1600YL	black / yellow	9	5.50		1
61800344	RP/ID1 insertion plate 1-12-1600	black / white	12	5.50		1
61800345	RP/ID1 insertion plate 1-12-1600YL	black / yellow	12	5.50		1
61800346	RP/ID1 insertion plate 1-19-1600	black / white	19	5.50		1
61800347	RP/ID1 insertion plate 1-19-1600YL	black / yellow	19	5.50		1

DYMO® is a registered trademark of Sanford GmbH, a Newell Rubbermaid Company
Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- DYMO® Industry Rhino Pro 6000 Kit / DYMO® Rhino Pro 5200 refer to page 892
- TY - FAST® standard cable ties refer to page 955
- FLEXIMARK® Character holders PTFE / CAB refer to page 867

DYMO® Label Manager 260P



DYMO® Label Manager 260P

■ Benefits

DYMO® Label Manager 260P

- The DYMO® Label Manager 260P is a portable and lightweight printing computer that can be used to produce self-adhesive labels quickly and easily.

■ Product features

DYMO® Label Manager 260P

- ABC keyboard with navigation key for easy menu operation

- RACE technology for fast access to special characters
- Prints up to 2 lines
- Manual tape-cutting device
- Memory for up to 18 labels and 9 layouts

■ Note

DYMO® Label Manager 260P

- D1 label strips with 6, 9 and 12 mm width
- 7 fonts, 8 frames, 6 font sizes, 3 styles

■ Included

DYMO® Label Manager 260P

- Electronic label-printers
- 12 mm label strip (black/white)
- Operating manual and help function in the program
- Guarantee card
- Li-Ion storage battery

Article number	Article designation	Contents (unit)
61800409	DYMO® Label Manager 260P	1
61800150	9-volt AC adapter	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

■ Accessories

DYMO® Label Manager 260P

- DYMO® ID1 - Industry tape D1 refer to page 893
- DYMO® Tape D1 refer to page 895

DYMO® Label Manager 210D



DYMO® Label Manager 210D

■ Benefits

DYMO® Label Manager 210D

- The DYMO® LM 210D is a handy, lightweight desktop printer for producing self-adhesive labels in widths of 6, 9 and 12 mm quickly and easily.
- Options for copy and paste
- Memory for up to 18 labels and 9 layouts

■ Application range

DYMO® Label Manager 210D

- Easy to label

■ Product features

DYMO® Label Manager 210D

- Prints 6, 9 and 12 mm labels, D1 tapes
- 6 fonts, 6 frames and 3 font sizes



Info

- Easy to handle

- Large, semi-graphic display
- RACE technology for fast access to special characters
- Prints up to 2 lines

■ Design

DYMO® Label Manager 210D

- Manual tape-cutting device
- Length of label is free or fixed

Article number	Article designation	Contents (unit)
61800318	DYMO® LM 210D	1
61800150	9-volt AC adapter	1

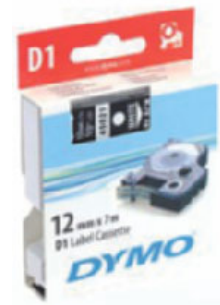
Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

■ Accessories

DYMO® Label Manager 210D

- DYMO® ID1 - Industry tape D1 refer to page 893
- DYMO® Tape D1 refer to page 895

DYMO® Tape D1



DYMO® Tape D1

Benefits

- For various applications

Product features

- Good weather, ozone, UV and oil-resistance
- Halogen-free

Technical data

 Temperature range
-30°C to +120°C

Article number	Article designation	Width (mm) x length (m)	Tape/lettering	Contents (unit)
61811500	D1-Band	6.0 x 7.0	transparent / black	1
61811530	D1-Band	6.0 x 7.0	white / black	1
61811580	D1-Band	6.0 x 7.0	yellow / black	1
61811600	D1-Band	9.0 x 7.0	transparent / black	1
61811630	D1-Band	9.0 x 7.0	white / black	1
61811640	D1-Band	9.0 x 7.0	white / blue	1
61811650	D1-Band	9.0 x 7.0	white / red	1
61811660	D1-Band	9.0 x 7.0	blue / black	1
61811670	D1-Band	9.0 x 7.0	red / black	1
61811680	D1-Band	9.0 x 7.0	yellow / black	1
61811690	D1-Band	9.0 x 7.0	green / black	1
61800160	D1-Band	12.0 x 7.0	transparent / black	1
61800170	D1-Band	12.0 x 7.0	transparent / blue	1
61800180	D1-Band	12.0 x 7.0	transparent / red	1
61800190	D1-Band	12.0 x 7.0	white / black	1
61800200	D1-Band	12.0 x 7.0	white / blue	1
61800210	D1-Band	12.0 x 7.0	white / red	1
61800220	D1-Band	12.0 x 7.0	blue / black	1
61800230	D1-Band	12.0 x 7.0	red / black	1
61800231	D1-Band	12.0 x 7.0	yellow / black	1
61800232	D1-Band	12.0 x 7.0	green / black	1
61808850	D1-Band	19.0 x 7.0	transparent / black	1
61808870	D1-Band	19.0 x 7.0	transparent / red	1
61808880	D1-Band	19.0 x 7.0	white / black	1
61808890	D1-Band	19.0 x 7.0	white / blue	1
61808900	D1-Band	19.0 x 7.0	white / red	1
61808910	D1-Band	19.0 x 7.0	blue / black	1
61808930	D1-Band	19.0 x 7.0	yellow / black	1
61808940	D1-Band	19.0 x 7.0	green / black	1
61808950	D1-Band	19.0 x 7.0	transparent / white	1
61808960	D1-Band	19.0 x 7.0	black / white	1
61808965	D1-Band	24.0 x 7.0	black / white	1

DYMO® is a registered trademark of Sanford GmbH, a Newell Rubbermaid Company
Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Similar products

- ID1 - Industry tape D1

Accessories

- Basic Tie cable tie refer to page 953
- DYMO® Label Manager 260P refer to page 894
- FLEXIMARK® Character holders PTEF/ CAB refer to page 867
- DYMO® Label Manager 210D refer to page 894



M1011 Manual embossing machine



Benefits

- The M1011 manual embossing machine has a robust metal case with a replaceable embossing disc that embosses metal straps. The machine also has an integrated punching and cutting device, and an automatic strap feed. The M1011 can also be used for embossing plastic straps.

Application range

- Outdoor applications
- Mechanically robust
- Cable and component marking system

Design

- PSST embossing disc: horizontal letters A-Z/0-9

Included

- M11 manual embosser, incl. PSST embossing disc.
- Without embossing tape

Technical data

- General**
Lettering height: 4.7 mm
- Note**
Punching hole diameter: 2 mm

Article number	Article designation	Lettering height (mm)	Width W (mm)	Length (m)	Contents (unit)
61742670	M 11 embosser	4.7			1
61742710	ABS aluminium embossing tape without adhesive coating		12	4.80	1
61742720	ABS aluminium embossing tape with adhesive layer		12	6.65	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

SP Metal print



Benefits

- Easy to handle
- One and two-hand operation
- Small and space-saving for narrow available space

Application range

- Stand embossing machine for metal plates
- SP Metallprint is a manually operated machine for embossing metal plates quickly and easily. The device is particularly suitable for batch production with changing data and different type plates. The sign is clamped and the desired characters are set on the embossing wheel visible in front of the device. The adjustable automatic feed of the work table ensures that the correct distances are achieved between the characters.

Technical data

- General**
Max. depth: 90 mm
Weight: 6.5 kg
- Note**
Equipment dimensions: H = 303 mm; footprint 145 x 120 mm

Product features

- Lettering sizes: 2, 3, 4, 5 mm (replaceable embossing wheels)
- Character set: uppercase A-Z, numbers 0-9, characters +/-,
- Max. label size: 140 x 90 mm
- Pressure limit for uniform embossing depth
- Adjustable stop through terminal strip

Included

- Embossing machine incl. embossing wheel for selected font size.

Article number	Article designation	Text height (mm)	Contents (unit)
61725991	SP 2 embosser	2.0	1
61725990	SP 3 embosser	3.0	1
61725992	SP 4 embosser	4.0	1
61725993	SP 5 embosser	5.0	1
61726000	PK 2 spare embossing wheel	2.0	1
61726001	PK 3 spare embossing wheel	3.0	1
61726002	PK 4 spare embossing wheel	4.0	1
61726003	PK 5 spare embossing wheel	5.0	1

Photographs are not to scale and do not represent detailed images of the respective products.
Contents: roll, metre, unit, marker, label

Accessories

- FLEXIMARK® Stainless steel FCC refer to page 875

Cutting, Stripping, Skinning

Cutting tools for various applications	902
Cutting tools for small diameters	903
Cutting tools for large diameters	904
Stripping tools	905

Connection and crimping

Conductor end sleeves	909
Crimping tools for conductor end sleeves	915
Crimping machines for conductor end sleeves	918
Cable Lugs	919
Panel Connectors	921
Crimping tools for insulated connections	924
Crimping tools for uninsulated connections	925
Tube cable lugs	927
Pressing pliers for CU connections	929
Universal crimping tools and appliances	931
EMC protection	938

Insulating, protecting, shrinking

Insulating tapes and insulating sheaths	942
Screening	944
Heat-shrinking products	945

Binding, bundling, fastening

Cable bundling engineering	951
Cable ties	953
Assembly tool for cable ties	962
Fastening systems	964

Cable guiding and fixing

Cable trolley systems	970
Cable ducts	972
Cable wedge clamps	973

Installation, processing, maintenance

Processing and installation tools	976
-----------------------------------	-----

Cable Accessories



Cutting, Stripping, Skinning

Overview table: Crimping tools for end sleeves	900
Overview table: Crimping tools for insulated connectors	901
Cutting tools for various applications	
COMBINOX cable shears	902
Multipurpose shears A and B	902
Cutting tools for small diameters	
BULLI cable shears	903
KT 11 cable shears	903
KS 15 cable shears	903
Cutting tools for large diameters	
KS 20 cable shears	904
Cable shears KT 4 and KT 5	904
Stripping tools	
PTS 4 stripping and cutting tool	905
EASY STRIP 2 stripping and cutting tool	905
Universal strip stripping and cutting tool	906
STAR STRIP stripping tool	906
SMARTSTRIP stripping tool	907
DATA STRIP stripping tool	907
FC Strip stripping tool	908
AS-I STRIP special stripping tool	908
AVG 0160 cable stripping and twisting machine	908

Connection and crimping

Conductor end sleeves	
Conductor end sleeves insulated	909
Deciband AHIB insulated conductor end sleeves	910
Conductor end sleeves AHK, insulated	910
DIN-Coil conductor end sleeves	911
DIN-strips for QUADRO	911
TWIN conductor end sleeves	912
DIN-assorted boxes conductor end sleeves /	
AHI assorted boxes / TWIN assorted boxes	913
Conductor end sleeves XL, insulated	914
Conductor end sleeves AH, not insulated	914
Crimping tools for conductor end sleeves	
QUADRO multifunction tool	915
PEW 8.84 crimping pliers / MULTICRIMP 6 crimping pliers	915
PEW 8.87 crimping pliers	916
KEB 3550 crimping pliers / KEB 1025 crimping pliers	916
K29 crimping pliers	917
KEBS 0560 TWIN crimping pliers	917
Crimping machines for conductor end sleeves	
CrimBoss electromagnetic crimping device	918
Cable Lugs	
Insulated cable lugs	919
Cable lugs KB	920
Panel Connectors	
Panel connectors insulated	921
Panel connectors non-insulated	922
ISO-sleeve	922
Panel connectors with latch	923
Panel connector sockets Type M / Type F	923
Crimping tools for insulated connections	
DSA 0110 + DSA 0725 crimping pliers	New 924
CSA 0760 + KSA 0760 crimping pliers	New 924
Crimping tools for uninsulated connections	
DRB 0505 + DRB 0115 crimping pliers	New 925
KRB 0560 crimping pliers	New 925
DKB 0325 + DKB 0360 crimping pliers	New 926
KWB 4099 crimping pliers	New 926
Tube cable lugs	
Tube cable lugs KR/ KRT/ KRF	927
Pressing pliers for CU connections	
T 2288 pressing pliers	929
WT 3195 G pressing pliers, hydraulic	929
V 1311 pressing pliers, hydraulic	930
Die holders for system 1311	930
Die holders for system 1311	930
Universal crimping tools and appliances	
Mobile crimp tool crimping pliers	931
Mobile crimp tool - crimping inserts	931
PEW 12 universal tool	932
WT 4454 G universal pressing pliers	932

WT - FMP 20 crimping tool hydraulic	933
WT-IS 0560 G crimping inserts	934
WT-IS 2525 G crimping inserts	934
WT-IS 0510 G crimping inserts	934
WT-IS 1525 G crimping inserts	934
WT-KR 0560 G crimping inserts	935
WT-BL 0560 G crimping inserts	935
WT-BL 10 G crimping inserts	935
WT-BL 16 G crimping inserts	935
WT-BLH 1060 G crimping inserts	936
WT-KR 1475 G crimping inserts	936
WT-AH 2560 G crimping inserts	936
WT-AH 1425 G crimping inserts	936
WT-AG 6016 G crimping inserts	937
WT-RG 58/59 IL crimping inserts	937
WT-KRW 1525 G crimping inserts	937
EMC protection	
RSK one-piece screen connector	938
RSK gauge	938
RSK earth clamp	939
ERG 740 manual pressing tool	939
Crimping inserts for ERG 740	939
SHIELD-KON® two-part screen connector	940
SHIELD-KON® crimping inserts	941

Insulating, protecting, shrinking

Insulating tapes and insulating sheaths	
Temflex™ 1500 insulating tape	942
TI insulating tape	942
TBTA self-amalgamating tape	942
Insulating tube ISS	943
Insulating tube ISY	943
Screening	
Copper braid	944
3M Scotch™ 1183 screening tape	944
Heat-shrinking products	
HOTY heat-shrink tube	945
PLG - HSB box shrink tube	946
TBW / TBM shrink tube	946
CMP shrink tube	947
GYS shrink tube	947
PKG shrink tube	948
HG 2310 LCD hot-air pistol	948
TEB branch muff	949
TEC sealing cap	949
SHRINK-KON® shrink tube set	950
SHRINK-KON® set refill packs	950

Binding, bundling, fastening

Cable bundling engineering	
NW nylon coil / KW plastic coil	951
Coiling tool spirals	951
Cable-Eater bunched cable conduit	952
Spare tool Cable - Eater	952
Cable ties	
Basic Tie cable tie	953
Twist Tail™ cable tie	954
TY - FAST® - UV-resistant cable ties /	
TY - FAST® standard cable ties	955
TY-RAP® detectable cable ties	New 956
TY- RAP® standard cable ties	957
TY- RAP® heat-resistant cable ties	958
TY- RAP® weather-proof, UV-stabilised	958
TY- RAP® for screwing on, cable ties	959
TY- RAP® with labelling area, cable ties	959
Quick ties KBS/ KB	960
TY-GRIP® FOL/ FO cable tie	960
Mille-Tie™ cable ties	961
LS steel cable ties	961
Assembly tool for cable ties	
TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers	962
BASIC cable tie pliers	963
STEEL GUN HT-338 cable tie pliers	963
Fastening systems	
TC 121 plug socket	964
TC tie socket	964

TC mounting socket with saddle	965	Cable wedge clamps	
TC tie small socket	965	RKK 01-06 round cable wedge clamps	973
TC tie screw socket	966	FKK 08 Flat cable wedge clamp, small	973
TC aluminium screw socket	966	FKK 07 cable wedge clamp, large	973
MPNY screw / adhesive socket	966	MP 11/13/12/14 installation sheets	974
AS-I clip clamp / AS-I End sealing	New 967	MP 18/28 installation sheets	974
CC cord clips	968	MP 21/22 installation sheets	974
KS cable clamps	968	EKK single clamp / DKK double clamp	975
TC open assembly clip	969		
Cable guiding and fixing		Installation, processing, maintenance	
Cable trolley systems		Processing and installation tools	
Cable trolley system for round and flat cables	New 970	Kraftform® adjustable torque screwdriver/Kraftform Kompakt® Set	976
Cable ducts		Silicon sealing compound	976
ST steel cable tunnel	972		
STY plastic cable tunnel	972		

ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

SILVYN®

FLEXIMARK®

ACCESSORIES

APPENDIX

Overview Table Connector technology															
	QUADRO ¹ 0.5 – 2.5 mm ²	Multicrimp 6 ¹ 0.08 – 6 mm ²	PEW 8.84 ¹ 0.75 – 10 mm ²	PEW 8.87 ¹ 0.08 – 10 mm ²	PEW 8.87 ¹ plus 0.08 – 16 mm ²	KEB 1025 ¹ 10 – 25 mm ²	KEB 3550 ¹ 35 – 50 mm ²	K 29 ¹ 50 – 95 mm ²	KEBS 0560 ¹ Front pressing 0.1 – 6 mm ² + Twin 2 x 0.5 – 2 x 4 mm ²	KEBC 4010 ² Twin 2 x 4 mm ² – 2 x 10 mm ²	CRIMMBOSS ² insulated end sleeves 0.5 – 2.52 mm ²	PEW 12 ¹ Crimping inserts for 0.08 – 50 mm ²	WT 4454 G ¹ Crimping inserts for 0.5 – 16 mm ²	FMP 20 ¹ Crimping inserts for 0.14 – 50 mm ²	MCT Mobile Crimp Tool Crimping inserts for 0.1 – 10 mm ²
end sleeves															
0.25 mm ²		•		•	•				•				•	•	•
0.34 mm ²		•		•	•				•		•		•	•	•
0.50 mm ²	•	•		•	•				•		•	•	•	•	•
0.75 mm ²	•	•	•	•	•				•		•	•	•	•	•
1.00 mm ²	•	•	•	•	•				•		•	•	•	•	•
1.50 mm ²	•	•	•	•	•				•		•	•	•	•	•
2.50 mm ²	•	•	•	•	•				•		•	•	•	•	•
4.00 mm ²		•	•	•	•				•			•	•	•	•
6.00 mm ²		•	•	•	•				•			•	•	•	•
10.00 mm ²			•	•	•	•						•	•	•	•
16.00 mm ²				•	•	•						•	•	•	•
25.00 mm ²						•						•	on request		
35.00 mm ²							•					•	on request		
50.00 mm ²							•	•				•	on request		
70.00 mm ²								•							
95.00 mm ²								•							
120.00 mm ²															
150.00 mm ²															
Insulated TWIN end sleeves															
2 x 0.50 mm ²									•						
2 x 0.75 mm ²									•						
2 x 1.00 mm ²									•						
2 x 1.50 mm ²									•						
2 x 2.50 mm ²									•						
2 x 4.00 mm ²									•	•					
2 x 6.00 mm ²										•					
2 x 10.00 mm ²										•					

- manual tools
- crimping tools for end sleeves
- all purpose crimping tools with variable crimping inserts (also for flat plugs, cable lugs and other connectors)

¹ insulated + not insulated
² insulated

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

Overview Table Connector technology													
	DSA 0110 0.1 – 1.5 mm ²	DSA 0725 0.5 – 2.5 mm ²	CSA 0760 0.5 – 6 mm ²	KSA 0760 0.5 – 6 mm ²	DRB 0505 0.05 – 0.5 mm ²	DRB 0115 0.15 – 1.5 mm ²	KRB 0560 0.50 – 6 mm ²	DKB 0325 0.35 – 2.5 mm ²	DKB 0360 0.25 – 6.0 mm ²	KWB 4099 4 – 10 mm ²	T 2288 10 – 25 mm ²	WT 3195 G 6 – 95 mm ²	V 1311 10 – 400 mm ²
Insulated flat plug connectors, cable lugs and other connectors													
0.25 mm ²	●												●
0.50 mm ²	●	●	●	●									●
0.75 mm ²	●	●	●	●									●
1.00 mm ²	●	●	●	●									●
1.50 mm ²	●	●	●	●									●
2.50 mm ²		●	●	●									●
4.00 mm ²			●	●									●
6.00 mm ²			●	●									●
Non-insulated flat plug connectors, cable lugs and other connectors													
0.50 mm ²					●	●	●	●					●
0.75 mm ²						●	●	●	●				●
1.00 mm ²						●	●	●	●				●
1.50 mm ²						●	●	●	●				●
2.50 mm ²							●	●	●				●
4.00 mm ²							●		●	●			●
6.00 mm ²							●		●	●			●
KB/KR tube cable lugs													
0.75 mm ²								●	●				●
1.00 mm ²								●	●				●
1.50 mm ²								●	●				●
2.50 mm ²								●	●				●
4.00 mm ²									●	●			●
6.00 mm ²									●	●		●	●
10.00 mm ²										●	●	●	●
KR/KRT/KRF tube cable lugs													
10.00 mm ²											●	●	●
16.00 mm ²											●	●	●
25.00 mm ²											●	●	●
35.00 mm ²												●	●
50.00 mm ²													●
70.00 mm ²													●
95.00 mm ²													●
120.00 mm ²													●
150.00 mm ²													●
185.00 mm ²													●
240.00 mm ²													●
300.00 mm ²													●
400.00 mm ²													●

Pressing tools for insulated connectors
Pressing tools for non-insulated connectors

Pressing tools for CU connectors
Universal crimping tools with variable crimping inserts

COMBINOX cable shears



Benefits

- Wire guide integrated into blade.

Included

- Included: stripping device

Design

- Stainless steel shears

Article number	Article designation	Weight (kg)	Length (mm)	Pieces / PU
61735980	Combinox	0.121	193	1

COMBINOX is a registered trademark of Bessey&Sohn GmbH&Co.KG
 Photographs are not to scale and do not represent detailed images of the respective products.

Multipurpose shears A and B



Application range

- Suitable for separating steel-wire screen braiding
- Suitable for cutting cables, lines, single cores, flat cables, bands, thin sheet metal, paper, cardboard and wires
- Very suitable for processing steel wire braiding

Design

- Multipurpose shears B
- With forged blades
- Multipurpose shears A
- With forged blades, spring and locking clip

Article number	Article designation	Weight (kg)	Length (mm)	Pieces / PU
62120010	Multipurpose shears A	0.12	180	1
62120030	Spare spring A	-	-	1
62120020	Multipurpose shears B	0.095	175	1

Photographs are not to scale and do not represent detailed images of the respective products.

BULLI cable shears

Benefits

- Ergonomic handles
- Drawing cut is possible due to the special shape of the blades

Application range

- For fine-wire conductors
- Lightweight shears with finger-protection for fine-wire conductors up to max. outer diameter 16 mm

Included

- Equipment: locking bolt and spring return



Article number	Article designation	For outer diameter (mm)	Weight (kg)	Length (mm)	Pieces / PU
61744160	BULLI	16.0	0.135	185	1
61744161	Spare spring BULLI	-	-	-	1

Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- The semi-circular cutting edges surround the cables uniformly and prevent the cable from being pinched or deformed

Application range

- For outer diameter up to 11 mm
- For cutting single cores and fine-wire stranded cables up to max. outer diameter 11 mm

Design

- Semi-circular cutting edges made of stainless steel

Included

- Equipment: safety-locking bar, compression spring to keep them open, and plastic handles

KT 11 cable shears



Article number	Article designation	For outer diameter (mm)	Weight (kg)	Length (mm)	Pieces / PU
61789580	Cable shears KT 11	11.0	0.115	170	1

Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- No crushing or deformation
- Can be used universally for cutting, removing sheath and stripping wires

Application range

- Cuts copper and aluminium cables with up to 15 mm outer diameter
- Easy to cut by using only one hand
- Sharp, hardened cutting with precision grinding

Product features

- With clamping protection and adjustable screw joint
- Material: forged Vanading steel

Note

- Not suitable for steel wire and hard-drawn copper conductors

KS 15 cable shears



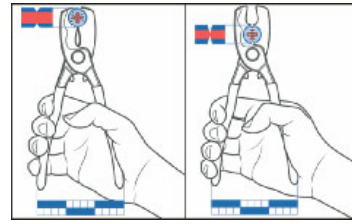
Article number	Article designation	For outer diameter (mm)	Weight (kg)	Length (mm)	Pieces / PU
61735975	KS 15	15.0	0.21	165	1

Photographs are not to scale and do not represent detailed images of the respective products.

Cutting, Stripping, Skinning

Cutting tools for large diameters

KS 20 cable shears



KS 20 cable shears

Benefits

- Adjustable screw-joint
- Easy and clean cut by using only one hand
- Less force required due to favourable transmission ratio and new blade geometry

Application range

- Cuts copper and aluminium cables with up to 20 mm outer diameter
- Cutting with precision grinding

Product features

- Material: special tool steel, forged, burnished head
- Pre- and after-cut (1st and 2nd blade) allows cables with an outer diameter up to 20 mm to be cut
- Not suitable for steel wire and hard-drawn copper conductors

Article number	Article designation	For outer diameter (mm)	Weight (kg)	Length (mm)	Pieces / PU
62120045	KS 20	20.0	0.3	200	1

Photographs are not to scale and do not represent detailed images of the respective products.

Cable shears KT 4 and KT 5



Cable shears KT 4 and KT 5

Benefits

- Trouble-free cutting with lightweight and optimum transmission ratio
- One-hand operation through ratchet principle
- Less power required due to wave-like polished blades

Product features

- Optimum leverage due to 2-way gear rim drive
- Swivel knife can be unlocked in any cutting position with a press of the thumb
- Cuts smoothly and cleanly without crushing

Application range

- Not suitable for steel wire / hard aluminium alloys / hard-drawn copper conductors

Note

- Also suitable for stripping wires

Article number	Article designation	For outer diameter (mm)	Weight (kg)	Length (mm)	Pieces / PU
61813750	KT 4	32.0	0.545	250	1
61813760	Spare blade KT 4	-	-	-	1
61813770	KT 5	52.0	0.74	280	1
61813775	Spare blade KT 5	-	-	-	1

Photographs are not to scale and do not represent detailed images of the respective products.

PTS 4 stripping and cutting tool

Benefits

- Self-regulating knife prevents damage to the conductor
- Stripping and cutting possible with a pair of integrated side-cutting pliers
- Simultaneous stripping of multiple cores in the same cable possible

Application range

- Stripping and cutting tool
- Stripping wires and strands from 0.25 - 4 mm²

Product features

- Changeable pressure of bolt dies



Article number	Article designation	For mm ²	Length (mm)	Weight (kg)	Pieces / PU
61725950	PTS 4	0.25 - 4	170	0.2	1
61753620	Spare spring PTS 4				1

Photographs are not to scale and do not represent detailed images of the respective products.

EASY STRIP 2 stripping and cutting tool

Benefits

- Reliable: tested for more than 150,000 stripping operations
- Flexible: easily interchangeable stripping cartridges. Largest possible stripping capacity of all tools of this type
- Precise adjustable positions ensure that insulations (including those with small dimensions) can be removed without damaging the conductors
- Ergonomic design: attractive, soft handle, optimised grip-width, angled-head, lightweight; ensuring convenience and ease of use
- Economical: spare stripping cartridges and blades available

Technical data

<input checked="" type="checkbox"/>	General Stripping range: 0.02 - 16.0 mm ²
<input checked="" type="checkbox"/>	Weight 136 g
<input checked="" type="checkbox"/>	Length Overall dimensions: L x H x W = 191 x 123 x 20 mm
<input checked="" type="checkbox"/>	Info Cutting capacity: rigid cables - 1.5 mm ² Flexible conductors - up to 10 mm ²



Application range

- Expanded strip range (0.02 to 16 mm²) and suitable for a multitude of insulation types
- Self-adjusting cutting and stripping tool for commercially available cables and conductors (90 % of all applications can be stripped without setting the tool manually)
- Easy to change stripping cassettes enable precise stripping of different insulation materials (e.g. PVC/Teflon) and diameters with a single tool
- Easy Strip 2 is an ergonomical, portable and lightweight tool that is also suitable for production and local use

Product features

- No MTW single wires 16.00 mm² can be machined

Article number	Article designation	For mm ²	For insulation	Cartridge shape	Pieces / PU
61735800	EASY STRIP 2 incl. X-cartridge	0.02 - 10	PVC etc.	straight	1
61735805	EASY STRIP 2 incl. V-cartridge	0.1 - 4	Teflon etc.	V-form	1
61735807	EASY STRIP 2 incl. X-cartridge	4 - 16	PVC etc.	round	1
61735806	EASY STRIP 2 support jaws				-
Cartridges					
61735801	X - cartridge	0.02 - 10	PVC etc.	straight	1
61735802	XL - cartridge	4 - 16	PVC etc.	round	1
61735803	V - cartridge	0.1 - 4	Teflon etc.	V-form	1

Photographs are not to scale and do not represent detailed images of the respective products.

Universal strip stripping and cutting tool



Benefits

- Special pliers for high-quality, damage-free stripping of sheath and insulation from all single wires and possibly multi-wire cables from 0.03 to 16 mm²
- For use with a great variety of insulation with differing hardness and dimension
- Interchangeable blades for different cable cross sections

Application range

- Universal stripping pliers with interchangeable stripping blades for cross-sections of 0.03 to 16 mm²
- Suitable for fluoropolymer & PVC cores, AS-I, Solar, POF cables

Product features

- Design: chrome-plated with plastic handle cover
- Interchangeable blades for different cable cross sections

Design

- Additional blades are available upon request
- No crushing/deformation of cable ends

Included

- Tool and length stop

Article number	Article designation	For mm ²	Stripping of	Length (mm)	Weight (kg)	Pieces / PU
Interchangeable blade						
21920005	Universal Strip without stripping knife			194	0.41	1
21920009	DIN single cores	0.14 - 6	PVC			1
21920122	Solar stripping knife	1.5 - 6				1
21920126	POF 1, 2, 4-wire stripping knife		PVC/PUR			1
21920006	Fluoropolymer stripping knife	0.03 - 2	Fluoropolymer			1
21920004	Fluoropolymer stripping knife	2.5 - 10	Fluoropolymer			1
21920008	Fluoropolymer stripping knife	16	Fluoropolymer			1
21920135	AS I stripping knife		rubber/TPE/PVC			1
Complete tool (incl. assembled blade)						
21920141	Universal Strip DIN single wires	0.14 - 6	PVC			1
21920125	Universal Strip POF 1, 2, 4-wire		PVC/PUR			1
21920129	Universal Strip Fluoropolymer 0,03-2,08	0.03 - 2.08	Fluoropolymer			1
21920130	Universal Strip Fluoropolymer 2,5-10 mm ²	2.5 - 10	Fluoropolymer			1
21920131	Universal Strip Fluoropolymer 16	16	Fluoropolymer			1
21920140	Universal Strip AS I		rubber/TPE/PVC			1
21920120	Universal Strip Solar	1.5 - 6				1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Additional blades are available upon request

STAR STRIP stripping tool



STAR STRIP stripping tool

Benefits

- Economical: spare blades are available and can be kept in a box on the tool.
- User-friendly: Specific locking positions for circular, longitudinal or spiral cuts. The blade automatically returns to its start position at the end of a stripping process, thus reducing the possibility of breaking the blade. No special tool is required to replace the hook, and the height of the blade is adjustable.
- Large capacity: with the interchangeable hook, STAR STRIP can replace two or more comparable products.
- Robust: tested for more than 100,000 stripping operations
- STAR STRIP fits in your hand comfortably and is user-friendly.

Application range

- Adjustable stripping tool for round cables made with various insulation materials
- Professional stripping tool for cables of all insulation types.
- The unique cable retention hook for this type of tool gives STAR STRIP an unmatched cable stripping capacity of up to 40 mm using a single tool.

Product features

- Through the various interchangeable hooks, the STAR STRIP can be used for cables with a diameter of 4.5 - 25 mm and 20 - 40 mm
- Suitable for circular, longitudinal and spiral cuts



Info

- Special polished stripping knives suitable for problematical insulation materials such as PUR, fluoropolymers, glass fibre, TPE

Technical data



Weight
(with large hook): 116 g



Length
Large hook dimensions: L x H x W 167 x 52 x 30.5 mm
Small hook dimensions: L x H x W 150 x 42 x 30.5 mm

Included

- Tool with die, small and large hook without spare die

Article number	Article designation	For outer diameter (mm)	Length (mm)	Weight (kg)	Pieces / PU
61735820	STAR STRIP	4.5 - 40.0	150	0.116	1
61735821	STAR STRIP spare blade				1
61735822	STAR STRIP spare hook, small	4.5 - 25.0			1
61735823	STAR STRIP spare hook, large	20.0 - 40.0			1

Photographs are not to scale and do not represent detailed images of the respective products.

For current information see: www.lappgroup.com

SMARTSTRIP stripping tool

Benefits

- Adjustable cutting depth via screw-setting, which enables the stripping of multi-stage insulated cables with different sheath thicknesses
- Self-tightening handle guides the knife cleanly on the cable

Design

- Pull back the knife before removing the cable from the cutting tool

Suitable cables

- UNITRONIC® LiYD 11Y Page 284



Application range

- Special stripping tool for data cables
- Adjustable stripping tool for round cables made with various insulation materials
- For fast, simple stripping of different insulation materials (especially PUR) with outer diameters up to 10 mm

Article number	Article designation	For outer diameter (mm)	Length (mm)	Weight (kg)	Pieces / PU
61744180	Smartstrip	max. 10.0	100	0.036	1

Photographs are not to scale and do not represent detailed images of the respective products.

DATA STRIP stripping tool



DATA STRIP stripping tool

Benefits

- Robust: made from a new, pressure-proof nylon, DATA STRIP was tested with 50,000 stripping operations
- 9 precise and adjustable positions on the setting wheel ensure easily reproducible results
- User-friendly: open the stripping shaft by simply pressing the tool together, and insert the cable. Turn the tool, remove the insulation and pull the cut-off cable sheathing from the tool.
- Flexible: strips most multi-core cables and glass-fibre cables with a diameter of up to 11 mm

Design

- Due to its unique design, the cable can be easily inserted by simply pressing the tool together
- The tool is equipped with an adjustment wheel with 9 positions for adjusting the blade height and guarantees precise and reproducible stripping results.
- The "x" position on the wheel enables the tool to close so that the attached blade cartridge can be ejected and replaced with a new one quickly and safely.

Suitable cables

- UNITRONIC® LiYY Page 258

Technical data

<input checked="" type="checkbox"/>	General Insulation thickness: up to 1 mm
<input type="checkbox"/>	Diameter in For outer diameter: 2.5 - 11 mm
<input type="checkbox"/>	Weight 28 g
<input checked="" type="checkbox"/>	Length Dimensions: L 90.5 x W 39.5 x H 19 mm

Application range

- Special stripping tool for data cables
- Precision stripping tool for stripping signal, telephone, AV, control and data transmission cables made up of copper and glass fibres.

Article number	Article designation	For outer diameter (mm)	Weight (kg)	Pieces / PU
61735810	DATA STRIP	2.5 - 11.0	0.028	1
61735811	DATA STRIP spare blade			1

Photographs are not to scale and do not represent detailed images of the respective products.

FC Strip stripping tool



Benefits

- Fast: ready-to-connect stripping - outer sheath and copper screening braid are stripped in one simple step, saving a considerable amount of time
- Safe: no cable damage
- The adjusting screws enable the tool to be adjusted for all Fast Connect cables.

Application range

- Strip Fast Connect conductors in one step by using the dual-level stripping tool
- Suitable for outer diameters from 2.5 to 8.0 mm

Design

- Knives have defined distances so that the outer sheath and the screen braid are stripped cleanly in one step.
- This helps to prevent damage to the cable resulting from poor stripping.

Suitable cables

- UNITRONIC® BUS PB FRNC FC Page 304

Article number	Article designation	Suitable for:	Pieces / PU
21124030	FC strip incl. knife	Fast Connect cables	1
21124040	FC Strip without knife cartridge		1
21124041	FC Strip knife cartridge		1

Photographs are not to scale and do not represent detailed images of the respective products.

AS-I STRIP special stripping tool



Benefits

- Automatic setting of blades
- No damage to single cores

Application range

- For TPE, rubber and PUR cables

Product features

- The plier body is made of glass fibre-reinforced polyamide and meets the highest requirements.
- The special shape of the cable is reflected in the blades

Suitable cables

- UNITRONIC® BUS ASI Page 300

Article number	Article designation	Suitable for:	Stripping of	Length (mm)	Weight (kg)	Pieces / PU
61735831	AS-I STRIP special	AS-Interface	TPE, rubber, PUR	160	0.12	1

Photographs are not to scale and do not represent detailed images of the respective products.

AVG 0160 cable stripping and twisting machine



Benefits

- High start and stop speed enables high production output
- Remainder insulation falls into the waste tray
- Left and right rotation for optimum twisting of any type of strand

Application range

- Special polished stripping knives suitable for problematical insulation materials such as PUR, fluoropolymers, glass fibre, TPE
- Revolving head allows exact setting of cutting depth

Technical data

- Caution**
Twist spring set must be ordered separately
- Diameter in**
Cross-section range from 0.03 - 6.0 mm² (external diameter 1.9 - 5.7 mm)
Max. stripping length: 29 mm
- Note**
Dimensions: L 230 x W 140 x H 150 mm
- Info**
Electrical connection: 110/220/240 V/Hz
Rotation speed: 1850 rpm

Approvals



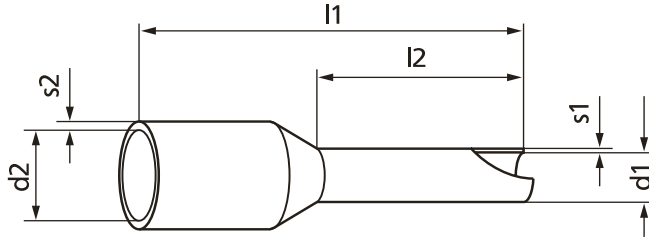
Included

- Included: control pedal

Article number	Article designation	For mm ²	For AWG	Length (mm)	Weight (kg)	Pieces / PU
61790760	AVG 0160	0.03 - 6	32 - 10	230	5.65	1
61790761	AVG 0160 spare blade					1
61790762	Twist spring set must be ordered separately					1

Photographs are not to scale and do not represent detailed images of the respective products.

Conductor end sleeves insulated



Conductor end sleeves insulated

Benefits

- The funnel-shaped opening makes it easy to slip them onto the strands.

Application range

- Control cabinets and equipment wiring

Product features

- The conductor is permanently connected to the collar by crimping.

Approvals



- All DIN conductor end-sleeves are in accordance with DIN 46228 Part 4

Note

- For processing tools see the keyword index "crimping pliers for conductor end sleeves"

Suitable tools

- PEW 8.87 crimping pliers refer to page 916
- K29 crimping pliers refer to page 917

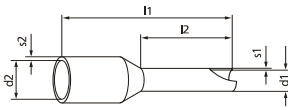
Technical data

- Note**
Halogen-free
- Material**
Copper/PP
Surface: tin-plated
- Temperature range**
Permanent load from -55°C to +105°C

Article number	Article designation	For mm ²	AWG	Core colour	l1 mm	l2 mm	d 1 mm	s 1 mm	d 2 mm	s 2 mm	Pieces / PU
61721866	AHI N 0,25/6	0.25	24	light blue	10.50	6.0	0.80	0.25	2.00	0.25	500
61721867	AHI L 0,25/8	0.25	24	light blue	12.50	8.0	0.80	0.25	2.00	0.25	500
61721868	AHI N 0,34/6	0.34	24	turquoise	10.50	6.0	0.80	0.25	2.00	0.25	500
61721869	AHI L 0,34/8	0.34	24	turquoise	12.50	8.0	0.80	0.25	2.00	0.25	500
61801580	AHI DIN K 0,5/6	0.50	20	white	11.50	6.0	1.10	0.15	2.50	0.25	500
61801590	AHI DIN N 0,5/8	0.50	20	white	13.50	8.0	1.10	0.15	2.50	0.25	500
61801600	AHI DIN HL 0,5/10	0.50	20	white	15.50	10.0	1.10	0.15	2.50	0.25	500
61721871	AHI N 0,5/8	0.50	20	orange	13.50	8.0	1.10	0.15	2.50	0.25	500
61801620	AHI DIN K 0,75/6	0.75	20	grey	12.00	6.0	1.30	0.15	2.80	0.25	500
61801630	AHI DIN N 0,75/8	0.75	20	grey	14.00	8.0	1.30	0.15	2.80	0.25	500
61801640	AHI DIN HL 0,75/10	0.75	20	grey	16.00	10.0	1.30	0.15	2.80	0.25	500
61801650	AHI DIN L 0,75/12	0.75	20	grey	18.00	12.0	1.30	0.15	2.80	0.25	500
61721880	AHI N 0,75/8	0.75	20	white	14.00	8.0	1.30	0.15	2.80	0.25	500
61801660	AHI DIN K 1/6	1.00	18	red	12.50	6.0	1.50	0.15	3.00	0.30	500
61801670	AHI DIN N 1/8	1.00	18	red	14.50	8.0	1.50	0.15	3.00	0.30	500
61801680	AHI DIN HL 1/10	1.00	18	red	16.50	10.0	1.50	0.15	3.00	0.30	500
61801690	AHI DIN L 1/12	1.00	18	red	18.50	12.0	1.50	0.15	3.00	0.30	500
61721890	AHI N 1/8	1.00	18	yellow	14.50	8.0	1.50	0.15	3.00	0.30	500
61801700	AHI K 1,5/6	1.50	16	black	12.50	6.0	1.80	0.15	3.40	0.30	500
61801710	AHI DIN N 1,5/8	1.50	16	black	14.50	8.0	1.80	0.15	3.40	0.30	500
61801720	AHI DIN HL 1,5/10	1.50	16	black	16.50	10.0	1.80	0.15	3.40	0.30	500
61801730	AHI DIN L 1,5/18	1.50	16	black	24.50	18.0	1.80	0.15	3.40	0.30	500
61721900	AHI N 1,5/8	1.50	16	red	14.50	8.0	1.80	0.15	3.40	0.30	500
61721910	AHI HL 1,5/10	1.50	16	red	16.50	10.0	1.80	0.15	3.40	0.30	500
61746720	AHI L 1,5/18	1.50	16	red	24.50	18.0	1.80	0.15	3.40	0.30	500
61801750	AHI DIN N 2,5/8	2.50	14	blue	15.00	8.0	2.30	0.15	4.20	0.30	500
61801760	AHI DIN HL 2,5/12	2.50	14	blue	19.00	12.0	2.30	0.15	4.20	0.30	500
61801770	AHI DIN L 2,5/18	2.50	14	blue	25.00	18.0	2.30	0.15	4.20	0.30	500
61801780	AHI DIN N 4/10	4.00	12	grey	17.50	10.0	2.90	0.20	4.80	0.30	500
61801790	AHI DIN HL 4/12	4.00	12	grey	20.00	12.0	2.90	0.20	4.80	0.30	500
61801800	AHI DIN L 4/18	4.00	12	grey	26.00	18.0	2.90	0.20	4.80	0.30	100
61801810	AHI DIN N 6/12	6.00	10	yellow	20.00	12.0	3.60	0.20	6.20	0.30	100
61801820	AHI DIN L 6/18	6.00	10	yellow	25.00	18.0	3.60	0.20	6.20	0.30	100
61721940	AHI N 6/12	6.00	10	black	20.00	12.0	3.60	0.20	6.20	0.30	100
61721950	AHI L 6/18	6.00	10	black	26.00	18.0	3.60	0.20	6.20	0.30	100
61801830	AHI DIN N 10/12	10.00	8	red	21.00	12.0	4.60	0.20	7.50	0.30	100
61801840	AHI DIN L 10/18	10.00	8	red	27.00	18.0	4.60	0.20	7.50	0.30	100
61721960	AHI N 10/12	10.00	8	ivory	21.00	12.0	4.60	0.20	7.50	0.30	100
61721970	AHI L 10/18	10.00	8	ivory	27.00	18.0	4.60	0.20	7.50	0.30	100
61801850	AHI DIN N 16/12	16.00	6	blue	23.00	12.0	6.00	0.20	8.80	0.40	100
61801860	AHI DIN L 16/18	16.00	6	blue	29.00	18.0	6.00	0.20	8.80	0.40	100
61721980	AHI N 16/12	16.00	6	green	23.00	12.0	6.00	0.20	8.80	0.40	100
61721990	AHI L 16/18	16.00	6	green	29.00	18.0	6.00	0.20	8.80	0.40	100
61801870	AHI DIN N 25/16	25.00	4	yellow	29.00	16.0	7.50	0.20	11.00	0.50	50
61801890	AHI DIN L 25/22	25.00	4	yellow	35.00	22.0	7.50	0.20	11.00	0.50	50
61746770	AHI N 25/16	25.00	4	brown	29.00	16.0	7.50	0.20	11.00	0.50	50
61746780	AHI L 25/22	25.00	4	brown	35.00	22.0	7.50	0.20	11.00	0.50	50
61801900	AHI DIN N 35/16	35.00	2	red	30.00	16.0	8.50	0.20	12.50	0.50	50
61801920	AHI DIN L 35/25	35.00	2	red	39.00	25.0	8.50	0.20	12.50	0.50	50
61746790	AHI N 35/16	35.00	2	beige	30.00	16.0	8.50	0.20	12.50	0.50	50
61746800	AHI L 35/25	35.00	2	beige	39.00	25.0	8.50	0.20	12.50	0.50	50
61801930	AHI DIN N 50/20	50.00	1	blue	36.00	20.0	10.50	0.30	15.00	0.60	50
61801940	AHI DIN L 50/25	50.00	1	blue	41.00	25.0	10.50	0.30	15.00	0.60	50
61801950	AHI N 70/20	70.00	2/0	yellow	37.00	20.0	12.70	0.40	16.00	0.60	25
61801960	AHI L 70/27	70.00	2/0	yellow	44.00	27.0	12.70	0.40	16.00	0.60	25
61801970	AHI N 95/25	95.00	3/0	red	44.00	25.0	14.70	0.40	18.00	0.60	25
61801980	AHI N 120/27	120.00	4/0	blue	48.00	27.0	16.70	0.50	21.00	0.70	25
61801990	AHI N 150/32	150.00	300	yellow	58.00	32.0	19.50	0.50	23.00	1.00	25

K = short; N = medium; HL = large; L = extra large; Other sizes and colours are available upon request
Photographs are not to scale and do not represent detailed images of the respective products.

Deciband AHIB insulated conductor end sleeves



Application range

- Packs of insulated conductor end sleeves with mini-crimp seal

Approvals



Design

- For processing tools see the keyword index "crimping pliers for conductor end sleeves"

Included

- Insulated conductor end sleeves in standard length in strips with 10 linked mini-crimp bags of 100 conductor end sleeves
- Mini crimp lock for individual separation of bags

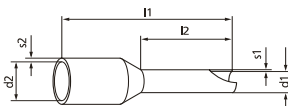
Technical data

- General**
Halogen-free
- Material**
Copper/PP
Surface: tin-plated
- Temperature range**
-55°C to +105°C

Article number	Article designation	For mm ²	Core colour	l1 mm	l2 mm	d1 mm	s1 mm	d2 mm	s2 mm	Content	Pieces / PU
61794750	Deciband AHIB	0.25	light blue	10.5	6	0.8	0.25	2.0	0.25	10 x 100	1
61794760	Deciband AHIB	0.34	turquoise	10.5	6	0.8	0.25	2.0	0.25	10 x 100	1
61794770	Deciband AHIB	0.50	orange	13.5	8	1.1	0.15	2.5	0.25	10 x 100	1
61794780	Deciband AHIB	0.75	white	14.0	8	1.3	0.15	2.8	0.25	10 x 100	1
61794790	Deciband AHIB	1.00	yellow	14.5	8	1.5	0.15	3.0	0.30	10 x 100	1
61794800	Deciband AHIB	1.50	red	14.5	8	1.8	0.15	3.4	0.30	10 x 100	1
61794810	Deciband AHIB	2.50	blue	15.0	8	2.3	0.15	4.2	0.30	10 x 100	1

Other sizes and colours are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

Conductor end sleeves AHK, insulated



Benefits

- Thicker insulation and greater wall thickness for higher loads
- Suitable for all short circuit and earth fault-resistant cables up to 3 kV due to enlarged insulation sleeves

Application range

- For cables with thick insulation
- Special conductor end sleeve model with large plastic collar for thick insulation cables (e.g. NSGAFÖU).
- Suitable for unprotected connections on control and distribution panels, rail vehicles, solar systems, ignition cables etc.

Approvals



Note

- For processing tools see the keyword index "crimping pliers for conductor end sleeves"

Suitable cables

- NSGAFöu 1.8/3 kV Page 84

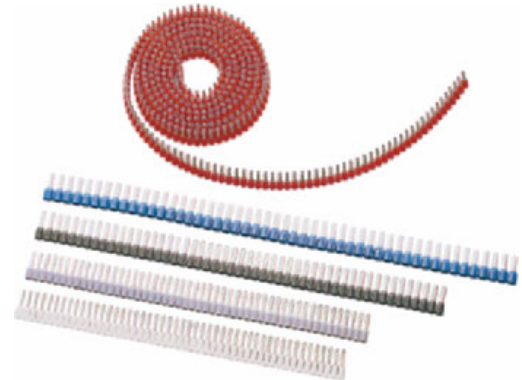
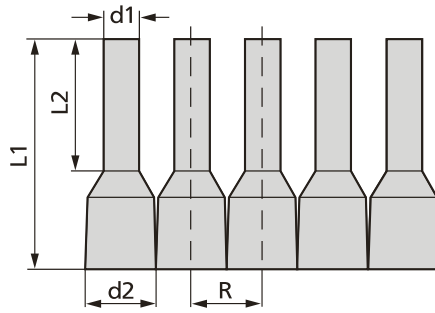
Technical data

- Material**
Copper/PP
Surface: tin-plated
- Temperature range**
-50 °C to +100 °C

Article number	Article designation	For mm ²	AWG	Core colour	l1 mm	l2 mm	d 1 mm	s1 mm	d 2 mm	s2 mm	Pieces / PU
61746500	AHK 1,5/8	1.50	16	black	17.50	8.0	1.80	0.15	7.50	0.30	100
61746501	AHK 1,5/10	1.50	16	black	19.50	10.0	1.80	0.15	7.50	0.30	100
61746502	AHK 2,5/8	2.50	14	blue	17.50	8.0	2.30	0.15	8.00	0.30	100
61746503	AHK 2,5/12	2.50	14	blue	21.50	12.0	2.30	0.15	8.00	0.30	100
61746504	AHK 4/10	4.00	12	grey	19.50	10.0	2.90	0.20	9.50	0.30	100
61746505	AHK 6/12	6.00	10	yellow	23.00	12.0	3.60	0.20	10.00	0.30	100
61746506	AHK 10/12	10.00	8	red	24.00	12.0	4.60	0.20	11.50	0.30	100
61746507	AHK 16/12	16.00	6	blue	25.50	12.0	6.00	0.20	13.50	0.30	100

Photographs are not to scale and do not represent detailed images of the respective products.

DIN-Coil conductor end sleeves



DIN-Coil conductor end sleeves

Application range

- Insulated conductor end sleeves in strips, DIN 46228, Part 4
- DIN strips, available in coils of up to 3000 items for working with automatic crimping machines

Approvals



Included

- Coil diameter: approx. 25 cm

Technical data



Material
Copper/PP
Surface: tin-plated



Temperature range
Permanent load -55°C up to +105°C, temporary load +120°C

Article number	Article designation	For mm ²	Core colour	I1 mm	I2 mm	d1 mm	d2 mm	R mm	Contents (unit)
61802052	DIN coil 0.5	0.50	white	14.5	8	1.1	2.6	3.5	3,000 x 1
61802054	DIN coil 0.75	0.75	grey	14.5	8	1.3	2.8	3.6	3,000 x 1
61802056	DIN coil 1.0	1.00	red	14.5	8	1.5	3.0	3.9	3,000 x 1
61802058	DIN coil 1.5	1.50	black	14.5	8	1.8	3.4	4.2	2,500 x 1
61802060	DIN coil 2.5	2.50	blue	14.5	8	2.3	4.2	5.0	1,500 x 1

Photographs are not to scale and do not represent detailed images of the respective products.

DIN-strips for QUADRO



DIN-strips for QUADRO

Application range

- Processing tool/installation tool
- Versatile stripping and crimping pliers

Approvals



Design

- Insulated conductor end sleeves in strips, DIN 46228, Part 4 for QUADRO

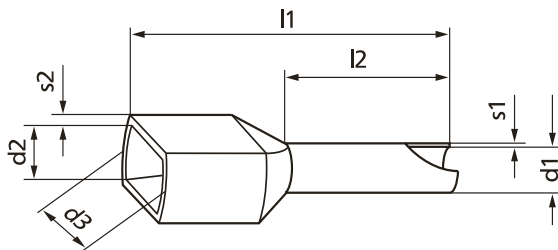
Suitable tools

- QUADRO multifunction tool refer to page 915

Article number	Article designation	For mm ²	AWG	Core colour	I1 mm	I2 mm	d1 mm	d2 mm	R mm	Pieces / PU
61805170	DIN Strips 0,50	0.50	20	white	14.00	8.0	1.10	2.60	3.50	500
61805180	DIN Strips 0,75	0.75	20	grey	14.00	8.0	1.30	2.80	3.60	500
61805190	DIN Strips 1,00	1.00	18	red	14.00	8.0	1.50	3.00	3.90	500
61805200	DIN Strips 1,50	1.50	16	black	14.00	8.0	1.80	3.40	4.20	500
61805210	DIN Strips 2,50	2.50	14	blue	14.00	8.0	2.30	4.20	5.00	500

Photographs are not to scale and do not represent detailed images of the respective products.

TWIN conductor end sleeves



TWIN conductor end sleeves

Benefits

- Special shape of plastic collar enables simultaneous holding of two strand conductors
- Correct crimping of two conductors in a TWIN conductor end sleeve achieves a proper electrical and mechanical connection

Application range

- Twin conductor end sleeves in the assortment box

Approvals



Design

- For processing tools see the keyword index "crimping pliers for conductor end sleeves"

Suitable tools

- KEBS 0560 TWIN crimping pliers refer to page 917

Technical data



Info
Halogen-free



Material
Copper/PP
Surface: tin-plated



Temperature range
Permanent load -55°C up to +105°C, temporary load +120°C

Article number	Article designation	For mm ²	AWG	Core colour	l1 mm	l2 mm	d 1 mm	s1 mm	d 2 mm	d 3 mm	s2 mm	Pieces / PU
61801999	AHI-TWIN	2.00 x 0.50	2 x 20	white	15.00	8.0	1.50	0.15	2.30	4.50	0.25	500
61802000	AHI-TWIN	2.00 x 0.75	2 x 20	grey	15.00	8.0	1.80	0.15	2.60	5.10	0.25	500
61802010	AHI-TWIN	2.00 x 1.00	2 x 18	red	15.00	8.0	2.05	0.15	3.00	5.10	0.30	500
61802020	AHI-TWIN	2.00 x 1.50	2 x 16	black	16.00	8.0	2.30	0.15	3.50	6.40	0.30	500
61802030	AHI-TWIN	2.00 x 2.50	2 x 14	blue	18.50	10.0	2.90	0.20	4.00	7.50	0.30	500
61802032	AHI-TWIN	2.00 x 4.00	2 x 12	grey	23.00	12.0	3.80	0.20	4.90	8.60	0.30	100
61802033	AHI-TWIN	2.00 x 6.00	2 x 10	yellow	25.00	14.0	4.60	0.20	5.80	9.60	0.40	100
61802034	AHI-TWIN	2.00 x 10.00	2 x 8	red	26.00	14.0	6.50	0.20	7.00	12.60	0.40	100
61802035	AHI-TWIN	2.00 x 16.00	2 x 6	BU	30.00	14.0	8.20	0.20	9.60	18.40	0.40	50

Other sizes and colours are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.



DIN-assorted boxes conductor end sleeves / AHI assorted boxes / TWIN assorted boxes



TWIN assorted boxes



AHI assorted boxes



DIN-assorted boxes conductor end sleeves

Benefits

- Convenient assortment boxes - several diameters always at your fingertips

Application range

DIN-assorted boxes conductor end sleeves

- DIN conductor end sleeves
- Manufacturing of control cabinets and equipment

AHI assorted boxes

- AHI assortment box
- Manufacturing of control cabinets and equipment

TWIN assorted boxes

- TWIN assortment box
- Manufacturing of control cabinets and equipment

Approvals



- The insulated conductor end sleeves are in accordance with DIN 46228, part 4 (0.25 mm² and 0.34 mm² not standardised) in assortment boxes

Note

- For processing tools see the keyword index "crimping pliers for conductor end sleeves"

Design

DIN-assorted boxes conductor end sleeves

- DIN assortment box I
30 x 0.25 - 6 mm BU, 30 x 0.34 - 6 mm YE, 30 x 0.5 - 8 mm WH, 30 x 0.75 - 8 mm GY, 30 x 1.00 - 8 mm RD
- DIN assortment box II:
50 x 0.5 - 8 mm WH, 100 x 0.75 - 8 mm GY, 100 x 1.00 - 8 mm RD, 100 x 1.5 - 8 mm BK, 50 x 2.5 - 8 mm BU
- DIN assortment box III:
40 x 4.00 - 10 mm GY, 20 x 6.0 - 12 mm YE, 20 x 10.00 - 12 mm RD, 10 x 16.00 - 12 mm BU

AHI assorted boxes

- AHI assortment box I (yellow):
30 x 0.25 - 6 mm LBU, 30 x 0.34 - 6 mm TQ, 30 x 0.5 - 8 mm ON, 30 x 0.75 - 8 mm WH, 30 x 1.00 - 8 mm YE
- AHI assortment box II (orange):
50 x 0.5 - 8 mm OG, 100 x 0.75 - 8 mm WH, 100 x 1.00 - 8 mm YE, 100 x 1.5 - 8 mm RD, 50 x 2.5 - 8 mm BU

- AHI assortment box III (blue):

50 x 4.00 - 10 mm GY, 20 x 6.0 - 12 mm BK, 20 x 10.00 - 12 mm WH, 10 x 16.00 - 12 mm GN

TWIN assorted boxes

- TWIN assortment box
- 2x0,75 - 8mm, 2x1,00 - 8mm, 2x1,5 - 8mm, 2x2,5 - 10mm

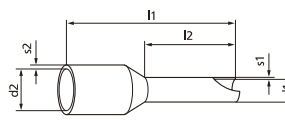
Article number	Article designation	For mm ²	Contents (unit)	PU
DIN assortment box				
61802040	DIN assortment box I	0.25 - 1.00	150 x 1	1
61802041	DIN assortment box II	0.50 - 2.50	400 x 1	1
61802042	DIN assortment box III	4.00 - 16.00	100 x 1	1
AHI assortment box				
61794720	AHI assortment box I	0.25 - 1.00	150 x 1	1
61794730	AHI assortment box II	0.50 - 2.50	400 x 1	1
61794740	AHI assortment box III	4.00 - 16.00	100 x 1	1
TWIN assortment box				
61802046	TWIN assortment box	2 x 0,75 - 2 x 2,5	200 x 1	1

Photographs are not to scale and do not represent detailed images of the respective products.

Connection and crimping

Conductor end sleeves

Conductor end sleeves XL, insulated



Info

- Suitable conductor end sleeves for UL(MTW)-CSA-HAR multi-standard single cores

Benefits

- The specially produced conductor end sleeves with funnel-shaped insulation sleeve opening make it significantly easier to slip on the strands.

Application range

- Suitable conductor end sleeves for UL(MTW)-CSA-HAR multi-standard single cores

Approvals



- All DIN conductor end-sleeves are in accordance with DIN 46228 Part 4

Design

- Because of their approval for numerous markets, special conductor end sleeves with the cross sections listed below are needed for our multi-standard single cores.
- The conductor is permanently connected to the collar by crimping.

Suitable cables

- Multi-Standard SC 1 Page 203
- Multi-Standard SC 2.2
- Multi-Standard SC 2.1

Suitable tools

- PEW 8.87 crimping pliers refer to page 916

Technical data



Approvals

In accordance with DIN 46228



Note

For processing tools see the keyword index "crimping pliers for conductor end sleeves"



Info

Halogen-free and flame-retardant



Material

Sleeve made of tin-plated electrolytic copper
Polypropylene plastic collar



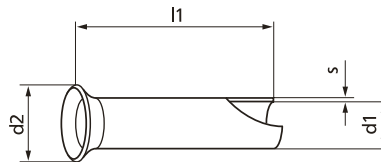
Temperature range

Permanent load from -55 °C to +105 °C
Short-term: +120 °C

Article number	Article designation	For mm ²	AWG	Core colour	l1 mm	l2 mm	d 1 mm	s1 mm	d 2 mm	s2 mm	Pieces / PU
61802061	Conductor end sleeves XL 0.5 WH 8	0.50	20	white	13.50	8.0	1.10	0.15	3.00	0.25	500
61802062	Conductor end sleeves XL 0.5 WH 10	0.50	20	white	15.50	10.0	1.10	0.15	3.00	0.25	500
61802063	Conductor end sleeves XL 0.75 GY 8	0.75	18	grey	14.00	8.0	1.30	0.15	3.40	0.30	500
61802064	Conductor end sleeves XL 0.75 GY 10	0.75	18	grey	16.00	10.0	1.30	0.15	3.40	0.30	500
61802065	Conductor end sleeves XL 1.0 RD 8	1.00	18	red	14.00	8.0	1.50	0.15	3.40	0.30	500
61802066	Conductor end sleeves XL 1.0 RD 10	1.00	18	red	16.00	10.0	1.50	0.15	3.40	0.30	500
61802067	Conductor end sleeves XL 1.5 BK 8	1.50	16	black	14.00	8.0	1.80	0.15	3.80	0.30	500
61802068	Conductor end sleeves XL 1.5 BK 10	1.50	16	black	16.00	10.0	1.80	0.15	3.80	0.30	500
61802069	Conductor end sleeves XL 16.0 BU 12	16.00	6	blue	23.00	12.0	6.00	0.20	9.50	0.40	100

Sleeves are available in 8 and 10 mm lengths, depending on the type of application.
Photographs are not to scale and do not represent detailed images of the respective products.

Conductor end sleeves AH, not insulated



Benefits

- Slightly funnel-shaped opening makes it easy to slip it onto the core

Application range

- Control cabinet wiring

Approvals



- In accordance with DIN 46228

Note

- For processing tools see the keyword index "crimping pliers for conductor end sleeves"
- Other sizes are available upon request

Suitable tools

- KEB 1025 crimping pliers refer to page 916
- KEB 3550 crimping pliers refer to page 916

Technical data



Material

Tinned electrolyte copper



Temperature range

max. +200 °C

Article number	Article designation	For mm ²	AWG	l1 mm	d 1 mm	d 2 mm	s mm	Pieces / PU
Conductor end sleeves AH, not insulated								
62120200	AH DIN 0,5/6	0.50	20	6.00	1.00	2.10	0.15	500
62120210	AH DIN 0,75/6	0.75	20	6.00	1.20	2.30	0.15	500
61721530	AH DIN 0,75/10	0.75	20	10.00	1.20	2.30	0.15	500
62120220	AH DIN 1/6	1.00	18	6.00	1.40	2.50	0.15	500
61721540	AH DIN 1/10	1.00	18	10.00	1.40	2.50	0.15	500
62120230	AH DIN 1,5/7	1.50	16	7.00	1.70	2.80	0.15	500
61721550	AH DIN 1,5/10	1.50	16	10.00	1.70	2.80	0.15	500
62120240	AH DIN 2,5/7	2.50	14	7.00	2.20	3.40	0.15	500
61721560	AH DIN 2,5/12	2.50	14	12.00	2.20	3.40	0.15	500
62120250	AH DIN 4/9	4.00	12	9.00	2.80	4.00	0.20	500
62120260	AH DIN 6/10	6.00	10	10.00	3.50	4.70	0.20	500
62120270	AH DIN 10/12	10.00	8	12.00	4.50	5.80	0.20	500
62120280	AH DIN 16/12	16.00	6	12.00	5.80	7.50	0.20	500

Other sizes are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- PLG - HSB box shrink tube refer to page 946

QUADRO multifunction tool

Benefits

- Allows for effortless insertion in the conductor end sleeve.
- Changing the magazine for another cross-section takes only seconds
- High mechanical advantage assures easy crimping.

Application range

- Multi-function tool
- Twisting
- Crimping
- Cutting

Product features

- Fanning out of strands is prevented by the integrated twist device.

Approvals

- Trapezoidal pressing in accordance with VDE 0609 Part I.

Design

- Cutting of wires up to 2.5 mm diameter

Included

- Case, tool, 3 magazines,
- Storage box for conductor end sleeves



Article number	Article designation	For mm ²	Crimping profile	Weight (kg)	Contents (unit)
61805300	QUADRO Set	0.50 - 2.50	trapezoid	-	1
61805301	QUADRO pliers	0.50 - 2.50	trapezoid	0.22	1
61805302	QUADRO magazine	0.50 - 2.50	trapezoid	-	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- DIN-strips for QUADRO refer to page 911

PEW 8.84 crimping pliers / MULTICRIMP 6 crimping pliers



PEW 8.84 crimping pliers



MULTICRIMP 6 crimping pliers

Benefits

- Uniform feed on the crimp die guarantees exact crimping profiles
- Easy to handle due to the automatic adjustment for the different crimping cross-sections

Application range

MULTICRIMP 6 crimping pliers

- Cross-section range from 0.08 - 6.0 mm² with hexagonal pressing

PEW 8.84 crimping pliers

- Cross-section range from 0.08 - 10 mm² with square pressing

Product features

MULTICRIMP 6 crimping pliers

- Forced locking for reliable, DIN-compliant crimping connections, unlockable
- Adjustable crimping pressure

PEW 8.84 crimping pliers

- Forced locking for reliable, DIN-compliant crimping connections, unlockable

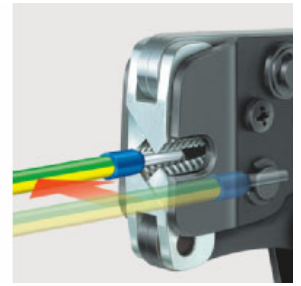
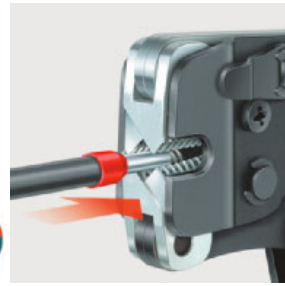
Article number	Article designation	For mm ²	Crimping profile	Weight (kg)	Length (mm)	Pieces / PU
61813732	Multicrimp 6	0.08 - 6.00	hexagon	0.38	180	1
61813735	PEW 8.84	0.08 - 10.00	square	0.38	180	1
61813731	PEW 8.84 spare spring	-	-	-	-	1

Photographs are not to scale and do not represent detailed images of the respective products.

Connection and crimping

Crimping tools for conductor end sleeves

PEW 8.87 crimping pliers



PEW 8.87 crimping pliers

Benefits

- For the simplest handling where space is limited (control cabinets, machinery/internal wiring)

Application range

- Front crimping with large cross-sectional range from 0.08 to 16 mm²

Design

- Side insertion of conductor end sleeves up to 2.5 mm² possible
- End insertion of the conductor end sleeves
- Square crimping profile with four profiled crimping surfaces

Technical data



General

- Pressing length: up to 16 mm
- Crimping profile: Square

Article number	Article designation	For mm ²	Crimping profile	Weight (kg)	Length (mm)	Pieces / PU
61813742	PEW 8.87	0.08 - 10.00	square	0.475	190	1
61813744	PEW 8.87 Plus	0.08 - 16.00	square	0.475	190	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Conductor end sleeves insulated refer to page 909

KEB 3550 crimping pliers / KEB 1025 crimping pliers



KEB 3550 crimping pliers

KEB 1025 crimping pliers

Benefits

- Unique mechanism reduces the manual force from 450 N to 250 N
- Handles suit both large and small hands
- Locking function that is released only after completion of the pressing operation

Application range

KEB 1025 crimping pliers

- Mini-force tools for pressing insulated and non-insulated conductor end sleeves from 10 - 25 mm²

KEB 3550 crimping pliers

- Mini-force tools for pressing insulated and non-insulated conductor end sleeves from 35 - 50 mm²

Product features

- Emergency release, if the pressing operation needs to be interrupted

Approvals

KEB 1025 crimping pliers

- Tested in accordance with DIN standard EN 60352-2

Design

KEB 1025 crimping pliers

- Tested for a minimum of 80,000 pressings
- Crimping profile: Trapezoid

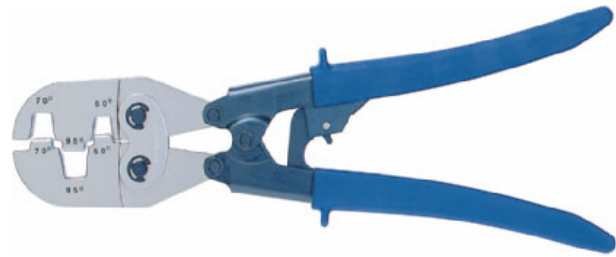
KEB 3550 crimping pliers

- Tested for a minimum of 80,000 pressings

Article number	Article designation	For mm ²	Crimping profile	Weight (kg)	Length (mm)	Pieces / PU
61791065	KEB 1025	10.00 - 25.00	trapezoid	0.5	220	1
61791095	KEB 3550	35.00 - 50.00	trapezoid	0.5	220	1

Photographs are not to scale and do not represent detailed images of the respective products.

K29 crimping pliers



Application range

- Crimping tool for very large conductor end sleeves from 50 - 95 mm²
- For pressing insulated and non-insulated conductor end sleeves

Design

- Crimping profile: Trapezoid
- 3 pressing matrices with side insertion: 50/70/95 mm²

Article number	Article designation	For mm ²	Crimping profile	Weight (kg)	Length (mm)	Pieces / PU
62120192	K29	50.00 - 95.00	trapezoid	0.8	335	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Conductor end sleeves insulated refer to page 909

KEBS 0560 TWIN crimping pliers



KEBS 0560 TWIN crimping pliers

Benefits

- Locking function that is released only after completion of the pressing operation
- Unique mechanism reduces the manual force from 450 N to 250 N
- Handles suit both large and small hands

Application range

- Pliers with front pressing for insulated/non-insulated conductor end sleeves and TWIN conductor end sleeves

Design

- Tested for a minimum of 80,000 pressings
- Front feed
- Crimping profile: Trapezoid

Product features

- Pressing length: up to 16 mm

Article number	Article designation	For mm ²	Crimping profile	Weight (kg)	Length (mm)	Pieces / PU
61791055	KEBS 0560 TWIN	2x0,5 - 2x4 (0,1 - 6)	trapezoid	0.5	220	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- TWIN conductor end sleeves refer to page 912

Connection and crimping

Crimping machines for conductor end sleeves

CrimmBoss electromagnetic crimping device



CrimmBoss electromagnetic crimping device

Benefits

- High flexibility and mobility.
- CrimmBoss can be used while standing, hanging or lying on machines, workbenches or control cabinets, with consistent high-quality results.
- Patented technology prevents incorrect or premature crimping.

Application range

- Electromagnetic crimping of insulated conductor end sleeves

Product features

- Pneumatic and electromagnetic crimping

Approvals



- Crimping quality corresponds to the standard DIN requirements

Design

- The mechanical contact will not release the electromagnetic hammer automatically unless the conductor end sleeves have been inserted completely and correctly.

Included

- Included: spare trigger tongues of 0.5-2.5 mm² and 0.14-1 mm²

Technical data

General
 Crimping profile: Trapezoid cam

Note
 Pressing length: 1 x 13 mm
 Max. pressing: 75/min.

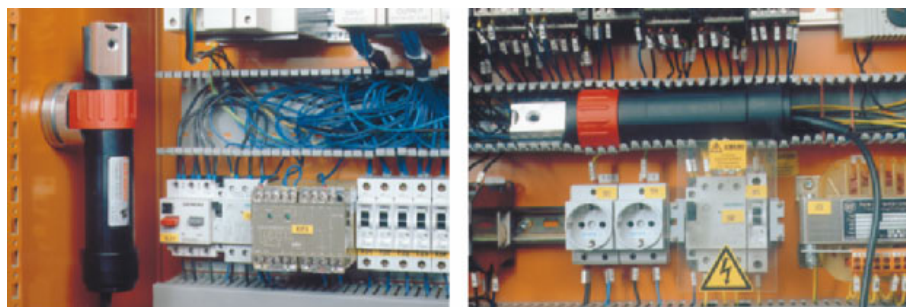
Info
 Cross-section range 0.14 - 1 mm² and 0.5 - 2.5 mm²
 Voltage range: 220/230 V/50 Hz

Article number	Article designation	For mm ²	Crimping profile	Weight (kg)	Length (mm)	Pieces / PU
Electromagnetic crimping pliers						
61806430	CrimmBoss	0,14-1/ 0,5 - 2,50	trapezoid cam	0.85	250	1

Photographs are not to scale and do not represent detailed images of the respective products.

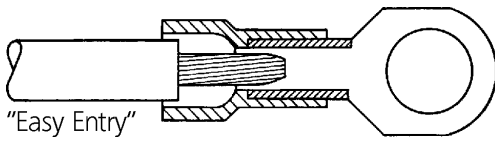
Accessories

- Conductor end sleeves insulated refer to page 909



ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

Insulated cable lugs



Insulated cable lugs

Benefits

- EASY-ENTRY funnel shape of the plastic sleeve enables simple, fast and safe insertion of the conductor
- No risk of bent and crushed cables
- For good strength and improved current conduction

Application range

- Manufacturing of control cabinets and equipment

Product features

- Hard-soldered cable lug that can be pressed in any position
- For first-class connection with simple operating principle
- Electrolytic tinning for max. corrosion protection
- Flat receptacle material in contact pressing is double-folded and hard-soldered
- Metal sleeves with internal corrugation

Approvals



- Tested in accordance with DIN IEC 60352
- File Number E334109, see table

Note

- For processing tools see the keyword index "crimping pliers for conductor end sleeves"

Design

- 1 = ring cable lugs
- 2 = forked cable lugs
- 3 = pin cable lugs
- 4 = circular connector
- 5 = connector sleeve
- 6 = butt connector
- 7 = end connector

Technical data

General
 Other sizes and colours (also DIN) are available upon request
 Halogen-free

Note
 For processing tools see the keyword index "crimping pliers for other connections"

Material
 High-quality electrolytic copper for good conductivity
 Polyamide insulation

Temperature range
 -40 °C to +105 °C
 Short-term: up to +120 °C

Suitable tools

- DSA 0110 + DSA 0725 crimping pliers refer to page 924
- CSA 0760 + KSA 0760 crimping pliers refer to page 924

Article number	Article designation	For mm²	UL approval	Connection bolt	Core colour	Pieces / PU
Ring cable lugs						
63104010	L-RZ 3	0.25 - 0.75	no	M 3	green	100
63104020	L-RZ 4	0.25 - 0.75	no	M 4	green	100
63104030	L-RZ 5	0.25 - 0.75	no	M 5	green	100
63104040	L-RA 3	0.5 - 1.5	yes	M 3	red	100
63104050	L-RA 35	0.5 - 1.5	yes	M 3.5	red	100
63104060	L-RA 4	0.5 - 1.5	yes	M 4	red	100
63104070	L-RA 5	0.5 - 1.5	yes	M 5	red	100
63104080	L-RA 6	0.5 - 1.5	yes	M 6	red	100
63104160	L-RB 3	1.5 - 2.5	yes	M 3	blue	100
63104170	L-RB 4	1.5 - 2.5	yes	M 4	blue	100
63104180	L-RB 5	1.5 - 2.5	yes	M 5	blue	100
63104190	L-RB 6	1.5 - 2.5	yes	M 6	blue	100
63104200	L-RB 8	1.5 - 2.5	yes	M 8	blue	100
63104340	L-RC 4	4 - 6	yes	M 4	yellow	100
63104350	L-RC 5	4 - 6	yes	M 5	yellow	100
63104360	L-RC 6	4 - 6	yes	M 6	yellow	100
63104370	L-RC 8	4 - 6	yes	M 8	yellow	100
63104380	L-RC 10	4 - 6	yes	M 10	yellow	50
Fork cable lugs						
63105010	L-RZ 3 F	0.25 - 0.75	no	M 3	green	100
63105020	L-RZ 4 F	0.25 - 0.75	no	M 4	green	100
63105050	L-RA 4 F	0.5 - 1.5	yes	M 4	red	100
63105060	L-RA 5 F	0.5 - 1.5	yes	M 5	red	100
63105070	L-RA 6 F	0.5 - 1.5	yes	M 6	red	100
63105130	L-RB 4 F	1.5 - 2.5	yes	M 4	blue	100
63105140	L-RB 5 F	1.5 - 2.5	yes	M 5	blue	100
63105150	L-RB 6 F	1.5 - 2.5	yes	M 6	blue	100
63105210	L-RC 4 F	4 - 6	yes	M 4	yellow	100
63105220	L-RC 5 F	4 - 6	yes	M 5	yellow	100
63105230	L-RC 6 F	4 - 6	yes	M 6	yellow	50
Narrow fork cable lugs						
63105040	L-RA 35 F	0.5 - 1.5	yes	M 3.5	red	100
63105110	L-RB 3 F	1.5 - 2.5	yes	M 3	blue	100
63105120	L-RB 35 F	1.5 - 2.5	yes	M 3.5	blue	100
Flange fork cable lugs						
63108010	L-RA 35 FF	0.5 - 1.5	no	M 3.5	red	100
63108040	L-RB 4 FF	1.5 - 2.5	no	M 4	blue	100
63108050	L-RB 5 FF	1.5 - 2.5	no	M 5	blue	100
Pin cable lugs						
63107010	L-RZP	0.25 - 0.75	no		green	100
63107020	L-RAP	0.5 - 1.5	yes		red	100
63107040	L-RBP	1.5 - 2.5	yes		blue	100
63107070	L-RCP	4 - 6	yes		yellow	100
Circular connector						
63110010	L-RABM	0.5 - 1.5	no		red	100
63110020	L-RB 5 BM	1.5 - 2.5	no		blue	100
Connector sleeve						
63111010	L-RAB	0.5 - 1.5	no		red	100
63111020	L-RB 5 B	1.5 - 2.5	no		blue	100
Butt connector						
63106020	L-RAA 15	0.5 - 1.5	yes		red	100
63106040	L-RBB 25	1.5 - 2.5	yes		blue	100
63106080	L-RCC 6	4 - 6	yes		yellow	50
End joint						
63112010	L-RBJ	1.5 - 2.5	no		blue	100
63112020	L-RCJ	4 - 6	no		yellow	100

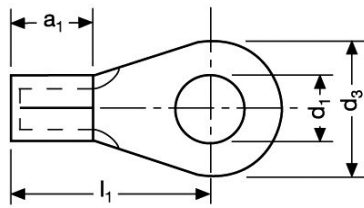
Other sizes and colours are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

Connection and crimping

Cable Lugs

Cable lugs KB



Benefits

- For first-class connection with simple operating principle
- Thus providing the best electrical conductivity (least resistance)

Application range

- Manufacturing of control cabinets and equipment
- Trains and buses

Approvals



- In accordance with VG 88710
- Coil form DIN 46234, non-insulated

Note

- For processing tools see the keyword index "crimping pliers for other connections"

Technical data



Note
s = thickness of material



Material
High-quality electrolytic copper for good conductivity



Temperature range
Max. temperature: +120°C (short-term)

Suitable tools

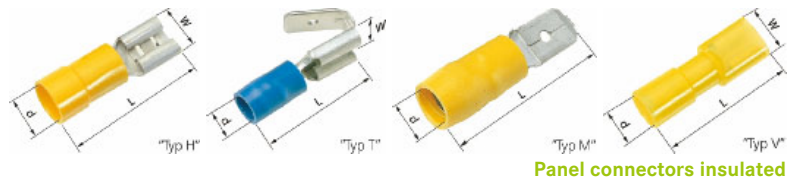
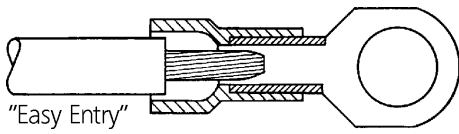
- PEW 12 universal tool refer to page 932
- WT 4454 PNEU universal pressing pliers refer to page [P1315]

Article number	Article designation	For mm ²	UL approval	AWG	Nominal size	d1	d3	l1	a1	s	Pieces / PU
63204015	KB1-2,5R DIN 46234	0.5 - 1.5	no	22-16	2.5-1.0	2.8	6.0	11.0	5.0	0.8	100
63204025	KB1-3R DIN 46234	0.5 - 1.5	no	22-16	3.2-1.0	3.2	6.0	11.0	5.0	0.8	100
63204035	KB1-3,5R DIN 46234	0.5 - 1.5	no	22-16	3.5-1.0	3.7	6.0	11.0	5.0	0.8	100
63204045	KB1-4R DIN 46234	0.5 - 1.5	no	22-16	4.0-1.0	4.3	8.0	12.0	5.0	0.8	100
63204055	KB1-5R DIN 46234	0.5 - 1.5	no	22-16	5.0-1.0	5.3	10.0	13.0	5.0	0.8	100
63204065	KB1-6R DIN 46234	0.5 - 1.5	no	22-16	6.0-1.0	6.5	10.0	13.0	5.0	0.8	100
63204075	KB1-8R DIN 46234	0.5 - 1.5	no	22-16	8.0-1.0	8.4	14.0	17.0	5.0	0.8	100
63204085	KB1-10R DIN 46234	0.5 - 1.5	no	22-16	10.0-1.0	10.5	14.0	17.0	5.0	0.8	100
63204095	KB2-5-3R DIN 46234	1.5 - 2.5	no	16-14	3.0-2.5	3.2	6.0	11.0	5.0	0.8	100
63204105	KB2,5-3,5R DIN 46234	1.5 - 2.5	no	16-14	3.5-2.5	3.7	6.0	11.0	5.0	0.8	100
63204115	KB2,5-4R DIN 46234	1.5 - 2.5	no	16-14	4.0-2.5	4.3	8.0	12.0	5.0	0.8	100
63204125	KB2,5-5R DIN 46234	1.5 - 2.5	no	16-14	5.0-2.5	5.3	10.0	14.0	5.0	0.8	100
63204135	KB2,5-6R DIN 46234	1.5 - 2.5	no	16-14	6.0-2.5	6.5	11.0	16.0	5.0	0.8	100
63204145	KB2,5-8R DIN 46234	1.5 - 2.5	no	16-14	8.0-2.5	8.4	14.0	17.0	5.0	0.8	100
63204155	KB2,5-10R DIN 46234	1.5 - 2.5	no	16-14	10.0-2.5	10.5	14.0	17.0	5.0	0.8	100
63204165	KB2,5-12R DIN 46234	1.5 - 2.5	no	16-14	12.0-2.5	13.0	18.0	20.0	5.0	0.8	100
63204175	KB6-4R DIN 46234	2.5 - 6	no	12-10	4.0-6.0	4.3	8.0	14.0	6.0	1.0	100
63204185	KB6-5R DIN 46234	2.5 - 6	no	12-10	5.0-6.0	5.3	10.0	15.0	6.0	1.0	100
63204195	KB6-6R DIN 46234	2.5 - 6	no	12-10	6.0-6.0	6.5	11.0	16.0	6.0	1.0	100
63204205	KB6-8R DIN 46234	2.5 - 6	no	12-10	8.0-6.0	8.4	14.0	19.0	6.0	1.0	100
63204215	KB6-10R DIN 46234	2.5 - 6	no	12-10	10.0-6.0	10.5	18.0	21.0	6.0	1.0	100
63204225	KB6-12R DIN 46234	2.5 - 6	no	12-10	12.0-6.0	13.0	18.0	21.0	6.0	1.0	100
63204235	KB10-5R DIN 46234	10	no	8	5.0-10.0	5.3	10.0	16.0	8.0	1.1	100
63204245	KB10-6R DIN 46234	10	no	8	6.0-10.0	6.5	11.0	17.0	8.0	1.1	100
63204255	KB10-8R DIN 46234	10	no	8	8.0-10.0	8.4	14.0	20.0	8.0	1.1	100
63204265	KB10-10R DIN 46234	10	no	8	10.0-10.0	10.5	18.0	21.0	8.0	1.1	100
63204275	KB10-12R DIN 46234	10	no	8	12.0-10.0	13.0	22.0	23.0	8.0	1.1	100
63204285	KB16-5R DIN 46234	16	no	6	5.0-16.0	5.3	11.0	20.0	10.0	1.2	100
63204295	KB16-6R DIN 46234	16	no	6	6.0-16.0	6.5	11.0	20.0	10.0	1.2	100
63204305	KB16-8R DIN 46234	16	no	6	8.0-16.0	8.4	14.0	22.0	10.0	1.2	100
63204315	KB16-10R DIN 46234	16	no	6	10.0-16.0	10.5	18.0	24.0	10.0	1.2	100
63204325	KB16-12R DIN 46234	16	no	6	12.0-16.0	13.0	22.0	26.0	10.0	1.2	100
63204335	KB25-5R DIN 46234	25	no	4	5.0-25.0	5.3	12.0	25.0	11.0	1.5	100
63204345	KB25-6R DIN 46234	25	no	4	6.0-25.0	6.5	12.0	25.0	11.0	1.5	100
63204355	KB25-8R DIN 46234	25	no	4	8.0-25.0	8.4	16.0	25.0	11.0	1.5	100
63204365	KB25-10R DIN 46234	25	no	4	10.0-25.0	10.5	18.0	26.0	11.0	1.5	100
63204375	KB25-12R DIN 46234	25	no	4	12.0-25.0	13.0	31.0	31.0	11.0	1.5	100
63204385	KB25-16R DIN 46234	25	no	4	16.0-25.0	17.0	35.0	36.0	11.0	1.5	100
63204395	KB35-6R DIN 46234	35	no	2	6.0-35.0	6.5	15.0	26.0	12.0	1.6	100
63204405	KB35-8R DIN 46234	35	no	2	8.0-35.0	8.4	16.0	26.0	12.0	1.6	100
63204415	KB35-10R DIN 46234	35	no	2	10.0-35.0	10.5	18.0	27.0	12.0	1.6	100
63204425	KB35-12R DIN 46234	35	no	2	12.0-35.0	13.0	22.0	31.0	12.0	1.6	100
63204435	KB35-16R DIN 46234	35	no	2	16.0-35.0	17.0	28.0	36.0	12.0	1.6	100
63204445	KB50-6R DIN 46234	50	no	1/0	6.0-50.0	6.5	18.0	34.0	16.0	1.8	100
63204455	KB50-8R DIN 46234	50	no	1/0	8.0-50.0	8.4	18.0	34.0	16.0	1.8	100
63204465	KB50-10R DIN 46234	50	no	1/0	10.0-50.0	10.5	18.0	34.0	16.0	1.8	100
63204475	KB50-12R DIN 46234	50	no	1/0	12.0-50.0	13.0	22.0	36.0	16.0	1.8	100
63204485	KB50-16R DIN 46234	50	no	1/0	16.0-50.0	17.0	28.0	40.0	16.0	1.8	100
63204495	KB70-6R DIN 46234	70	no	2/0	6.0-70.0	6.5	22.0	38.0	18.0	2.0	100
63204505	KB70-8R DIN 46234	70	no	2/0	8.0-70.0	8.4	22.0	38.0	18.0	2.0	100
63204515	KB70-10R DIN 46234	70	no	2/0	10.0-70.0	10.5	22.0	38.0	18.0	2.0	100
63204525	KB70-12R DIN 46234	70	no	2/0	12.0-70.0	13.0	22.0	38.0	18.0	2.0	100
63204535	KB70-16R DIN 46234	70	no	2/0	16.0-70.0	17.0	28.0	42.0	18.0	2.0	100
63204545	KB95-8R DIN 46234	95	no	3/0	8.0-95.0	8.4	24.0	42.0	20.0	2.5	50
63204555	KB95-10R DIN 46234	95	no	3/0	10.0-95.0	10.5	24.0	42.0	20.0	2.5	50
63204565	KB95-12R DIN 46234	95	no	3/0	12.0-95.0	13.0	24.0	42.0	20.0	2.5	50
63204575	KB95-16R DIN 46234	95	no	3/0	16.0-95.0	17.0	28.0	44.0	20.0	2.5	50
63204585	KB120-8R DIN 46234	120	no	4/0	8.0-120.0	8.4	24.0	44.0	22.0	3.0	25
63204595	KB120-10R DIN 46234	120	no	4/0	10.0-120.0	10.5	24.0	44.0	22.0	3.0	25
63204605	KB120-12R DIN 46234	120	no	4/0	12.0-120.0	13.0	24.0	44.0	22.0	3.0	25
63204615	KB120-16R DIN 46234	120	no	4/0	16.0-120.0	17.0	28.0	48.0	22.0	3.0	25
63204625	KB150-10R DIN 46234	150	no	5/0	10.0-150.0	10.5	30.0	50.0	24.0	3.2	25
63204635	KB150-12R DIN 46234	150	no	5/0	12.0-150.0	13.0	30.0	50.0	24.0	3.2	25
63204645	KB150-16R DIN 46234	150	no	5/0	16.0-150.0	17.0	30.0	50.0	24.0	3.2	25
63204655	KB185-10R DIN 46234	185	no	6/0	10.0-185.0	10.5	36.0	50.0	28.0	3.5	20
63204665	KB185-12R DIN 46234	185	no	6/0	12.0-185.0	13.0	36.0	50.0	28.0	3.5	20
63204675	KB185-16R DIN 46234	185	no	6/0	16.0-185.0	17.0	36.0	50.0	28.0	3.5	20
63204685	KB240-10R DIN 46234	240	no	7/0	10.0-240.0	10.5	38.0	56.0	32.0	4.0	10
63204695	KB240-12R DIN 46234	240	no	7/0	12.0-240.0	13.0	38.0	56.0	32.0	4.0	10
63204705	KB240-16R DIN 46234	240	no	7/0	16.0-240.0	17.0	38.0	56.0	32.0	4.0	10

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

Panel connectors insulated



Panel connectors insulated

Benefits

- For first-class connection with simple operating principle
- Hard-soldered cable lug that can be pressed in any position
- Thus providing the best electrical conductivity (least resistance)
- No risk of bent and crushed cables

Application range

- For breaking through the oxidation layer on the conductor when crimping

Approvals



- File Number E334111, see table

Design

- For higher tensile strength
- For good strength and improved current conduction
- Flat receptacle material in contact pressing is double-folded and hard-soldered
- EASY-ENTRY funnel shape of the plastic sleeve enables simple, fast and safe insertion of the conductor
- 1 = push-on female terminal, type H
2 = push-on piggyback terminal, type T
3 = push-on male terminal, type M
4 = push-on female terminal (fully insulated), type V

Technical data



Material
Nickel-plated brass
Polycarbonate insulation



Temperature range
-40 °C to +100 °C

Suitable tools

- DSA 0110 + DSA 0725 crimping pliers refer to page 924
- CSA 0760 + KSA 0760 crimping pliers refer to page 924

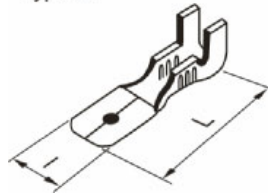
Article number	Article designation	For mm ²	UL approval	Footnote	Core colour	Blade connection	d mm	L	W mm	Pieces / PU
Blade receptacle according to DIN 46245 and similar (type H)										
63101020	L-RA 29 H	0.50 - 1.50	yes		red	2.8 x 0.5	3.3	18.5	3.5	100
63101010	L-RA 28 H	0.50 - 1.50	yes		red	2.8 x 0.8	3.3	18.5	3.5	100
63101030	L-RA 49 H	0.50 - 1.50	yes	1.3	red	4.8 x 0.5	3.7	19.0	5.7	100
63101040	L-RA 48 H	0.50 - 1.50	yes	1.3	red	4.8 x 0.8	3.7	19.0	5.7	100
63101050	L-RA 63 H	0.50 - 1.50	yes		red	6.3 x 0.8	4.0	20.0	7.6	100
63101060	L-RB 48 H	1.50 - 2.50	yes	1.3	blue	4.8 x 0.5	4.4	19.0	5.7	100
63101070	L-RB 49 H	1.50 - 2.50	yes	1.3	blue	4.8 x 0.8	4.4	19.0	5.7	100
63101080	L-RB 63 H	1.50 - 2.50	yes		blue	6.3 x 0.8	4.5	20.0	7.6	100
63101110	L-RC 63 H	4.00 - 6.00	yes		yellow	6.3 x 0.8	6.4	24.0	7.6	100
63101120	L-RC 95 H	4.00 - 6.00	no		yellow	9.5 x 1.2	6.2	31.0	11.0	100
Blade connector (type M)										
63103010	L-RA 63 M	0.50 - 1.50	yes		red	6.3 x 0.8	4.0	22.0		100
63103020	L-RB 63 M	1.50 - 2.50	yes		blue	6.3 x 0.8	4.5	22.0		100
63103040	L-RC 63 M	4.00 - 6.00	yes	1.3	yellow	6.3 x 0.8	6.3	25.0		100
Blade receptacle branch (type T)										
63102010	L-RA 63 T	0.50 - 1.50	no	1.3	red	6.3 x 0.8	3.7	22.0	7.4	100
63102020	L-RB 63 T	1.50 - 2.50	no	1.3	blue	6.3 x 0.8	4.3	22.0	7.5	50
Fully insulated blade receptacle (type V)										
61794951	L-RA 29 V	0.50 - 1.50	yes	2.3	red	2.8 x 0.5	3.8	19.3	5.0	100
61794952	L-RA 28 V	0.50 - 1.50	yes	2.3	red	2.8 x 0.8	3.8	19.3	5.0	100
61794953	L-RA 49 V	0.50 - 1.50	yes	2.3	red	4.8 x 0.5	3.6	20.2	7.4	100
61794955	L-RA 48 V	0.50 - 1.50	yes	2.3	red	4.8 x 0.8	3.6	20.2	7.4	100
61794960	L-RA 63 V	0.50 - 1.50	yes		red	6.3 x 0.8	4.4	21.0	8.8	100
61794968	L-RB 49 V	1.50 - 2.50	yes	2.3	blue	4.8 x 0.5	3.9	19.5	7.1	100
61794969	L-RB 48 V	1.50 - 2.50	yes	2.3	blue	4.8 x 0.8	3.9	19.5	7.1	100
61794970	L-RB 63 V	1.50 - 2.50	yes		blue	6.3 x 0.8	4.5	21.0	8.8	100
61794971	L-RC 63 V	4.00 - 6.00	yes	2.3	yellow	6.3 x 0.8	5.3	26.0	9.0	100

1 = PVC insulation, not easy-entry; 2 = polyamide (nylon) insulation, not easy-entry; 3 = unsoldered, with additional brass sleeve
Photographs are not to scale and do not represent detailed images of the respective products.

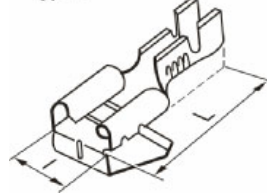
Panel connectors non-insulated



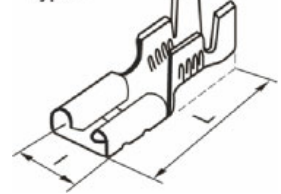
Type M



Type T



Type F



Panel connectors non-insulated

Benefits

- Soft and transparent PVC insulating sleeves provide electrical safety

Suitable tools

- DRB 0505 + DRB 0115 crimping pliers refer to page 925
- KRB 0560 crimping pliers refer to page 925

Technical data

- Material**
Brass
Electrolytically tinned
- Temperature range**
max. +200 °C

Approvals



Article number	Article designation	For mm ²	UL approval	Tool	Blade connection	I	L	Pieces / PU
Blade receptacle according to DIN 46247								
63501060	L-BA 285 F	0.50 - 1.00	no	DRB 0155	2.8 x 0.5	5.0	12.7	100
63501070	L-BA 288 F	0.50 - 1.00	no	DRB 0155	2.8 x 0.8	5.0	12.7	100
63501080	L-BA 485 F	0.75 - 1.50	no	KRB 0560	4.8 x 0.5	6.4	16.0	100
63501090	L-BA 488 F	0.75 - 1.50	no	KRB 0560	4.8 x 0.8	6.4	16.0	100
63501120	L-BA 638 F	0.75 - 1.50	no	KRB 0560	6.3 x 0.8	7.6	19.0	100
63501130	L-BB 638 F	1.50 - 2.50	no	KRB 0560	6.3 x 0.8	7.6	19.0	100
63501140	L-BC 638 F	4.00 - 6.00	no	KRB 0560	6.3 x 0.8	7.6	19.0	100
Blade receptacle with branching								
63501150	L-BA 638 T	0.50 - 1.00	no	KRB 0560	6.3 x 0.8	7.5	19.0	100
Panel connectors (Plugs)								
63501071	L-BA 288 M	0.50 - 1.00	no	DRB 0155	2.8 x 0.8	5.5	13.0	100
63501520	L-BA 638 M	0.50 - 1.00	no	KRB 0560	6.3 x 0.8	8.0	19.0	100
63501530	L-BB 638 M	1.50 - 2.50	no	KRB 0560	6.3 x 0.8	8.0	19.0	100

Photographs are not to scale and do not represent detailed images of the respective products.

ISO-sleeve



Benefits

- Soft and transparent PVC insulating sleeves provide electrical safety

Application range

- For non-insulated blade connectors

Approvals



Article number	Article designation	UL approval	Blade connection	For cable Ø (mm)	Pieces / PU
61794980	ISO sleeve	no	6.3	3.2	500

Photographs are not to scale and do not represent detailed images of the respective products.

Panel connectors with latch

Benefits

- For first-class connection with simple operating principle

Approvals



Technical data



Material
Brass



Temperature range
Typ M: max. +90 °C
Typ F: max. +110 °C



Suitable tools

- DRB 0505 + DRB 0115 crimping pliers refer to page 925

Article number	Article designation	For mm ²	UL approval	Blade connection	I	L	Pieces / PU
Blade connector with locking notch (type M)							
63501020	BM 638 M	1.50 - 2.50	no	6.3 x 0.8	16.0	28.0	100
63501022	BM-C 638 M	4.00 - 6.00	no	6.3 x 0.8	16.0	28.0	100
Blade receptacle (type F)							
63501010	B 638 F	1.50 - 2.50	no	6.3 x 0.8	7.5	19.0	100
63501012	B-C 638 F	4.00 - 6.00	no	6.3 x 0.8	7.5	19.0	100

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- Panel connectors, non-insulated

Panel connector sockets Type M / Type F

Benefits

- Quick and easy separation of connection
- Together with blade connectors, these blade connector strips enable secure and easy assembly
- New connections can be made easily without any confusion

Technical data



Material
Polyamide



Temperature range
max. +105 °C



Approvals



Article number	Article designation	UL approval	Number of pins	Width W (mm)	Height (mm)	Depth (mm)	Pieces / PU
Blade connector strips (type M)							
63300100	408-2 M	no	2.0	15.3	13.2	32.2	100
63300110	408-4 M	no	4.0	27.5	16.8	32.6	100
63300120	408-6 M	no	6.0	31.2	18.8	32.9	100
63300130	408-8 M	no	8.0	40.4	18.8	33.1	100
Panel connector-sockets (type F)							
63300140	408-2 F	no	2.0	12.6	10.0	23.2	100
63300150	408-4 F	no	4.0	24.5	14.1	24.0	100
63300160	408-6 F	no	6.0	28.2	14.9	24.3	100
63300170	408-8 F	no	8.0	37.4	15.4	24.4	100

Photographs are not to scale and do not represent detailed images of the respective products.

Connection and crimping

Crimping tools for insulated connections

New

DSA 0110 + DSA 0725 crimping pliers



DSA 0110 + DSA 0725 crimping pliers

Benefits

- Suitable for left and right-handed users
- Less force required for perfect pressing
- Clearly marked press moulds

Application range

- Safety pressing pliers for insulated connections
- For insulated cable lugs, blade connectors and other connectors

Product features

- Emergency release, if the pressing operation needs to be interrupted

Approvals

- Tested in accordance with DIN standards

Design

- Cross-section of press matrix is embossed in the cable lugs for checking
- Pressing according to the forced finish system

Technical data

General
Adjustable crimping pressure

Note
Crimping profile: Oval

Article number	Article designation	For mm ²	Weight (kg)	Length (mm)	Pieces / PU
61722050	DSA 0110	0,1 - 1,5	0.35	225	1
61722060	DSA 0725	0,5 - 2,5	0.35	192	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Panel connectors insulated refer to page 921
- Insulated cable lugs refer to page 919

New

CSA 0760 + KSA 0760 crimping pliers



CSA 0760 + KSA 0760 crimping pliers

Benefits

- Clearly marked press moulds
- Less power required due to special mechanism

Application range

- The Miniforce tool for insulated connections of 0.5 - 6 mm²

Product features

- Emergency release, if the pressing operation needs to be interrupted

Approvals

- Tested in accordance with DIN standard EN 60352-2

Design

- Cross-section of press matrix is embossed in the cable lugs for checking
- Tested for a minimum of 80,000 pressings
- Pressing according to the forced finish system
- KSA 0760:
- Comfort version with extremely long handles for two-handed operation

Technical data

Note
Crimping profile: Oval

Article number	Article designation	For mm ²	Crimping profile	Weight (kg)	Length (mm)	Pieces / PU
61722070	CSA 0760	0,5 - 6.00	oval	0.5	220	1
61790910	KSA 0760	0,5 - 6.00	oval	0.54	255	1
61751950	Spare spring CSA/KSA/DSA 0760	-				1
61722071	Crimping insert for CSA + KSA 0760	-				1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Conductor end sleeves insulated refer to page 909
- Panel connectors insulated refer to page 921

New

DRB 0505 + DRB 0115 crimping pliers



DRB 0505 + DRB 0115 crimping pliers

Benefits

- Less force required for perfect pressing
- Locking function for faultless pressing
- Clearly marked press moulds

Application range

- Also suitable for blade receptacles with latch
- Roll pressing pliers for non-insulated flat connectors with 2.8 connection

Product features

- Emergency release, if the pressing operation needs to be interrupted

Approvals

- Tested in accordance with DIN standard EN 60352-2

Design

- Tested for a minimum of 50,000 pressings
- DRB 0115:
 - Cross-section range: 0.1 - 1.5 mm²
- DRB 0505
 - Cross-section range: 0.05 - 0.5 mm²

Technical data

- General**
Adjustable crimping pressure
- Note**
Crimping profile: Roller pressing

Article number	Article designation	For mm ²	Crimping profile	For blade connectors	Weight (kg)	Length (mm)	Pieces / PU
61790930	DRB 0505	0,05 - 0,5	roller pressing	2.8	0.35	192	1
61790940	DRB 0115	0,1 - 1,5	roller pressing	2.8	0.35	192	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Panel connectors non-insulated refer to page 922
- Panel connectors with latch refer to page 923

New

KRB 0560 crimping pliers



Benefits

- Clearly marked press moulds
- Locking function for faultless pressing
- Handles suit both large and small hands
- Unique mechanism reduces the manual force from 450 N to 250 N

Application range

- The convenient roll pressing pliers for non-insulated blade connectors of 0.5 - 6 mm² with connection 4.8 and 6.3

Product features

- Emergency release, if the pressing operation needs to be interrupted

Approvals

- Tested in accordance with DIN standard EN 60352-2

Design

- Tested for a minimum of 80,000 pressings

Technical data

- General**
Adjustable crimping pressure
- Note**
Crimping profile: Roller pressing

Article number	Article designation	For mm ²	Crimping profile	For blade connectors	Weight (kg)	Length (mm)	Pieces / PU
61791100	KRBC 0560L complete	0,5 - 6,0	roller pressing	4,8 + 6,3	0,54	255	1
61790950	KRB 0560	0,5 - 6,0	roller pressing	4,8 + 6,3	0,54	255	1

Type KRB 0560L, with interchangeable positioning tool for various cable lugs, are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Panel connectors non-insulated refer to page 922

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Connection and crimping

Crimping tools for uninsulated connections

New

DKB 0325 + DKB 0360 crimping pliers



DKB 0325 + DKB 0360 crimping pliers

Benefits

- Locking function for faultless pressing
- Clearly marked press moulds
- Less force required for perfect pressing

Application range

- Safety pressing pliers for non-insulated connections
- For non-insulated cable lugs, other connectors and tubular cable lugs KR

Product features

- Emergency release, if the pressing operation needs to be interrupted

Approvals

- Tested in accordance with DIN standard EN 60352-2

Design

- Tested for a minimum of 50,000 pressings
- DKB 0360:
 - Cross-section range: 0.25 - 6.0 mm²
 - DKB 0325
 - Cross-section range: 0.25 - 2.5 mm²

Technical data



General
Adjustable crimping pressure



Note
Crimping profile: Mandrel pressing

Article number	Article designation	For mm ²	Crimping profile	Weight (kg)	Length (mm)	Pieces / PU
61722110	DKB 0325	0,25 - 2,5	mandrel pressing	0.35	192	1
61790920	DKB 0360	0,25 - 6.00	mandrel pressing	0.35	192	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Panel connectors non-insulated refer to page 922

New

KWB 4099 crimping pliers



Benefits

- Clearly marked press moulds
- Locking function for faultless pressing
- Handles suit both large and small hands
- Unique mechanism reduces the manual force from 450 N to 250 N

Application range

- The Miniforce tool for non-insulated connections of 4 - 10 mm²
- For non-insulated cable lugs, other connectors and tubular cable lugs KR

Product features

- Emergency release, if the pressing operation needs to be interrupted

Approvals

- Tested in accordance with DIN standard EN 60352-2

Design

- Tested for a minimum of 80,000 pressings

Technical data



General
Adjustable crimping pressure



Note
Crimping profile: W-pressing

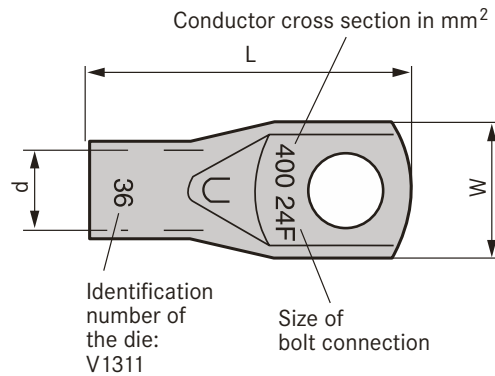
Article number	Article designation	For mm ²	Weight (kg)	Length (mm)	Pieces / PU
61722130	KWB 4099	4.00 - 10.00	0.5	220	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Panel connectors non-insulated refer to page 922

Tube cable lugs KR/ KRT/ KRF



Tube cable lugs KR/ KRT/ KRF

Benefits

- Premium cables and wires for railway vehicles

Application range

- **KR**
For fine and multi-wire copper conductors with a cross-sectional range of 0.75 - 10.00 mm²
- **KRT**
For multi-wire copper conductors with a cross-sectional range of 10 - 400 mm²
- **KRF**
For fine-wire copper conductors with a cross-sectional range of 16 - 400 mm²

Approvals

- RoHS**
• File Number E205350, see table

Design

- For fine and multi-wire copper conductors with a cross section range of 0.75 - 10 mm²

Suitable tools

- T 2288 pressing pliers refer to page 929
- V 1311 pressing pliers, hydraulic refer to page 930

Technical data

- General**
Inspection hole
- Approvals**
UL-recognised
- Material**
Tinned electrolyte copper
- Temperature range**
Temperature range up to +90°C
Working temperature: 110°C, max. +200°C

Article number	Article designation	Screw hole Ø (mm)	UL approval	Length (mm)	Pressing dies	d mm	W mm	Pieces / PU
KR								
61796480	KR/0,75	3	no	16		1.3	6.0	100
61796490	KR/0,75	4	no	16		1.3	6.0	100
61796500	KR/1,5	3	yes	16		1.8	6.5	100
61796510	KR/1,5	4	yes	17		1.8	6.5	100
61796520	KR/1,5	5	yes	18		1.8	7.5	100
61796530	KR/2,5	3	yes	17		2.3	7.5	100
61796540	KR/2,5	4	yes	18		2.3	7.5	100
61796550	KR/2,5	5	yes	19		2.3	8.5	100
61796560	KR/2,5	6	yes	19		2.3	8.5	100
61796570	KR/4	4	yes	21		3.0	8.5	100
61796580	KR/4	5	yes	22		3.0	9.0	100
61796590	KR/4	6	yes	23		3.0	10.0	100
61796600	KR/6	4	yes	22		4.0	9.5	100
61796610	KR/6	5	yes	22		4.0	9.5	100
61796620	KR/6	6	yes	23		4.0	10.0	100
61796630	KR/6	8	yes	30		4.0	13.5	100
61796631	KR/10	5	yes	29	B 7 / B 8	5.0	11.5	100
61796632	KR/10	6	yes	29	B 7 / B 8	5.0	11.5	100
61796633	KR/10	8	yes	33	B 7 / B 8	5.0	13.5	100
KRT								
61796640	KRT/10	5	yes	29	B 7	4.5	10.0	100
61796650	KRT/10	6	yes	29	B 7	4.5	10.0	100
61796660	KRT/10	8	yes	34	B 7	4.5	13.0	100
61796670	KRT/10	10	yes	34	B 7	4.5	16.0	100
61796680	KRT/10	12	yes	41	B 7	4.5	19.0	100
61796690	KRT/16	5	yes	34	B 8.5	5.5	12.0	100
61796700	KRT/16	6	yes	34	B 8.5	5.5	12.0	100
61796710	KRT/16	8	yes	39	B 8.5	5.5	15.0	100
61796720	KRT/16	10	yes	39	B 8.5	5.5	16.0	100
61796730	KRT/16	12	yes	44	B 8.5	5.5	19.0	100
61796740	KRT/25	6	yes	43	B 10	7.0	14.0	100
61796750	KRT/25	8	yes	43	B 10	7.0	15.0	100
61796760	KRT/25	10	yes	43	B 10	7.0	16.0	100
61796770	KRT/25	12	yes	48	B 10	7.0	19.0	100
61796780	KRT/35	6	yes	48	B 12	8.5	17.0	100
61796790	KRT/35	8	yes	48	B 12	8.5	17.0	100
61796800	KRT/35	10	yes	48	B 12	8.5	19.0	100
61796810	KRT/35	12	yes	53	B 12	8.5	19.0	50
61796820	KRT/50	6	yes	53	B 14	10.0	20.0	50
61796830	KRT/50	8	yes	53	B 14	10.0	20.0	50
61796840	KRT/50	10	yes	53	B 14	10.0	20.0	50
61796850	KRT/50	12	yes	56	B 14	10.0	22.0	50
61796860	KRT/70	8	yes	55	B 16	12.0	23.0	50
61796870	KRT/70	10	yes	55	B 16	12.0	23.0	50
61796880	KRT/70	12	yes	58	B 16	12.0	23.0	50
61796890	KRT/95	8	yes	60	B 18	13.5	26.0	50
61796900	KRT/95	10	yes	60	B 18	13.5	26.0	50
61796910	KRT/95	12	yes	63	B 18	13.5	26.0	50

Connection and crimping

Tube cable lugs

Article number	Article designation	Screw hole Ø (mm)	UL approval	Length (mm)	Pressing dies	d mm	W mm	Pieces / PU
61796920	KRT/95	16	yes	69	B 18	13.5	28.0	50
61796930	KRT/120	10	yes	64	B 19	15.0	28.0	50
61796940	KRT/120	12	yes	64	B 19	15.0	28.0	50
61796950	KRT/120	16	yes	70	B 19	15.0	28.0	50
61796960	KRT/150	12	no	76	B 22	17.0	32.0	25
61796970	KRT/150	16	no	76	B 22	17.0	32.0	25
61796980	KRT/150	20	no	83	B 22	17.0	32.0	25
61796990	KRT/185	12	no	79	13 B 24	19.0	35.0	25
61797000	KRT/185	16	no	79	13 B 24	19.0	35.0	25
61797010	KRT/185	20	no	86	13 B 24	19.0	35.0	25
61797020	KRT/240	12	no	86	13 B 26	21.0	38.0	25
61797030	KRT/240	16	no	86	13 B 26	21.0	38.0	25
61797040	KRT/240	20	no	93	13 B 26	21.0	38.0	25
61797050	KRT/300	16	no	100	13 B 30	24.0	44.0	10
61797080	KRT/400	20	no	114	13 B 32	26.0	48.0	10
KRF								
61803020	KRF/16	6	yes	33	B 9	6.0	13.0	100
61803030	KRF/16	8	yes	33	B 9	6.0	13.0	100
61803040	KRF/16	10	yes	38	B 9	6.0	16.0	100
61803050	KRF/16	12	yes	47	B 9	6.0	22.0	100
61803060	KRF/25	6	yes	37	B 11	8.0	16.0	100
61803070	KRF/25	8	yes	38	B 11	8.0	16.0	100
61803080	KRF/25	10	yes	42	B 11	8.0	17.0	100
61803090	KRF/25	12	yes	47	B 11	8.0	22.0	100
61803110	KRF/35	6	yes	45	B 13	9.0	18.0	100
61803120	KRF/35	8	yes	47	B 13	9.0	18.0	100
61803130	KRF/35	10	yes	45	B 13	9.0	18.0	100
61803140	KRF/35	12	yes	52	B 13	9.0	22.0	100
61803160	KRF/50	8	yes	50	B 14.4	11.0	21.0	100
61803170	KRF/50	10	yes	50	B 14.5	11.0	21.0	100
61803180	KRF/50	12	yes	53	B 14.5	11.0	21.0	100
61803190	KRF/50	16	yes	59	B 14.5	11.0	27.0	100
61803200	KRF/70	8	yes	55	B 17	13.0	25.0	50
61803210	KRF/70	10	yes	55	B 17	13.0	25.0	50
61803220	KRF/70	12	yes	58	B 17	13.0	25.0	50
61803230	KRF/70	16	yes	64	B 17	13.0	28.0	50
61803240	KRF/95	10	yes	69	B 20	15.0	29.0	50
61803250	KRF/95	12	yes	69	B 20	15.0	29.0	50
61803260	KRF/95	16	yes	69	B 20	15.0	29.0	50
61803270	KRF/120	10	yes	73	B 22	17.0	32.0	25
61803280	KRF/120	12	yes	73	B 22	17.0	32.0	25
61803290	KRF/120	16	yes	73	B 22	17.0	32.0	25
61803300	KRF/150	12	yes	80	B 25/13 B 25	19.0	36.0	25
61803310	KRF/150	16	yes	80	B 25/13 B 25	19.0	36.0	25
61803330	KRF/185	12	yes	86	13 B 27	21.0	39.0	20
61803340	KRF/185	16	yes	86	13 B 27	21.0	39.0	20
61803350	KRF/185	20	yes	93	13 B 27	21.0	39.0	20
61803360	KRF/240	12	yes	95	13 B 30	22.5	42.0	10
61803370	KRF/240	16	yes	95	13 B 30	22.5	42.0	10
61803380	KRF/240	20	yes	95	13 B 30	22.5	42.0	10
61803390	KRF/300	16	yes	114	13 B 32	24.5	45.0	10
61803400	KRF/300	20	yes	114	13 B 32	24.5	45.0	10
61803420	KRF/400	16	yes	126	13 B 38	30.0	56.0	10
61803430	KRF/400	20	yes	126	13 B 38	30.0	56.0	10
61803440	KRF/400	24	yes	126	13 B 38	30.0	56.0	10

Photographs are not to scale and do not represent detailed images of the respective products.

■ Similar products

- Cable lugs KB refer to page 920

ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

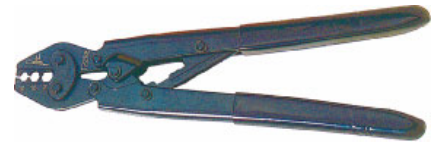
SILVYN®

FLEXIMARK®

ACCESSORIES

APPENDIX

T 2288 pressing pliers



Benefits

- Forced locking guarantees complete pressing
- Handy for on-site electric fitters
- Small size

Application range

- For pressing copper connections of 10 - 25 mm²
- For pressing tube cable lugs (KRT) and butt connectors

Approvals

- Tested in accordance with SEN standard 245010

Technical data



Note
Crimping profile: Hexagonal

Article number	Article designation	For mm ²	Crimping profile	Weight (kg)	Length (mm)	Pieces / PU
61790961	T 2288	10.0 - 25.0	hexagon	0.6	300	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Tube cable lugs KR/ KRT/ KRF refer to page 927

WT 3195 G pressing pliers, hydraulic



Benefits

- One-hand operation possible by attaching the pliers to the workbench
- Reliable pressings due to the long lever and good transmission
- Settings for tube cable lugs (RK) and compression cable lugs (OK) are displayed on the pliers
- Safety system with built-in emergency release

Application range

- The high-performance pressing pliers for tube and compression cable lugs of 6 - 95 mm²

Product features

- Adjustable screw with fine threads for precise positioning of the press area

Approvals

- Tested in accordance with DIN/SEN/BS/MIL-SPEC/UL standards

Design

- Mechanical pressing tool with ratchet system
- Cross-section range: 6 - 95 mm²

Technical data



Note
Maximum pressing pressure: approx. 130 kN



Info
Cross-section range: 6 - 95 mm²
Crimping profile: Mandrel pressing

Article number	Article designation	For mm ²	Crimping profile	Weight (kg)	Length (mm)	Pieces / PU
61743900	WT 3195 G	6.0 - 95.0	mandrel	2.35	500	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Tube cable lugs KR/ KRT/ KRF refer to page 927

Connection and crimping

Pressing pliers for CU connections

V 1311 pressing pliers, hydraulic



Benefits

- Ergonomic handles
- Pressing head rotates by 180 degrees
- Automatic quick feed of pressing dies and mandrels
- Few tool parts, easy to change

Application range

- System 1311 for pressing copper connections of 10 - 400 mm²

Technical data



Note

Crimping profile: Hexagonal
Pressing force: 130 kN (13 t)

Design

- Without pressing dies and die holders

Included

- Complete unit, no external pump required
- Included: FV 1311 bag

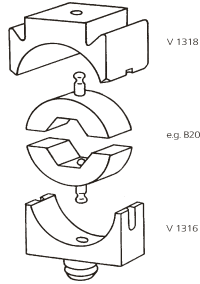
Article number	Article designation	For mm ²	Inner die holders	Outer die holders	Weight (kg)	Length (mm)	Pieces / PU
61795925	V 1311	10.0 - 400.0	V 1316	V 1318	4.9	590	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Tube cable lugs KR/ KRT/ KRF refer to page 927
- Die holders for system 1311 refer to page 930
- Die holders for system 1311 refer to page 930

Die holders for system 1311



Application range

- Systems 1311 for pressing copper connections of 10 - 400 mm²

Design

- For the V1311 pliers, both the inner die holder V1316 and the outer die holder V1318 are needed.
- These must be ordered separately.

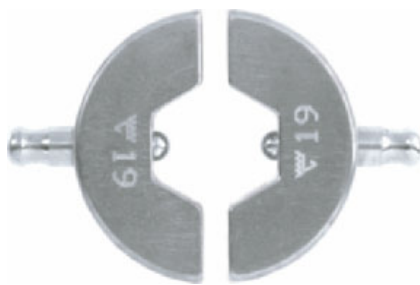
Suitable tools

- V 1311 pressing pliers, hydraulic refer to page 930

Article number	Article designation	For crimping tools	Dies per PU	PU
61795941	V 1316 inner die-holder	V 1311	1	1
61795942	V 1318 outer die-holder	V 1311	1	1

Component composition: First specify the pressing dies. Note that die holders are not needed for all pressing dies (depending on the cross section of the tube cable lugs to be pressed)
Photographs are not to scale and do not represent detailed images of the respective products.

Die holders for system 1311



Application range

- Pressing dies for copper branch terminals are available upon request
- The 1311 system allows tube cable lugs (KR/ KRT/KRF), butt connectors (KS/KST/KSF) and copper branch terminals to be pressed. Inserts are supplied in pairs.

Included

- KS/KST/KSF butt connectors are available upon request. Press inserts are delivered in pairs.

Suitable tools

- V 1311 pressing pliers, hydraulic refer to page 930

Article number	Article designation	For KR/KS mm ²	For KRT/KST mm ²	For KRF/KSF mm ²	PU
Pressing dies - in pairs					
61795950	B7	10.0	10.0		1
61795951	B8	10.0		10.0	1
61795960	B8,5		16.0		1
61795970	B9			16.0	1
61795971	B10		25.0		1
61795972	B11			25.0	1
61795980	B12		35.0		1
61795981	B13			35.0	1
61795990	B14		50.0		1
61795991	B14,5			50.0	1
61796000	B16		70.0		1
61796001	B17			70.0	1
61796010	B18		95.0		1
61796021	B20			95.0	1
61796020	B19		120.0		1
61796030	B22		150.0	120.0	1
61796032	B25			150.0	1
61796031	B24		185.0		1
61796042	13B25			185.0	1
61796043	13B26		240.0		1
61796044	13B30		300.0	240.0	1
61796045	13B32		400.0	300.0	1
61796046	13B38			400.0	1

Component composition: First specify the pressing dies. Note that die holders are not needed for all pressing dies (depending on the cross section of the tube cable lugs to be pressed)
Photographs are not to scale and do not represent detailed images of the respective products.

Mobile crimp tool crimping pliers

Benefits

- Crimping inserts can be changed without a tool in one simple operation
- Only one tool, but many types of crimping

Product features

- Parallel crimping

Design

- Tested with 20,000 crimping operations

Included

- 19 various crimping inserts
- Crimping inserts in a practical box



Article number	Article designation	Crimping insert	PU
62000100	MCT incl. insert	Conductor end sleeves 0.25 - 10 mm ²	1
62000105	MCT without insert		1
62000102	MCT case, empty		1

Photographs are not to scale and do not represent detailed images of the respective products.

Mobile crimp tool - crimping inserts

Benefits

- The crimping inserts are clearly labelled which minimises the risk of confusion
- Stored in the practical module boxes which can be joined together



Info

- Professional tool with interchangeable inserts

Design

- MCT crimping insert RJ45 can only be used for unscreened connectors

Suitable tools

- Mobile crimp tool crimping pliers refer to page 931



Article number	Article designation	Specification	Specification GB	PU
62000110	MCT insert cable lugs insul. 4300-3129	0.5 - 1.5/1.5 - 2.5 mm ²	AWG 22-16 / 16-14	1
62000111	MCT insert cable lugs insul. 4300-3128	0.1 - 0.4/4 - 6 mm ²	AWG 26-22 / 12-10	1
62000112	MCT insert cable lugs non-insul. 4300-3142	0.5 - 2.5/4 - 6 mm ²	AWG 12-10 / 22-14	1
62000113	MCT insert cable lugs non-insul. 4300-3137	0.75/1.5/2.5 mm ²		1
62000114	MCT insert cable lugs non-insul. 4300-3139	4 / 6 / 10 mm ²		1
62000115	MCT insert AEH 4300-3127	0.25 - 10 mm ²	AWG 24-8	1
62000116	MCT insert AEH 4300-3153	16 - 25 mm ²	AWG 6-4	1
62000117	MCT insert AEH 4300-3154	35-50 mm ²	AWG 2-0	1
62000118	MCT insert blade connectors 4300-3150	0.1 - 0.25/0.25 - 0.5/0.5 - 1.0 mm ²	AWG 26-24 / 24-22 / 22-18	1
62000120	MCT insert blade connectors 4300-3146	0.5 - 1.0/1.5 - 2.5/4 - 6 mm ²	AWG 22-18 / 16-14 / 12-10	1
62000121	MCT insert LWL 4300-3141	4.52/5.41/3.84/3.25 mm	.178/.213/.151/.128 inch	1
62000122	MCT insert BNC 4300-3140 RG 174/179	4.52/3.25/1.69/0.7 mm	.178/.128/.067/.028 inch	1
62000123	MCT insert BNC 4300-3136 RG 58/59/62/71	1.69/5.41/6.48 mm	.067/.213/.255 inch	1
62000124	MCT insert BNC 4300-3138 RG 6/59	9.14/8.23 mm	.360/.324 inch	1
62000125	MCT insert RJ45 4300-3144	RJ-45 8/8	suitable for unscreened connectors	1
62000126	MCT insert RJ11 4300-3132	RJ-11 6/6, 6/4, 6/2		1
62000127	MCT insert contacts 4300-3147	0.14 - 4 mm ²	AWG 26-12	1
62000128	MCT insert contacts 4300-3148	6 - 10 mm ²	AWG 10-8	1

Photographs are not to scale and do not represent detailed images of the respective products.

Connection and crimping

Universal crimping tools and appliances

PEW 12 universal tool



Benefits

- Manual power reduced by up to 30 %
- Ergonomic design
- Almost parallel locking movement of dies
- One and two-hand operation

Application range

- PEW 12 crimping system
- Practical pressing pliers for a wide range of cross-sections from 0.08 to 50 mm²
- These pliers allow you to press conventional standard cable lugs as well as AMP, COAX or Western connectors

Product features

- Chrome-plated pressing pliers
- Burnished press inserts

Approvals

- Reliable, DIN-compliant crimping connection

Included

- Case for 15 crimping dies, 4 locators

Article number	Article designation	Suitable for:	Pressing range (mm ²)	AWG pressing range	Crimp dimensions (mm)	Crimp sleeve Ø (mm)	Pieces / PU
Pliers							
61813807	PEW 12 burnished without inserts						1
61813819	Case for PEW 12						1
Press inserts							
61813823	PEW 12.2	uninsulated cable lugs	0.25 - 2.5	23 - 13			1
61813824	PEW 12.3	uninsulated cable lugs	4.0 - 10.0	11 - 7			1
61813825	PEW 12.31	uninsulated cable lugs	1.5 - 10.0	15 - 7			1
61813811	PEW 12.32	uninsulated cable lugs	0.5 - 10	20 - 7			1
61813862	PEW 12.33	uninsulated cable lugs	16 - 25	5 - 3			1
61813812	PEW 12.6	insulated cable lugs	0.5 - 6.0	20 - 10			1
61813826	PEW 12.63	insulated cable lugs	10.0 - 16.0	7 + 5			1
61814600	PEW 12.45	uninsulated panel connectors 2.8 + 4.8	0.1 - 2.5	27-13			1
61814601	PEW 12.45 lokátor	uninsulated panel connectors 2.8 + 4.8					1
61813808	PEW 12.5	uninsulated panel connectors 4.8 + 6.3	0.5 - 6.0	20 - 10			1
61813809	PEW 12.5 lokátor	uninsulated panel connectors 4.8 + 6.3					1
61814604	PEW 12.742	uninsulated panel connectors 6.3	0.5 - 1, 0.5 - 2.5	20 - 13			1
61813859	PEW 12.745	uninsulated panel connectors 6.3	1.25 - 2.5, 3 - 6	12 - 9			1
61813802	PEW 12.9	insul. + non-insul. conductor end sleeves	0.5 - 6.0	20 - 10			1
61813803	PEW 12.91	insul. + non-insul. conductor end sleeves	10.0 - 25.0	7 - 4			1
61813804	PEW 12.92	insul. + non-insul. conductor end sleeves	35.0 - 50.0	2 - 1/0			1
61813813	PEW 12.10	COAX connector	RG 58, 59, 62, 71		5.4/6.48/1.72	6.4/7.6/2.1	1
61813814	PEW 12.11	COAX connector	RG 174, 58		5.4/4.52/1.72	6.4/5.4/2.1	1
61813827	PEW 12.111	COAX connector	RG 59, 6		8.23/6.48/1.72/1.07	9.4/7.6/2.1/1.3	1
61813816	PEW 12.114	COAX connector	RG 213, 11		10.9/2.54	12.0/3.0	1
61813818	PEW 12.119	COAX connector	1.0/6.6		1.75/9.73	2.1/10.7	1
61813852	PEW 12.158	COAX connector	Belden		7.0/8.4/8.1	7.7/9.5/9.5	1
61813853	PEW 12.159	COAX connector	RG 58, 174, 316, 188		3.25/4.52/5.4/1.72/1.07/0.72	3.9/5.4/6.4/2.1/1.3/0.95	1
61813861	PEW 12.772	COAX connector	RG 178, 196, 174, 316, 188, 179		2.67/3.25/3.83	3.1/3.8/4.2	1
61813849	PEW 12.155	Optical fibre (POF) F-SMA/B-FOC (ST)			4.20/3.65/5.0	5.4/4.3/6.0	1
11147500	EPIK® crimping dies	Conductor end sleeves 25.0 mm ²	25.0	4			1

Photographs are not to scale and do not represent detailed images of the respective products.

WT 4454 G universal pressing pliers



Benefits

- A variety of press inserts are available, which can be used in all crimping pliers and appliances of the WT system.
- Integrated forced lock only allows the tool to be opened after it has completely closed (emergency opening possible).
- This ensures that a complete crimping operation is performed.
- For multiple uses
- This tool is low-cost and variable due to a number of patented, exchangeable press dies

Application range

- The manual pressing pliers with removable press matrices
- Press inserts for conductor end-sleeves, cable lugs, panel connectors, tube and compression cable lugs, and BNC connectors; and press inserts for the "Shield-Kon"® dual screen system

Note

- The WT crimping system comes with the WT 4454 G universal pressing pliers and WT-FMP 20 parallel crimper. A variety of press inserts is available, which can be used in all crimping pliers and appliances of the WT system.

Included

- Pliers without case
- Empty case with space for 12 inserts

Article number	Article designation	Weight (kg)	Length (mm)	Pieces / PU
61743920	WT 4454 G	0.5	250	1
61792250	WT case for WT 4454 G			1

SHIELD-KON® is a registered trademark of Thomas & Betts
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIK®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

WT - FMP 20 crimping tool hydraulic



Benefits

- Forced operation control guarantees highest pressing quality
- Resulting connections exceed the standard DIN requirements
- A variety of press inserts are available, which can be used in all crimping pliers and appliances of the WT system.

Application range

- Parallel crimping tool
- For insulated cable lugs up to 6 mm², non-insulated tubular and compression cable lugs up to 16 mm², conductor end sleeves up to 50 mm²

Approvals



Design

- Not included:
 - Die-block carrier (adapter)
 - Die-block carrier FMP 20 (adapter)
 - Pneumatic foot pedal, electronic batch counter, connecting tube, safety control and transparent protective mechanism in compliance with CE standards

Included

- Slide-in device and guide parts for repeatedly accurate and correct positioning of the various cable lugs

Technical data



General

Operating pressure: max. 6 bar / 90 PSI
 Dimensions: 270 x 120 x 240 mm



Note

Variable operating speed

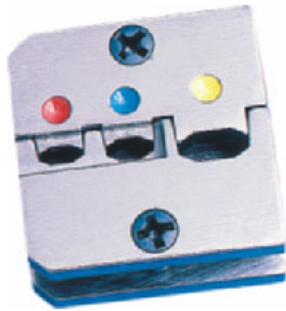
Article number	Article designation	Weight (kg)	Length (mm)	Pieces / PU
61790740	FMP 20	14	280	1
61790741	Die-block carrier FMP 20			1
61790744	Protection mechanism FMP 20			1

Photographs are not to scale and do not represent detailed images of the respective products.

Connection and crimping

Universal crimping tools and appliances

WT-IS 0560 G crimping inserts



Application range

- Crimping inserts for WT crimping system
- For insulated cable lugs and connector sleeves 0.5 - 6.0 mm²

Design

- 4.0 - 6.0 mm² - yellow
- 1.5 - 2.5 mm² - blue
- 0.5 - 1.5 mm² - red
- Crimping profile: Double-C

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933

Article number	Article designation	Suitable for:	For mm ²	Crimping profile	Pieces / PU
61743930	WT-IS 0560 G	insulated cable lugs	0.5 - 6	Double C pressing	1

Photographs are not to scale and do not represent detailed images of the respective products.

WT-IS 2525 G crimping inserts



Application range

- For insulated cable lugs and connector sleeves 0.25 - 2.5 mm²
- Crimping inserts for WT crimping system

Design

- Crimping profile: Double-C
- 0.50 - 1.50 mm² - red
- 1.50 - 2.50 mm² - blue
- 0.25 - 0.75 mm² - green/yellow

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933

Article number	Article designation	Suitable for:	For mm ²	Crimping profile	Pieces / PU
61743940	WT-IS 2525 G	insulated cable lugs	0.25 - 2.5	Double C pressing	1

Photographs are not to scale and do not represent detailed images of the respective products.

WT-IS 0510 G crimping inserts



Application range

- For insulated cable lugs and connector sleeves 0.5 - 1.5 mm²
- Crimping inserts for WT crimping system

Design

- Cross-section range: 0.5 - 1.5 mm² - red
- Crimping profile: Dovetail

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933

Article number	Article designation	Suitable for:	For mm ²	Crimping profile	Pieces / PU
61743950	WT-IS 0510 G	insulated cable lugs	0.5 - 1.5	dovetail pressing	1

Photographs are not to scale and do not represent detailed images of the respective products.

WT-IS 1525 G crimping inserts



Application range

- For insulated cable lugs and connector sleeves 1.5 - 2.5 mm²
- Crimping inserts for WT crimping system

Design

- Crimping profile: Dovetail
- Cross-section range: 1.5 - 2.5 mm², blue

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933

Article number	Article designation	Suitable for:	For mm ²	Crimping profile	Pieces / PU
61743960	WT-IS 1525 G	insulated cable lugs	1.5 - 2.5	dovetail pressing	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

WT-KR 0560 G crimping inserts

Application range

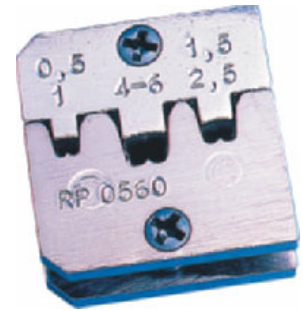
- Crimping inserts for WT crimping system
- For non-insulated blade connectors 0.5 - 6 mm² (6.3/9.5 mm)

Included

- Crimping profile: Roller pressing
- Cross-section range
- 1.5 - 2.5 mm²
- 4.0 - 6.0 mm²
- 0,5 - 1,5 mm²

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933



Article number	Article designation	Suitable for:	For mm ²	Crimping profile	Pieces / PU
61743980	WT-KR 0560 G	uninsulated panel connectors	0.5 - 6	roller pressing	1

Photographs are not to scale and do not represent detailed images of the respective products.

WT-BL 0560 G crimping inserts

Application range

- Crimping inserts for WT crimping system
- For non-insulated tubular and compression cable lugs 0.5 - 6 mm²

Product features

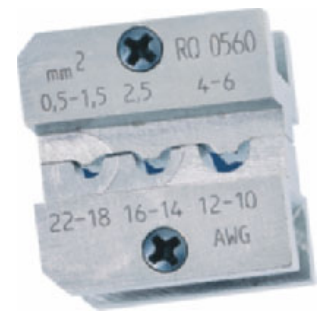
- Crimping profile: W-pressing

Design

- Cross-section range
- 4.0 - 6.0 mm²
- 1.5 - 2.5 mm²
- 0,5 - 1,5 mm²

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933



Article number	Article designation	Suitable for:	For mm ²	Crimping profile	Pieces / PU
61743990	WT-BL 0560 G	uninsulated cable lugs	0.5 - 6	w-pressing	1

Photographs are not to scale and do not represent detailed images of the respective products.

WT-BL 10 G crimping inserts

Application range

- Crimping inserts for WT crimping system
- For non-insulated tubular and compression cable lugs 10 mm²

Product features

- Crimping profile: W-pressing

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933



Article number	Article designation	Suitable for:	For mm ²	Crimping profile	Pieces / PU
61743995	WT-BL 10 G	uninsulated cable lugs	10	w-pressing	1

Photographs are not to scale and do not represent detailed images of the respective products.

WT-BL 16 G crimping inserts

Application range

- For non-insulated tubular and compression cable lugs 16 mm²

Product features

- Crimping profile: Mandrel

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933



Article number	Article designation	Suitable for:	For mm ²	Crimping profile	Pieces / PU
61743996	WT-BL 16 G	uninsulated cable lugs	16	mandrel	1

Photographs are not to scale and do not represent detailed images of the respective products.

Connection and crimping

Universal crimping tools and appliances

WT-BLH 1060 G crimping inserts



Application range

- For non-insulated tubular and compression cable lugs 1.0 - 6.0 mm²

- 4.0 mm²
- 2.5 mm²
- 1,0 - 1,5 mm²

Product features

- Crimping profile: Mandrel

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933

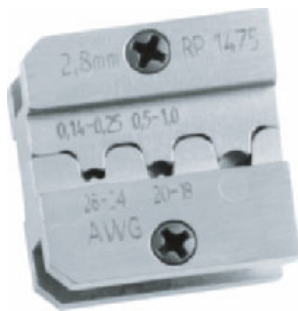
Design

- Cross-section range
- 6.0 mm²

Article number	Article designation	Suitable for:	For mm ²	Crimping profile	Pieces / PU
61743997	WT-BLH 1060 G	uninsulated cable lugs	1 - 6	Hexagonal pressing	1

Photographs are not to scale and do not represent detailed images of the respective products.

WT-KR 1475 G crimping inserts



Application range

- Crimping inserts for WT crimping system
- For insulated and non-insulated conductor end sleeves 0.14 - 1.5 mm²

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933

Product features

- Crimping profile: Roller pressing

Design

- Cross-section range
- 0,5 - 1,0 mm²
- 0,75 - 1,5 mm²
- 0.14 - 0.25 mm²

Article number	Article designation	Suitable for:	For mm ²	Crimping profile	Pieces / PU
61743991	WT-KR 1475 G	uninsulated panel connectors	0.14 - 1.5	roller pressing	1

Photographs are not to scale and do not represent detailed images of the respective products.

WT-AH 2560 G crimping inserts



Application range

- Crimping inserts for WT crimping system
- For insulated and non-insulated conductor end sleeves 0.25 - 6 mm²

- 0,75 - 4,0 mm²
- 0,25 - 1,5 mm²
- 0,5 - 2,5 mm²

Product features

- Crimping profile: Trapezoid

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933

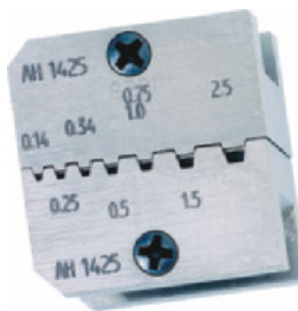
Design

- Cross-section range
- 1,0 - 6,0 mm²

Article number	Article designation	For mm ²	Crimping profile	Pieces / PU
61743993	WT-AH 2560 G	0.25 - 6	trapezoid	1

Photographs are not to scale and do not represent detailed images of the respective products.

WT-AH 1425 G crimping inserts



Application range

- Crimping inserts for WT crimping system
- For insulated and non-insulated conductor end sleeves 0.14 - 2.5mm²

Design

- Cross-section range: 0.14 mm², 0.25 mm², 0.34 mm², 0.5 mm², 0.75 + 1 mm², 1.5 mm², 2.5 mm²

Product features

- Crimping profile: Trapezoid

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933

Article number	Article designation	For mm ²	Crimping profile	Pieces / PU
61743989	WT-AH 1425	0.14 - 2.5	trapezoid	1

Photographs are not to scale and do not represent detailed images of the respective products.

WT-AG 6016 G crimping inserts

Application range

- Crimping inserts for WT crimping system
- For insulated and non-insulated conductor end sleeves 6 - 16 mm²

Product features

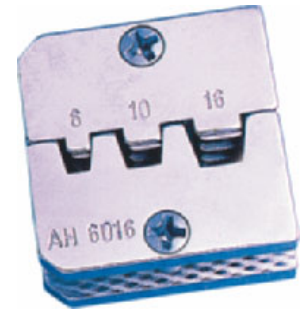
- Crimping profile: Trapezoid

Design

- Cross-section range
- 6.0 mm²

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933



Article number	Article designation	For mm ²	Crimping profile	Pieces / PU
61743994	WT-AH 6016 G	6 - 16	trapezoid	1

Photographs are not to scale and do not represent detailed images of the respective products.

WT-RG 58/59 IL crimping inserts

Application range

- Crimping inserts for WT crimping system
- For BNC connectors, RG 58/RG 59 cables and inner conductors

Product features

- Crimping profile: Hexagonal

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933



Article number	Article designation	Suitable for:	Crimping profile	Pieces / PU
61752950	WT-RG 58/59 IL	BNC plug	Hexagonal pressing	1

Photographs are not to scale and do not represent detailed images of the respective products.

WT-KRW 1525 G crimping inserts

Application range

- Crimping inserts for WT crimping system
- For non-insulated right-angle blade connectors with side connection 1.5 - 2.5 mm² (6.3 mm)

Product features

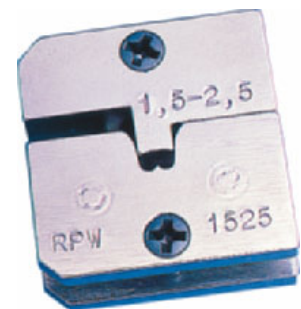
- Crimping profile: Roller pressing

Design

- Cross-section range: 1.5 - 2.5 mm², other sizes are available upon request

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- WT - FMP 20 crimping tool hydraulic refer to page 933



Article number	Article designation	For mm ²	Crimping profile	Pieces / PU
61743992	WT-KRW 1525 G	1.5 - 2.5	roller pressing	1

Photographs are not to scale and do not represent detailed images of the respective products.

RSK one-piece screen connector



Benefits

- Matching tool inserts have the same colour.
- The four sizes can be identified by the different colours of insulation.

Application range

- One-piece screen connector
- One-part screen connector allows screened cables to be connected quickly and permanently.

Approvals



Design

- To process, insert the connector into the tool, then insert and crimp the screen cable and leads or the earthing clamp.
- When crimped, the connector assumes a round shape and both ends are pushed above each other.
- When inserting the screened cable to a connector, ensure that the cable insulation overlaps with the connector's MYLAR® insulation.
- Inside the connector, there is a suspended cover plate for the leads and an insertion for the screened cable.

Suitable tools

- ERG 740 manual pressing tool refer to page 939

Technical data



Material

Tinned electrolyte copper
Insulation: laminated polyester



Temperature range

-55°C to +125°C

Article number	Article designation	Colour	Shield Ø (mm)	Suitable inserts	Pieces / PU
61721340	RSK 5101	red	1.27-2.28	101 A/B	100
61721350	RSK 5201	blue	2.29-3.65	201 C/D/E/F	100
61721360	RSK 5301	yellow	3.66-5.12	301 F/H/J/G	100
61743200	RSK 5401	green	5.13-7.62	401 K/L/M/N	100

MYLAR® is a registered trademark of DuPont de Nemours. SHIELD-KON® is a registered trademark of Thomas & Betts. Photographs are not to scale and do not represent detailed images of the respective products.

RSK gauge



Application range

- One-piece screen connector
- For the one-piece SHIELD-KON® connectors RSK
- The RSK gauge can be used to determine the appropriate connector and tool easily and reliably.

Design

- The appropriate connectors and tool inserts are indicated by the notches.

Article number	Article designation	Pieces / PU
61753760	RSK gauge	1

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

RSK earth clamp

Benefits

- RSK earth clamps are the quick and inexpensive alternative to conventional installation of conductors.

Application range

- One-piece screen connector
- For use with one-part RSK connectors.

Technical data



Material
Tinned electrolyte copper



Article number	Article designation	Used for	Hole diameter (mm)	Pieces / PU
61753762	RSK-Flag-B3	RSK 5301 / 5401	M3	100
61753763	RSK-Flag-B4	RSK 5301 / 5401	M4	100
61753764	RSK-Flag-B5	RSK 5301 / 5401	M5	100

Photographs are not to scale and do not represent detailed images of the respective products.

ERG 740 manual pressing tool

Benefits

- Ergonomic plastic handles
- The tools work according to the "SHURE STAKE" principle: when the pressing procedure is started, the tool can only be opened when the crimping operation is completed.
- This means consistently high quality and safety. The inserts are made of plastic or metal and can be changed easily and quickly, by simply pushing in by hand.
- The tools do not need to be adjusted.

Application range

- For metal inserts

Design

- The one-part Shield-Kon® connectors are crimped with the manual pressing tool ERG 740.
- For all tools in the one-piece SHIELD-Kon® system, the pressing dies move in parallel to each other, which enables the contorting effect of the RSK connector

Included

- Pressing pliers ERG 740
- RSK gauge for easy identification of the connector
- Case



Article number	Article designation	Suitable inserts	Pieces / PU
61753160	ERG 740 case + hand pliers + gauge	Metal	1

Photographs are not to scale and do not represent detailed images of the respective products.

Crimping inserts for ERG 740

Benefits

- The inserts are changeable.

Application range

- One-piece screen connector tool inserts

Design

- The one-part RSK connectors are crimped using the manual crimping tool ERG 740 for metal dies.

Suitable tools

- ERG 740 manual pressing tool refer to page 939



Article number	Article designation	Colour	Shield Ø (mm)	Suitable inserts	Pieces / PU
Metal inserts for ERG 740					
61722835	D-101 A	red	1.27-1.79	RSK 5101	1
61722825	D-101 B	red	1.80-2.28	RSK 5101	1
61722905	D-201 C	blue	2.29-2.55	RSK 5201	1
61722915	D-201 D	blue	2.56-3.00	RSK 5201	1
61722925	D-201 E	blue	3.01-3.34	RSK 5201	1
61743045	D-201 F	blue	3.35-3.65	RSK 5201	1
61722935	D-301 G	yellow	3.66-4.13	RSK 5301	1
61722945	D-301 H	yellow	4.14-4.71	RSK 5301	1
61722875	D-301 J	yellow	4.72-5.12	RSK 5301	1
61743215	D-401 K	green	5.13-5.86	RSK 5401	1
61743225	D-401 L	green	5.87-6.36	RSK 5401	1
61743235	D-401 M	green	6.37-7.00	RSK 5401	1
61743245	D-401 N	green	7.01-7.62	RSK 5401	1

Photographs are not to scale and do not represent detailed images of the respective products.

SHIELD-KON® two-part screen connector



Info

- **Reliable connection**

Benefits

- A hard, stable inner sleeve absorbs the pressure and protects the conductor on the inside from mechanical stress.
- Soft outer sleeve is deformed during pressing and thus guarantees a perfect electrical and mechanical connection.
- The appropriate press insert can be determined by using the selected outer sleeve.

Application range

- Two-part screen connector
- With the two-part SHIELD-KON® connector, it is possible to handle screen cables with a dielectric diameter from 1.1 to 14 mm (diameter after removing the screen)

Approvals



- Corrosion test in compliance with IEC 68-2-42
- The test samples were stored for 10 days in a damp SO2 industrial atmosphere at 25 °C.
- This test showed only negligible increases in the contact resistance, which means that the crimped connections can be considered gas-proof.

Suitable tools

- WT 4454 G universal pressing pliers refer to page 932
- SHIELD-KON® crimping inserts refer to page 941

Technical data



Temperature range

Temperature shock test
100 cycles of temperature changes between -40°C and +155°C produced a negligible change in the contact resistance.

Article number	Article designation	Colour	Inner x outer sleeve Ø (mm)	Pieces / PU
Inner sleeves				
61749430	GSB5046	silver	1.17 x 1.90	100
61749440	GSB5058	yellow	1.47 x 2.10	100
61749450	GSB5063	red	1.60 x 2.23	100
61749460	GSB5071	green	1.87 x 2.44	100
61749470	GSB5080	blue	2.00 x 2.63	100
61749480	GSB5090	orange	2.20 x 2.90	100
61749490	GSB5096	purple	2.44 x 3.02	100
61749500	GSB5101	yellow	2.56 x 3.16	100
61749510	GSB5109	red	2.76 x 3.36	100
61749520	GSB5115	silver	2.92 x 3.70	100
61749530	GSB5124	green	3.14 x 3.68	100
61749540	GSB5128	silver	3.25 x 3.86	100
61749550	GSB5134	orange	3.40 x 4.00	100
61749560	GSB5149	blue	3.78 x 4.54	100
61749570	GSB5156	red	3.96 x 4.90	100
61749580	GSB5165	silver	4.20 x 4.92	100
61749590	GSB5175	green	4.44 x 5.46	100
61749600	GSB5187	yellow	4.75 x 5.76	100
61749610	GSB5194	blue	4.93 x 5.76	100
61749620	GSB5205	orange	5.20 x 6.22	100
61749630	GSB5219	silver	5.56 x 6.35	100
61749640	GSB5225	yellow	5.71 x 6.50	100
61749650	GSB5232	red	5.90 x 6.70	100
61749660	GSB5250	green	6.35 x 7.14	100
61749670	GSB5261	blue	6.63 x 7.54	100
61749680	GSB5266	silver	6.75 x 7.54	100
61749690	GSB5275	orange	6.98 x 7.77	100
61749700	GSB5281	yellow	7.14 x 8.40	100
61749710	GSB5287	silver	7.29 x 8.30	100
61749720	GSB5297	red	7.54 x 8.50	100
61749730	GSB5312	purple	7.92 x 9.20	100
61749740	GSB5348	orange	8.84 x 10.20	100
61749750	GSB5375	blue	9.52 x 10.30	100
Outer sleeves				
61749810	GSC5101	silver	2.56 x 3.16	100
61749820	GSC5128	blue	3.25 x 3.86	100
61749830	GSC5149	purple	3.78 x 4.54	100
61749840	GSC5156	yellow	3.96 x 4.90	100
61749850	GSC5175	blue	4.40 x 5.46	100
61749860	GSC5187	orange	4.75 x 5.76	100
61749870	GSC5194	red	4.93 x 5.79	100
61749880	GSC5199	silver	5.05 x 5.97	100
61749890	GSC5205	yellow	5.20 x 6.22	100
61749900	GSC5219	green	5.56 x 6.35	100
61749910	GSC5225	purple	5.71 x 6.50	100
61749920	GSC5232	orange	5.90 x 6.70	100
61749930	GSC5261	yellow	6.63 x 7.54	100
61749940	GSC5275	silver	6.98 x 7.77	100
61749950	GSC5281	purple	7.14 x 8.40	100
61749960	GSC5287	blue	7.29 x 8.30	100
61749970	GSC5297	green	7.54 x 8.50	100
61749980	GSC5312	yellow	7.95 x 9.20	100
61749990	GSC5327	silver	8.30 x 9.45	100
61750000	GSC5348	orange	8.84 x 9.98	100
61750010	GSC5359	purple	9.12 x 10.13	100
61750020	GSC5375	yellow	9.52 x 10.30	100
61750030	GSC5405	red	10.28 x 11.50	100
61750040	GSC5415	blue	10.54 x 11.76	100
61750050	GSC5425	silver	10.80 x 12.06	100
61750060	GSC5460	silver	11.68 x 12.95	100
61750070	GSC5500	green	12.70 x 14.60	100

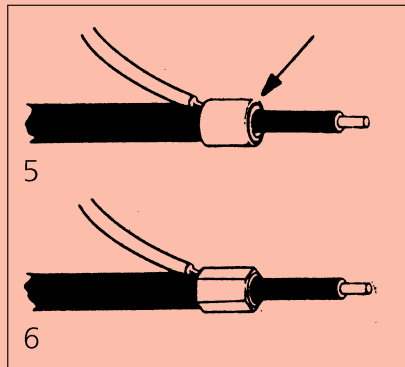
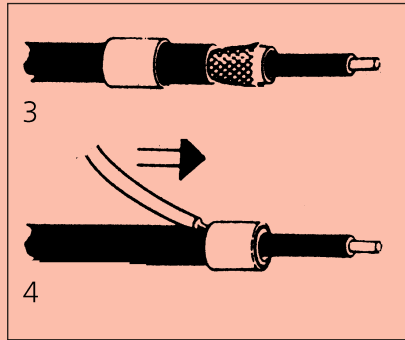
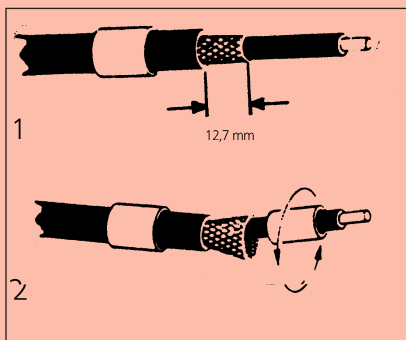
SHIELD-KON® is a registered trademark of Thomas & Betts
Photographs are not to scale and do not represent detailed images of the respective products.



SHIELD-KON® two-part screen connector

Installation:

1. After stripping the screen (approx. 12.7 mm length), push the outer sleeve onto the outer insulation. If this is too thick, push on the outer sleeve from front after step 3.
2. Extend the screen braiding by rotating the inside conductor slightly and pushing the inner sleeve under the screen braiding.
3. Position the inner sleeve in such a way that about 1.6 mm is still protruding from the end of the screen, and press on the braiding.
4. Push the conductor under the outer sleeve and push the outer sleeve over the braiding.
5. Position outer sleeve and make sure that ends of all wires in the screen braiding and the outer conductor are hidden.
6. Crimp both sleeves.



Which inner sleeve to which outer sleeve?

Inner sleeve GSB:

Define the maximum outer diameter of the inner sheath under the braid/screen. Select from the chart the matching inner sleeve (outer diameter inner sheath = inner diameter inner sleeve). In case of in-between values, please select the next size.

Outer sleeve GSC:

Add 1.5-2 mm to the outer diameter of the selected inner sleeve and then select the outer sleeve (resulting diameter after addition = inner diameter of outer sleeve).

Press insert:

By means of the selected outer sleeve, you can now determine the appropriate press insert.

SHIELD-KON® crimping inserts

Application range

- Two-part screen connector
- Crimping inserts for SHIELD-KON® processing tool WT 4454 G

Design

- Crimping profile: Hexagonal



Article number	Article designation	Suitable for outer sheaths	Pieces / PU
61789480	4419-4403 G	GSC 5101 / 5128 / 5149 / 5156 / 5175	1
61789490	4406-4410 G	GSC 5187 / 5194 / 5199 / 5205 / 5219 / 5225 / 5232	1
61789500	4411-4414 G	GSC 5261 / 5275 / 5281 / 5287 / 5297	1
61789510	4415-4417 G	GSC 5312 / 5327 / 5348	1
61789520	5450-5451 G	GSC 5359 / 5375	1
61789530	5452 G	GSC 5405 / 5415	1
61789540	5454 G	GSC 5425	1
61789550	5456 G	GSC 5460	1
61789560	5457 G	GSC 5500	1

SHIELD-KON® is a registered trademark of Thomas & Betts
Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Insulating, protecting, shrinking

Insulating tapes and insulating sheaths

Temflex™ 1500 insulating tape



Benefits

- Waterproof
- Adhesive on one side

Application range

- Multipurpose insulating tape made from PVC
- Universal electrical insulating tape for insulating, bundling, marking.

Approvals



- Type acc. to VDE: type 5

Technical data



Material
PVC
Resistant to most solvents



Temperature range
-10 °C to +90 °C

Design

- Colours: black, red, yellow, green, blue, brown, grey, white, orange, violet, green-yellow.

Article number	Article designation	Colour	Length (m) x tape width (mm) x thickness (mm)	Material	Pieces / PU
61721040	Temflex 1015	white	10 x 15 x 0.15	PVC	10
61721030	Temflex 1015	black	10 x 15 x 0.15	PVC	10
61721050	Temflex 1015	green	10 x 15 x 0.15	PVC	10
61721060	Temflex 1015	blue	10 x 15 x 0.15	PVC	10
61721070	Temflex 1015	red	10 x 15 x 0.15	PVC	10
61721080	Temflex 1015	green-yellow	10 x 15 x 0.15	PVC	10
61721045	Temflex 1015	yellow	10 x 15 x 0.15	PVC	10
61721090	Temflex 2515	black	25 x 15 x 0.15	PVC	10
61721100	Temflex 2515	white	25 x 15 x 0.15	PVC	10
61721110	Temflex 2515	blue	25 x 15 x 0.15	PVC	10
61721120	Temflex 2515	red	25 x 15 x 0.15	PVC	10
61721130	Temflex 2515	green	25 x 15 x 0.15	PVC	10
61721140	Temflex 2525	black	25 x 25 x 0.15	PVC	10

Temflex™ 1183 is a registered trademark of 3M
Photographs are not to scale and do not represent detailed images of the respective products.

TI insulating tape



Benefits

- Protects against corrosion
- Non-aging
- Chemical resistance

Application range

- Insulating tapes and self-amalgamating tape

Approvals



Technical data



Colour delivered
White



Material
Non-adhesive fluoropolymer tape
Water-repellent



Temperature range
-160 °C to +250 °C

Article number	Article designation	Colour	Length (m) x tape width (mm) x thickness (mm)	Material	Pieces / PU
61713080	TI 1212 insulating tape	white	12 x 12 x 0.1	PTFE	10

Photographs are not to scale and do not represent detailed images of the respective products.

TBTA self-amalgamating tape



Benefits

- Contains a dense insulation layer with fault-free electrical stability and permanent resistance to the ingress of humidity, for example to protect and insulate contact rails and associated assembly elements.

Application range

- Insulating tapes and self-amalgamating tape

Approvals



Technical data



Caution
Insulation and sheathing of cables and connections up to 65 kV



General
Stretch ratio: 3:1



Info
Offers UV and ozone protection



Colour delivered
Black



Material
Based on ethylene propylene rubber
Halogen and cadmium-free



Temperature range
-55 °C to +105 °C

Article number	Article designation	Length (m) x tape width (mm) x thickness (mm)	Pieces / PU
61810210	TBTA-ZH-19	9 x 19 x 0.76	1
61810220	TBTA-ZH-25	9 x 25 x 0.76	1
61810230	TBTA-ZH-38	9 x 38 x 0.76	1

Photographs are not to scale and do not represent detailed images of the respective products.

Insulating tube ISS



Benefits

- The ISS insulating tube provides good insulation against heat, cold or temperature fluctuations.
- It is also resistant to most chemicals.

Application range

- Insulating tapes and insulating sheaths

Approvals



Note

- Not suitable for shrinking.

Technical data



Material
 Silicone
 UV-resistant



Temperature range
 -60°C to +180°C

Article number	Article designation	Colour	Internal Ø x wall thickness (mm)	Material	Contents (m)
61760060	ISS 2	natural	2.00 x 0.40	Silicone	100
61760070	ISS 3	natural	3.00 x 0.40	Silicone	100
61760080	ISS 4	natural	4.00 x 0.75	Silicone	100
61760090	ISS 5	natural	5.00 x 0.90	Silicone	100
61760100	ISS 6	natural	6.00 x 0.90	Silicone	100
61760110	ISS 7	natural	7.00 x 0.90	Silicone	100
61760120	ISS 8	natural	8.00 x 1.00	Silicone	50
61760130	ISS 9	natural	9.00 x 1.05	Silicone	50
61760140	ISS 10	natural	10.00 x 1.05	Silicone	50

Photographs are not to scale and do not represent detailed images of the respective products.

Insulating tube ISY



Application range

- Insulating tubes
- For insulation of connections. Not suitable for shrinking.

Product features

- Smooth surface

Approvals



- DIN 40621

Note

- 0.1 mm wall thickness = 1 kv dielectric strength

Design

- Colours: black RAL 9005, white similar to RAL 9003

Technical data



Info
 Without fabric
 Flame-retardant



Colour delivered
 Black and white



Material
 Soft PVC
 Smooth surface



Temperature range
 -10°C to +60°C

Article number	Article designation	Colour	Internal Ø x wall thickness (mm)	Material	Contents (m)
61793030	ISY 2	black	2.00 x 0.40	PVC	1,000
61793040	ISY 3	black	3.00 x 0.40	PVC	750
61793050	ISY 4	black	4.00 x 0.50	PVC	500
61793060	ISY 5	black	5.00 x 0.60	PVC	500
61793070	ISY 6	black	6.00 x 0.60	PVC	400
61793080	ISY 7	black	7.00 x 0.70	PVC	500
61793090	ISY 8	black	8.00 x 0.70	PVC	500
61793100	ISY 9	black	9.00 x 0.70	PVC	400
61793110	ISY 10	black	10.00 x 0.70	PVC	300
61793116	ISY 10	white	10.00 x 0.70	PVC	300
61793119	ISY 16	black	16.00 x 1.00	PVC	150

Photographs are not to scale and do not represent detailed images of the respective products.

Copper braid



Benefits

- EMC-compliant screening improves compatibility and protects the cable from interferences transmitted by other electric fields

Application range

- EMC-compliant screening
- Can be used as earthing tape

Approvals



Design

- With these three available sizes, a diameter range from 1 to 20 mm can be covered.
- Variable diameter by tightening the braid.

Technical data



General

Minor differences are possible depending on the production batch



Note

Degree of coverage: 85 % at maximum opening



Material

Tinned-copper



Temperature range

Max. temperature: +120 °C (short-term)
-30 °C to +105 °C

Suitable conduits

- SILVYN® EMC AS-CU Page 814

Article number	Article designation	For mm ²	Approx. Ø range in mm	Number of wires x Ø (mm)	Weight (g)	Contents (m)
61721370	CU 14	1.32	1 - 4	24 x 7 x 0,10	17,0	100,0
61721380	CU 410	4.14	4 - 10	24 x 22 x 0,10	38,0	100,0
61721390	CU 1020	8.29	10 - 20	48 x 22 x 0,10	75,0	100,0

Photographs are not to scale and do not represent detailed images of the respective products.

3M Scotch™ 1183 screening tape



Benefits

- This electrically-conductive strip provides exceptional screening of electromagnetic fields.
- Uniform foil composition and its good conductivity to the substrate ensure low contact resistance, which is crucial for the degree of screening.
- Solderable and corrosion-resistant
- Acrylic adhesive that is resistant to solvents

Application range

- EMC-compliant screening

Product features

- This copper foil is plated with a thin layer of tin.
- This provides very good soldering characteristics and resistance to corrosion and oxidation.
- The tin-plating used is compatible with a wide range of base materials such as aluminium, lead and tin alloys, and galvanised steels.

Approvals



Technical data



Caution

Adhesion (stripping force) : 3.8 N / 10 mm
Tear strength: 44 N / 10 mm



Approvals

UL-recognised



Note

Contact resistance (in acc. with MIL-STD-202):
0.005 ohms
Data sheet is available upon request



Info

Storage: good stability when stored in a cool and dry location (room temperature and approx. 50% relative humidity)



Colour delivered

Silver grey (RAL 7001)



Material

The 3M screening tape consists of a smooth tin-plated copper film as a lining with a conductive acrylic adhesive.



Temperature range

-10 °C to +80 °C

Design

- Electromagnetic field screening
- Electrostatic discharge

Article number	Article designation	Width (mm)	Contents (m)
61721420	3M Scotch 1183 / 9x16,5	9	16.5
61721421	3M Scotch 1183 / 12x16,5	12	16.5
61721422	3M Scotch 1183 / 19x16,5	19	16.5
61721423	3M Scotch 1183 / 25x16,5	25	16.5

Scotch™ 1183 is a registered trademark of 3M

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-SC-M refer to page 668
- SKINTOP® MS-SC refer to page 719

HOTY heat-shrink tube



HOTY heat-shrink tube

Application range

- PVC insulation and protection
- HOTY heat-shrink tubing is used for protecting and insulating contacts, cable lugs, connectors etc.

Approvals



Design

- The conduits are delivered in an expanded state.
- They can be easily pushed over the parts to be insulated. They are then heated briefly with a hot-air pistol so that they will shrink back to their original diameter and cling firmly to the parts.

Suitable tools

- HG 2310 LCD hot-air pistol refer to page 948

Technical data

- General**
Shrinking temperature: +120°C
Shrinking ratio: 2:1
- Material**
PVC
UV-resistant - black
- Test voltage**
Dielectric strength: 20 kV/mm
- Temperature range**
-20°C to +90°C
Storage temperature: max. +18°C

Article number	Article description	Internal Ø before contraction (mm)	Shrinkage range (mm)	Panel thickness, shrunk +/- 0.1 mm	Contents (m)
61716700	HOTY 1	2.5	1.2 - 2.5	0.4	100.0
61716720	HOTY 2	4.0	2.0 - 4.0	0.5	100.0
61716740	HOTY 3	6.0	3.0 - 6.0	0.5	100.0
61716760	HOTY 4	7.0	4.0 - 7.0	0.5	100.0
61716780	HOTY 6	11.0	6.0 - 11.0	0.6	100.0
61716800	HOTY 8	14.0	8.0 - 14.0	0.6	100.0
61716820	HOTY 10	17.0	10.0 - 17.0	0.8	100.0
61716840	HOTY 13	20.0	13.0 - 20.0	1.0	100.0
61716860	HOTY 16	25.0	16.0 - 25.0	1.0	50.0
61716880	HOTY 20	31.0	20.0 - 31.0	1.0	50.0

Other colours are available on request (BK/YE/WH/Transparent).
Photographs are not to scale and do not represent detailed images of the respective products.



PLG - HSB box shrink tube



Benefits

- Designed for effective electrical insulation
- A viewing window allows for content inspection.

Application range

- This flexible and quick-shrinking tube can be used everywhere for bundling, insulation and marking.

Approvals



Suitable tools

- HG 2310 LCD hot-air pistol refer to page 948

Technical data



General
Cadmium-free



Note
Good chemical-resistance
UV-resistant - black



Info
Shrinking ratio: 2:1
Length change during shrinking: maximum ± 10 %



Material
Cross-linked polyolefin, thin wall
Transparent = halogen-free



Temperature range
-55°C to +125°C
Shrinking temperature: +120°C

Article number	Article description	Internal Ø before contraction (mm)	Shrinkage range (mm)	Panel thickness, shrunk +/- 0.1 mm	Contents (m)	PU
Black						
61752220	HSB 46-0	1.2	1.2 - 0.6	0.4	12.0	1
61752230	HSB 63-0	1.6	1.6 - 0.8	0.4	12.0	1
61752240	HSB 93-0	2.4	2.4 - 1.2	0.5	11.5	1
61752250	HSB 125-0	3.2	3.2 - 1.6	0.5	11.5	1
61752260	HSB 187-0	4.7	4.7 - 2.4	0.5	9.5	1
61752270	HSB 250-0	6.4	6.4 - 3.2	0.6	7.5	1
61752280	HSB 375-0	9.5	9.5 - 4.8	0.6	6.5	1
61752290	HSB 500-0	12.7	12.7 - 6.4	0.7	6.0	1
61752300	HSB 750-0	19.1	19.1 - 9.5	0.7	5.0	1
61752310	HSB 1000-0	25.4	25.4 - 12.7	0.8	3.3	1
Transparent						
61752830	HSB 46-C	1.2	1.2 - 0.6	0.4	12.0	1
61752840	HSB 63-C	1.6	1.6 - 0.8	0.4	12.0	1
61752850	HSB 93-C	2.4	2.4 - 1.2	0.5	11.5	1
61752860	HSB 125-C	3.2	3.2 - 1.6	0.5	11.5	1
61752870	HSB 187-C	4.7	4.7 - 2.4	0.5	9.5	1
61752880	HSB 250-C	6.4	6.4 - 3.2	0.6	7.5	1
61752890	HSB 375-C	9.5	9.5 - 4.8	0.6	6.5	1
61752900	HSB 500-C	12.7	12.7 - 6.4	0.7	6.0	1
61752910	HSB 750-C	19.1	19.1 - 9.5	0.7	5.0	1
61752920	HSB 1000-C	25.4	25.4 - 12.7	0.8	3.3	1

Other colours are available upon request (see description).

Photographs are not to scale and do not represent detailed images of the respective products.

TBW / TBM shrink tube



Benefits

- Fulfills high mechanical requirements for underwater and underground insulations and repairs.
- More resistant and flexible protection

Application range

- Thick and medium-wall shrink tubes for 600 V, 90°C low voltage applications in continuous use
- For sealing and insulating cable splices, connections, end caps and sheaths.

Approvals



- Approval for ESI 09-11

Technical data



General
Shrinking ratio 3:1
UV-resistant



Material
Cross-linked modified polyolefin, with thermoplastic adhesive coating inside
Halogen-free



Temperature range
-55°C to +110°C
Shrinking temperature: +120°C

Design

- TBW = thick wall
- TBM = medium wall
- Piece = 1.22 m

Suitable tools

- HG 2310 LCD hot-air pistol refer to page 948

Article number	Article description	Internal Ø before contraction (mm)	Shrinkage range (mm)	Panel thickness, shrunk +/- 0.1 mm	Pieces / PU
61810080	TBW 0350	8.9	3.0	1.8	5.0
61810090	TBW 0750	19.1	6.1	2.4	5.0
61810100	TBW 1500	38.1	11.9	4.1	2.0
61810110	TBW 2000	50.8	16.0	4.1	1.0
61810130	TBW 4700	119.9	39.9	4.3	1.0
61810140	TBM 0750	19.1	5.6	2.0	5.0
61810150	TBM 1100	27.9	10.2	2.0	3.0
61810160	TBM 1500	38.1	12.7	2.0	2.0
61810170	TBM 2050	52.1	19.1	2.0	1.0
61810180	TBM 3500	88.9	30.0	2.4	1.0
61810190	TBM 6700	170.2	58.4	2.8	1.0
61810200	TBM 9000	228.6	77.0	3.0	1.0

Photographs are not to scale and do not represent detailed images of the respective products.

CMP shrink tube

Application range

- CMP is primarily used as mechanical and electrical insulation and as corrosion protection.

Approvals



Design

- Other colours are available upon request
- Article designation e.g. red-2: CMP 46-2-A
- Red-2, yellow-4, white-9, blue-6, transparent-C.

Included

- Cartons with 1.22 m units

Technical data



General
Self-extinguishing



Approvals
UL-listed



Note
Dielectric strength: 20 kV/mm
Length change during shrinking: maximum ±10 %



Info
Shrinking temperature: +110°C
Shrinking ratio: 2:1



Colour delivered
Black
Transparent = halogen-free



Material
Cross-linked modified polyolefin



Temperature range
-55°C to +125°C



Article number	Article description	Internal Ø before contraction (mm)	Shrinkage range (mm)	Panel thickness, shrunk ± 0.1 mm	Contents (m)	PU
61744530	CMP 46-0-A	1.2	1.2 - 0.6	0.4	30.5	1
61744540	CMP 63-0-A	1.6	1.6 - 0.8	0.4	30.5	1
61744550	CMP 93-0-A	2.4	2.4 - 1.2	0.5	30.5	1
61744560	CMP 125-0-A	3.2	3.2 - 1.6	0.5	30.5	1
61744570	CMP 187-0-A	4.7	4.7 - 2.4	0.5	30.5	1
61744580	CMP 250-0-A	6.4	6.4 - 3.2	0.6	30.5	1
61744590	CMP 375-0-A	9.5	9.5 - 4.8	0.6	30.5	1
61744600	CMP 500-0-A	12.7	12.7 - 6.4	0.7	30.5	1
61744610	CMP 750-0-A	19.1	19.1 - 9.5	0.7	12.2	1
61744620	CMP 1000-0-A	25.4	25.4 - 12.7	0.8	12.2	1

Other colours are available upon request (see description).

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- HG 2310 LCD hot-air pistol refer to page 948

GYS shrink tube

Application range

- This green-yellow polyolefin shrinking tube is used for electrical and mechanical insulation, corrosion protection, as well as for identifying and marking earthing connections and cables.

Approvals



Design

- Green-yellow polyolefin shrink-tubing

Included

- Cartons with 1.22 m units

Technical data



General
Dielectric strength: 20 kV/mm



Info
Length change during shrinking: maximum ±10 %
Shrinking ratio: 2:1



Material
Cross-linked modified polyolefin
UV-resistant



Temperature range
-55°C to +135°C
Shrinking temperature: +120°C



Article number	Article description	Internal Ø before contraction (mm)	Shrinkage range (mm)	Panel thickness, shrunk ± 0.1 mm	Contents (m)	PU
61744535	GYS 125-E-A	3.2	3.2 - 1.6	0.5	30.5	1
61744545	GYS 187-E-A	4.8	4.8 - 2.4	0.5	30.5	1
61744555	GYS 250-E-A	6.4	6.4 - 3.2	0.6	30.5	1
61744565	GYS 375-E-A	9.5	9.5 - 4.8	0.6	30.5	1
61744575	GYS 500-E-A	12.7	12.7 - 6.4	0.6	30.5	1
61744585	GYS 750-E-A	19.0	19.0 - 9.5	0.7	12.2	1
61744595	GYS 1000-E-A	25.4	25.4 - 12.7	0.8	12.2	1

Photographs are not to scale and do not represent detailed images of the respective products.

PKG shrink tube



Benefits

- Flame-retardant
- Good chemical-resistance
- High mechanical stability
- Good weather-resistance

Application range

- High shrink ratio and adhesive coating
- The semi-stiff tube is mainly used as a protection from moisture and corrosion.

Approvals



Included

- Cartons with 0.6 m units

Suitable tools

- HG 2310 LCD hot-air pistol refer to page 948

Technical data



General

Shrinking ratio 3:1
Length change during shrinking: maximum ± 15 %



Note

Dielectric strength: 10 kV/mm



Colour delivered

Black



Material

Cross-linked modified polyolefin, with thermo-plastic adhesive coating inside



Temperature range

-55°C to +110°C

Article number	Article description	Internal Ø before contraction (mm)	Shrinkage range (mm)	Panel thickness, shrunk + 0.1 mm	Contents (m)	PU
61810850	PKG 0301-0-C	3.0	3.0 - 1.0	1.0	12.0	1
61810860	PKG 0602-0-C	6.0	6.0 - 2.0	1.0	9.0	1
61810870	PKG 0903-0-C	9.0	9.0 - 3.0	1.4	6.0	1
61810890	PKG 1204-0-C	12.0	12.0 - 4.0	1.8	5.4	1
61810900	PKG 1806-0-C	18.0	18.0 - 6.0	2.2	3.6	1
61810910	PKG 2408-0-C	24.0	24.0 - 8.0	2.5	3.0	1
61810920	PKG 4013-0-C	40.0	40.0 - 13.0	2.5	2.4	1

Photographs are not to scale and do not represent detailed images of the respective products.

HG 2310 LCD hot-air pistol



Benefits

- Individual adaptation of the four preset programs
- Four programmes are preset in the factory
- Optical LCD temperature and speed display
- High-performance, electronically regulated professional hot-air blower with continuous air flow and temperature regulation and LCD display

Application range

- Robust housing for manual and stationary operation.
- Control cabinets and equipment wiring

Product features

- Adjustable temperature setting
- Double protection against overheating - thermostat and thermal fuse
- Air inlet with mesh to protect against coarse impurities
- Adjustable speed setting

Approvals



Design

- Soft grip and soft stand for secure hold
- Set-button: for changing pre-adjusted programmes
- Programs: set ex-works

Included

- Hot-air pistol, reflector set, case

Article number	Article description	Max. heating capacity	Attainable air temperature	Pieces / PU
61801245	HG 2310 LCD incl. reflector + case	2,300.0	650.0	1.0

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- PLG - HSB box shrink tube refer to page 946
- TBW / TBM shrink tube refer to page 946

TEB branch muff

Benefits

- Secure sealing through thermoplastic adhesive coating on the inside
- Good resistance to chemicals and solvents
- Ensures high tensile strength and mechanical protection

Application range

- Insulation and sealing of cable splices

Approvals



- Protection rating: IP67

Design

- Double-walled

Technical data



General
UV-resistant



Note
Shrinking ratio: > 2:1
Shrinking temperature: +120 °C



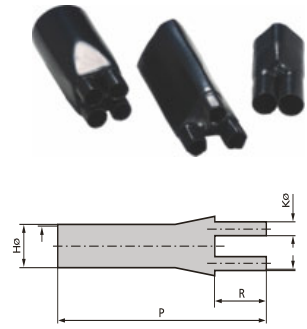
Colour delivered
Black



Material
Cross-linked modified polyolefin, with thermoplastic adhesive coating inside
Halogen and cadmium-free



Temperature range
-50 °C to +100 °C



Article number	Article description	Number of cores	H min. (mm)	H max. (mm)	K min. (mm)	K max. (mm)	P* (mm)	R* (mm)	Pieces / PU
61830110	TEB 2-30 / 12	2.0	30.0	9.4	12.0	4.1	84.6	27.0	10.0
61830120	TEB2-50 / 21	2.0	50.0	24.0	21.0	7.0	107.1	30.6	1.0
61830130	TEB3-60 / 24	3.0	60.0	22.0	24.0	8.0	185.0	45.0	1.0
61830140	TEB4-38 / 11	4.0	38.0	14.0	11.0	4.0	110.0	20.0	1.0
61830150	TEB4-55 / 20	4.0	55.0	22.0	20.0	8.5	190.0	45.0	1.0
61830160	TEB4-72 / 25	4.0	72.0	22.0	25.0	8.5	190.0	45.0	1.0
61830170	TEB4-100 / 35	4.0	100.0	33.0	35.0	14.0	215.0	50.0	1.0

1. after shrinking +/- 10%; 2. after shrinking +/- 20%

Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- Secure sealing through thermoplastic adhesive coating on the inside
- Good resistance to chemicals and solvents
- Ensures high tensile strength and mechanical protection

Application range

- Cable end sealing

Approvals



- Protection rating: IP67

Design

- Double-walled
- For sealing cable ends against the seepage of moisture and contaminants

Technical data



General
UV-resistant



Colour delivered
Black

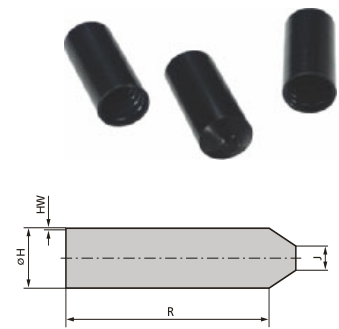


Material
Cross-linked modified polyolefin, with thermoplastic adhesive coating inside
Halogen and cadmium-free



Temperature range
-50 °C to +100 °C

TEC sealing cap



Article number	Article description	H min. (mm)	H max. (mm)	J max. (mm)	Cable Ø (mm)	R* after shrinking (mm)	Panel thickness HW* (mm)	Pieces / PU
61830000	TEC 15/4,5	15.0	4.5	4.0	5.0 - 12.0	30.0	2.0	10.0
61830010	TEC 25/9	25.0	9.0	6.5	10.0 - 22.0	50.0	2.3	10.0
61830020	TEC 36/15	36.0	15.0	10.5	17.0 - 30.0	80.0	3.0	10.0
61830040	TEC 55/25	55.0	25.0	16.0	28.0 - 47.0	130.0	3.3	10.0
61830050	TEC 80/40	80.0	40.0	17.0	45.0 - 70.0	150.0	4.0	10.0
61830060	TEC 102/60	102.0	60.0	26.0	68.0 - 90.0	140.0	4.0	10.0
61830070	TEC 148/57	148.0	57.0	27.0	80.0 - 133.0	105.0	3.3	10.0

Photographs are not to scale and do not represent detailed images of the respective products.

SHRINK-KON® shrink tube set



■ Benefits

- Every model of the shrinking tubes is available as refill packs.
- Shockproof plastic case with content

■ Application range

- Shrink tube set
- The set is mainly used for repair and maintenance, for small series production and in research and development.

■ Included

- The shrink set in a practical case
- It comes with an assortment of common shrinking tube sizes of type PLG.
- Shrink tube pieces: per 1 pack size, see refill packs
- Optional: with hot air pistol

■ Suitable tools

- HG 2310 LCD hot-air pistol refer to page 948

■ Approvals



Article number	Article description	Max. heating capacity	Attainable air temperature	Pieces / PU
61753180	SK 1400 G Shrink-Kon case with hot-air pistol	2,000.0	650.0	1.0

SHRINK-KON® is a registered trademark of Thomas & Betts
Photographs are not to scale and do not represent detailed images of the respective products.

■ Accessories

- SHRINK-KON® set refill packs refer to page 950

SHRINK-KON® set refill packs



■ Approvals



■ Included

- Shrink tube set

Article number	Article designation	Colour	Internal Ø before contraction (mm)	Shrinkage range (mm)	Panel thickness, shrunk in mm	Piece x cm / PU	PU
61753190	PLG 63-0-5R	black	1.6	0.8 - 1.6	0.4	50 x 5	1
61753200	PLG 63-C-5R	transparent	1.6	0.8 - 1.6	0.4	50 x 5	1
61753210	PLG 93-0-5R	black	2.4	1.2 - 2.4	0.5	50 x 5	1
61753220	PLG 93-C-5R	transparent	2.4	1.2 - 2.4	0.5	50 x 5	1
61753260	PLG 125-0-10R	black	3.2	1.6 - 3.2	0.5	25 x 10	1
61753250	PLG 125-C-10R	transparent	3.2	1.6 - 3.2	0.5	25 x 10	1
61753230	PLG 125-9-10R	white	3.2	1.6 - 3.2	0.5	25 x 10	1
61753240	PLG 125-4-10R	yellow	3.2	1.6 - 3.2	0.5	25 x 10	1
61753270	PLG 187-0-10R	black	4.7	2.4 - 4.7	0.5	25 x 10	1
61753300	PLG 187-C-5R	transparent	4.7	2.4 - 4.7	0.5	40 x 5	1
61753290	PLG 187-4-5R	yellow	4.7	2.4 - 4.7	0.5	40 x 5	1
61753280	PLG 187-6-5R	blue	4.7	2.4 - 4.7	0.5	40 x 5	1
61753320	PLG 250-0-10R	black	6.4	3.2 - 6.4	0.6	20 x 10	1
61753330	PLG 250-9-5R	white	6.4	3.2 - 6.4	0.6	40 x 5	1
61753340	PLG 250-4-5R	yellow	6.4	3.2 - 6.4	0.6	40 x 5	1
61753310	PLG 250-6-10R	blue	6.4	3.2 - 6.4	0.6	20 x 10	1
61753350	PLG 375-0-10R	black	9.5	4.7 - 9.5	0.6	15 x 10	1
61753360	PLG 375-6-10R	blue	9.5	4.7 - 9.5	0.6	15 x 10	1
61753380	PLG 500-0-18R	black	12.7	6.4 - 12.7	0.6	8 x 18	1
61753370	PLG 500-2-10R	red	12.7	6.4 - 12.7	0.6	15 x 10	1
61753400	PLG 750-0-18R	black	19.1	9.5 - 19.1	0.8	6 x 18	1
61753390	PLG 750-6-10R	blue	19.1	9.5 - 19.1	0.8	10 x 10	1
61753410	PLG 1000-0-18R	black	25.4	12.7 - 25.4	0.9	3 x 18	1

Photographs are not to scale and do not represent detailed images of the respective products.

NW nylon coil / KW plastic coil



NW nylon coil



Benefits

KW plastic coil

- The flexibility of the cables is largely preserved
- Spiral-shaped cut tube
- For time-saving cable and wire bundling

Application range

KW plastic coil

- For the manufacturing of cable harnesses with branch-offs
- For protection against mechanical stress

NW nylon coil

- For applications, refer to KW plastic coil

Approvals



Design

NW nylon coil

- Nylon tape/plastic coil and coiling tool

Technical data



General
KW plastic coil
UV-resistant



Approvals
KW plastic coil
Flammability class: UL 94 V-0



Note
NW nylon coil
UV-resistant



Material
KW plastic coil
Polyamide - black
Polyethylen - nature
NW nylon coil
Fine-profile corrugated polyamide 12 conduit
Flammability class: UL 94 V-0



Temperature range
KW plastic coil
-40 °C to +90 °C
NW nylon coil
Dynamic application: -15 °C to +80 °C
Fixed application: -15 °C to +100 °C

Article number	Article description	Colour / bundle Ø (mm)	Contents (m)
KW plastic coil			
61600010	Plastic spiral KW 3	nature / 2 - 7	50
61600015	Plastic spiral KW 3	black / 2 - 7	50
61600040	Plastic spiral KW 5	nature / 5 - 20	30
61600045	Plastic spiral KW 5	black / 5 - 20	25
61600050	Plastic spiral KW 5	yellow / 5 - 20	25
61600070	Plastic spiral KW 12	nature / 10 - 40	30
61722840	Plastic spiral KW 12	black / 10 - 40	25
61600080	Plastic spiral KW 12	yellow / 10 - 40	25
NW nylon coil			
61600100	Nylon spiral NW 5	white / 5 - 20	50
61600130	Nylon spiral NW 10	colourless / 10 - 40	100

Other sizes and colours are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

KW plastic coil

- Coiling tool spirals refer to page 951

Coiling tool spirals



Application range

- This small coiling tool for winding coils can make work significantly easier.

Design

- Nylon tape/plastic coil and coiling tool

Article number	Article description	Pieces / PU
61759940	Winding tool	1

Photographs are not to scale and do not represent detailed images of the respective products.

Cable-Eater bunched cable conduit



Cable-Eater bunched cable conduit

Benefits

- The cable eater offers the ideal solution for bundling cable/wires.

Application range

- The main fields of application include the bundling and protection of cables in cable pre-assembly, the electrical industry and switch cabinet and plant construction.

Approvals



Included

- Suitable insertion tool
- SHR protective cable conduit

Technical data

Note	Halogen-free Flame-retardant according to UL 94 HB
Colour delivered	White Black
Material	Polypropylene (PP) UV-resistant

Article number	Article description	Colour / bundle Ø (mm)	Inner Ø (mm)	Panel thickness (mm)	Processing tool/installation tool	Contents (m)
61830300	SHR-08-PPB	black / 6 - 9	8.0	0.8	STKP 8	100
61830310	SHR-15-PPB	black / 10 - 16	15.0	0.8	STKP 15	50
61830320	SHR-20-PPB	black / 17 - 21	20.0	0.9	STKP 20	30
61830330	SHR-25-PPB	black / 21 - 28	25.0	1.0	STKP 25	20
61830302	SHR-08-PPW	white / 6 - 9	8.0	0.8	STKP 8	100
61830312	SHR-15-PPW	white / 10 - 16	15.0	0.8	STKP 15	50
61830322	SHR-20-PPW	white / 17 - 21	20.0	0.9	STKP 20	30
61830332	SHR-25-PPW	white / 21 - 28	25.0	1.0	STKP 25	20

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Spare tool Cable - Eater refer to page 952

Spare tool Cable - Eater



Application range

- Cable pull-in tool for SILVYN® RILL PA6 SINUS

Suitable conduits

- SILVYN® RILL PA6 SINUS Page 811

Article number	Article description	Pieces / PU
Cable Eater tool		
61830340	CAT - 08 - PP	1
61830350	CAT - 15 - PP	1
61830360	CAT - 20 - PP	1
61830370	CAT - 25 - PP	1

Photographs are not to scale and do not represent detailed images of the respective products.

Basic Tie cable tie



Benefits

- High resistance to bases, oils, greases, oil derivatives, solvents containing chlorine

Application range

- Basic Tie is a multipurpose cable tie for many applications.

Product features

- Flame retardancy: UL 94 class V2.
- Water absorption: 2.5 % (50 % relative humidity)

Approvals



Note

- Not resistant to phenols
- Limited resistance to acids



Info

- The standard cable ties for many applications

Technical data



General
Dielectric strength:
50,000 volts/mm
For higher tensile strength



Note
Melting point: +256 °C



Material
Polyamide 6.6 - halogen-free



Temperature range
-40 °C to +85 °C
Max. temperature: +110 °C (short-term)

Article number	Article description	UL approval	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	PU
Natural colour						
61831001	Basic Tie 98x2.5 nat.	yes	98.0 x 2.5	1.0 - 21.0	80	1,000
61831003	Basic Tie 160x2.6 nat.	yes	160.0 x 2.6	1.0 - 40.0	80	1,000
61831004	Basic Tie 200x2.6 nat.	yes	200.0 x 2.6	1.0 - 52.0	80	1,000
61831005	Basic Tie 140x3.6 nat.	yes	140.0 x 3.6	2.0 - 35.0	130	1,000
61831006	Basic Tie 200x3.6 nat.	yes	200.0 x 3.6	2.0 - 50.0	130	1,000
61831007	Basic Tie 290x3.6 nat.	yes	290.0 x 3.6	2.0 - 80.0	130	500
61831013	Basic Tie 370x3.6 nat.	yes	370.0 x 3.6	2.0 - 103.0	130	100
61831009	Basic Tie 160x4.5 nat.	yes	160.0 x 4.5	2.5 - 40.0	220	1,000
61831011	Basic Tie 200x4.8 nat.	yes	200.0 x 4.8	3.0 - 50.0	220	1,000
61831014	Basic Tie 290x4.8 nat.	yes	290.0 x 4.8	3.5 - 79.0	220	100
61831016	Basic Tie 360x4.8 nat.	yes	360.0 x 4.8	3.5 - 103.0	220	100
61831020	Basic Tie 240x7.8 nat.	yes	240.0 x 7.8	3.5 - 63.0	540	100
61831021	Basic Tie 300x7.8 nat.	yes	300.0 x 7.8	4.0 - 80.0	540	100
61831022	Basic Tie 365x7.8 nat.	yes	365.0 x 7.8	8.0 - 100.0	540	100
61831023	Basic Tie 450x7.8 nat.	yes	450.0 x 7.8	35.0 - 130.0	540	100
61831024	Basic Tie 540x7.8 nat.	yes	540.0 x 7.8	35.0 - 158.0	540	100
61831025	Basic Tie 750x7.8 nat.	yes	750.0 x 7.8	35.0 - 200.0	540	100
61831026	Basic Tie 780x9.0 nat.	yes	780.0 x 9.0	32.0 - 233.0	700	100
UV-resistant - black						
61831041	Basic Tie 98x2.5 bk	yes	98.0 x 2.5	1.0 - 21.0	80	1,000
61831043	Basic Tie 160x2.6 bk	yes	160.0 x 2.6	1.0 - 40.0	80	1,000
61831044	Basic Tie 200x2.6 bk	yes	200.0 x 2.6	1.0 - 52.0	80	1,000
61831045	Basic Tie 140x3.6 bk	yes	140.0 x 3.6	2.0 - 35.0	130	1,000
61831046	Basic Tie 200x3.6 bk	yes	200.0 x 3.6	2.0 - 50.0	130	1,000
61831047	Basic Tie 290x3.6 bk	yes	290.0 x 3.6	2.0 - 80.0	130	500
61831053	Basic Tie 370x3.6 bk	yes	370.0 x 3.6	2.0 - 103.0	130	100
61831049	Basic Tie 160x4.5 bk	yes	160.0 x 4.5	2.5 - 40.0	220	1,000
61831051	Basic Tie 200x4.8 bk	yes	200.0 x 4.8	3.0 - 50.0	220	1,000
61831054	Basic Tie 290x4.8 bk	yes	290.0 x 4.8	3.5 - 79.0	220	100
61831056	Basic Tie 360x4.8 bk	yes	360.0 x 4.8	3.5 - 103.0	220	100
61831060	Basic Tie 240x7.8 bk	yes	240.0 x 7.8	3.5 - 63.0	540	100
61831061	Basic Tie 300x7.8 bk	yes	300.0 x 7.8	4.0 - 80.0	540	100
61831062	Basic Tie 365x7.8 bk	yes	365.0 x 7.8	8.0 - 100.0	540	100
61831063	Basic Tie 450x7.8 bk	yes	450.0 x 7.8	35.0 - 130.0	540	100
61831064	Basic Tie 540x7.8 bk	yes	540.0 x 7.8	35.0 - 158.0	540	100
61831065	Basic Tie 750x7.8 bk	yes	750.0 x 7.8	35.0 - 200.0	540	100
61831066	Basic Tie 780x9.0 bk	yes	780.0 x 9.0	32.0 - 233.0	700	100

Photographs are not to scale and do not represent detailed images of the respective products.

Twist Tail™ cable tie



Twist Tail™ Kabelbinder



Info

- No special tool needed
- Worked instantly

Benefits

- The round, flat, edge-free tie-heads allow assembly without getting caught and protect against injury and damage at adjacent cables and components.
- The cable tie can be gripped securely for easy tightening.
- In addition, the safety-grip tab prevents the tie from slipping out during assembly, and secures it before tightening by hand.

Application range

- Industrial cable ties for quick and secure assembly
- General purpose applications, indoors and outdoors

Approvals



Design

- Wrap the cable tie around a bundle of cables, bend the excess tail in two directions and twist. The tail breaks right off, leaving no sharp edges to scratch your hands or your cables.
- Available in 3 different lengths and 2 colours (white and UV-resistant black)

Technical data



General

Tensile strength: 133 N



Approvals

Flammability class: UL 94 V-2/polyamide 6.6



Note

Halogen-free
silicone-free



Colour delivered

Black (RAL 9005), UV-resistant
white



Material

Polyamide 6.6

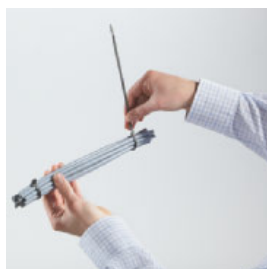
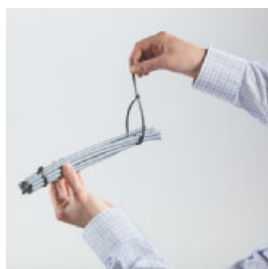


Temperature range

-40°C to +85°C

Article number	Article description	UL approval	Length (mm)	Max. bundle Ø (mm)	Pieces / PU
white					
61832007	TWIST TAIL TT-7-30-9-L	yes	181	45.0	50
61832009	TWIST TAIL TT-11-30-9-L	yes	282	76.0	50
61832011	TWIST TAIL TT-14-30-9-L	yes	358	102.0	50
Black (RAL 9005), UV-resistant					
61832008	TWIST TAIL TT-7-30-0-L	yes	181	45.0	50
61832010	TWIST TAIL TT-11-30-0-L	yes	282	76.0	50
61832012	TWIST TAIL TT-14-30-0-L	yes	358	102.0	50

TWIST TAIL™ is a registered trademark of Thomas & Betts
Photographs are not to scale and do not represent detailed images of the respective products.



TY - FAST® - UV-resistant cable ties / TY - FAST® standard cable ties



TY - FAST® standard cable ties

Benefits

TY - FAST® standard cable ties

- TY-FAST® cable ties have low threading and high tying forces due to their integrated lock.
- The round, flat, edge-free tie-heads allow assembly without getting caught and protect against injury and damage at adjacent cables and components.
- The raised tie end and the “SURE-GRIP” gripping profile on both sides of the tie end offer improved grip.
- The cable tie can be gripped securely for easy tightening.
- In addition, the safety-grip tab prevents the tie from slipping out during assembly, and secures it before tightening by hand or with a tool.

Application range

TY - FAST® standard cable ties

- Cable ties for industrial applications
- Industrial cable ties for quick and secure assembly

TY - FAST®- UV-resistant cable ties

- Cable ties for industrial applications

Approvals



TY - FAST® standard cable ties

- File Number E49405, see table

Design

TY - FAST®- UV-resistant cable ties

- TY-FAST® cable ties are also available in UV-resistant and weather-resistant design, in black.
- The description for these cable ties are marked with “x”.

Suitable tools

- TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers refer to page 962

Technical data



Approvals

TY - FAST® standard cable ties

Flammability class: UL 94 V-2/polyamide 6.6



Info

TY - FAST®- UV-resistant cable ties

In black colour UV-resistant and weather-proofed
Halogen-free



Colour delivered

TY - FAST®- UV-resistant cable ties

Black



Material

TY - FAST® standard cable ties

Polyamide 6.6 - halogen-free

TY - FAST®- UV-resistant cable ties

Polyamide 6.6



Temperature range

-40 °C to +80 °C

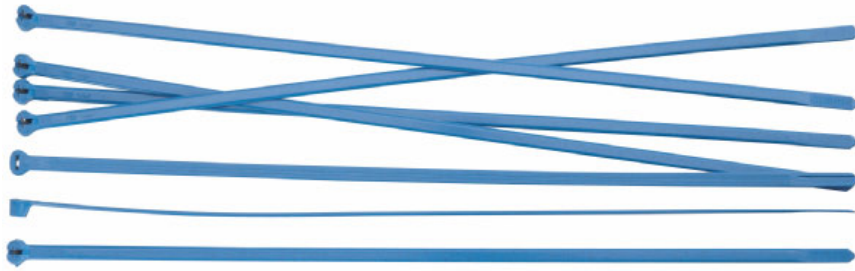
Article number	Article description	UL approval	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	Pieces / PU
Natural colour						
61810350	TY100-18	yes	111.0 x 2.4	25.0	80.0	1,000
61810360	TY125-18	yes	136.0 x 2.4	32.0	80.0	1,000
61810370	TY200-18	yes	197.0 x 2.4	50.0	80.0	1,000
61810380	TY125-40	yes	142.0 x 3.6	32.0	180.0	1,000
61810390	TY200-40	yes	205.0 x 3.6	50.0	180.0	1,000
61810400	TY300-40	yes	290.0 x 3.6	76.0	180.0	1,000
61810410	TY175-50	yes	186.0 x 4.7	44.0	220.0	1,000
61810420	TY300-50	yes	291.0 x 4.7	76.0	220.0	1,000
61810430	TY400-50	yes	368.0 x 4.7	102.0	220.0	1,000
61810440	TY200-120	no	219.0 x 7.6	50.0	540.0	500
61810450	TY400-120	yes	365.0 x 7.6	102.0	540.0	500
UV-resistant - black						
61810460	TY100-18x	yes	111.0 x 2.4	25.0	80.0	1,000
61810470	TY125-18x	yes	136.0 x 2.4	32.0	80.0	1,000
61810480	TY200-18x	yes	197.0 x 2.4	50.0	80.0	1,000
61810490	TY125-40x	yes	142.0 x 3.6	32.0	180.0	1,000
61810500	TY200-40x	yes	205.0 x 3.6	50.0	180.0	1,000
61810510	TY300-40x	yes	290.0 x 3.6	76.0	180.0	1,000
61810520	TY175-50x	yes	186.0 x 4.7	44.0	220.0	1,000
61810530	TY300-50x	yes	291.0 x 4.7	76.0	220.0	1,000
61810540	TY400-50x	yes	368.0 x 4.7	102.0	220.0	1,000
61810550	TY200-120x	no	219.0 x 7.6	50.0	540.0	500
61810560	TY400-120x	no	365.0 x 7.6	102.0	540.0	500

TY-FAST® is a registered trademark of Thomas & Betts

Photographs are not to scale and do not represent detailed images of the respective products.

New

TY-RAP® detectable cable ties



TY-RAP® Detektierbarer Kabelbinder

Benefits

- Detectable cable ties with international FDA and HACCP hygiene monitoring regulations
- The round, flat, edge-free tie-heads allow assembly without getting caught and protect against injury and damage at adjacent cables and components.
- The cable tie can be gripped securely for easy tightening.
- In addition, the safety-grip tab prevents the tie from slipping out during assembly, and secures it before tightening by hand or with a tool.

Application range

- Food and beverage industry, especially for production and processing equipment of milk and meat products
- Applications with strong chemical influences
- Pharmaceutical production

Product features

- The new Ty-Rap® cable ties are designed with a unique compound that activate metal detectors, X-ray and visual recognition systems.

Approvals



Note

- Storage requirements: nylon (polyamide) is, by its nature, susceptible to external influences. Cable ties are mechanically moistened in order to ensure optimal use. As such, they must be stored in a cool, dry location and must not be exposed to direct sunlight. Cable ties are packed in plastic bags to retain moisture; these should remain closed until the cable ties are used.

Suitable tools

- TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers refer to page 962

Technical data



Approvals

Flammability class: UL 94 HB/polypropylene
Flammability class: UL 94 V-2/polyamide 6.6



Colour delivered

Blue



Material

Polyamide 6.6 or polypropylene
Halogen-free and silicone-free



Temperature range

-40°C up to +85°C

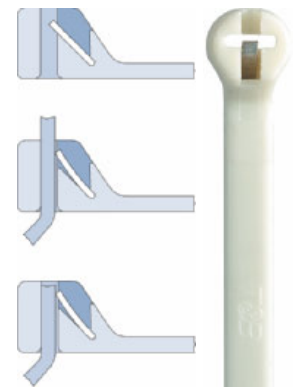
Article number	Article description	UL approval	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	Pieces / PU
Detectable polyamide 6.6						
61723351	Cable tie TY-RAP TY523M-NDT	no	92 x 2	2.0 - 6.0	80	100
61723352	Cable tie TY-RAP TY525M-NDT	no	186 x 4	3.5 - 45.0	220	100
61723353	Cable tie TY-RAP TY528M-NDT	no	360 x 4	3.5 - 102.0	220	100
61723354	Cable tie TY-RAP TY527M-NDT	no	340 x 7	6.0 - 90.0	540	50
Detectable polypropylene						
61723355	Cable tie TY-RAP TY523M-PDT	no	92 x 2	2.0 - 16.0	50	100
61723356	Cable tie TY-RAP TY525M-PDT	no	186 x 4	3.5 - 45.0	130	100
61723357	Cable tie TY-RAP TY528M-PDT	no	360 x 4	3.5 - 102.0	130	100
61723358	Cable tie TY-RAP TY527M-PDT	no	340 x 7	6.0 - 90.0	270	50

TY-FAST® is a registered trademark of Thomas & Betts

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

TY-RAP® standard cable ties



TY-RAP® standard cable ties

Benefits

- The blade ensures secure and durable binding
- The high strength is constant even under harsh conditions: extreme temperature ranges, humidity and extreme cold.
- The lock is also resistant to shocks and vibrations.

Application range

- Good quality cable ties with steel blade

Product features

- The steel blade is fixed to the tie head and is made from corrosion-resistant, anti-magnetic steel (type 316).

Approvals



- File Number E49405, see table

Design

- Cable ties with steel blade
- Standard colour: natural

Included

- Items provided with the add-in “B” are supplied in a handy workbox, where the cable ties are arranged properly.
- The TY-RAP® is packed in a recyclable plastic bag.

Suitable tools

- TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers refer to page 962

Technical data

- Note**
Steel blade: anti-magnetic steel 316
- Material**
Polyamide 6.6
Halogen-free
- Temperature range**
-40 °C to +80 °C

Article number	Article description	UL approval	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	Pieces / PU
TY-RAP® Standard						
61715000	TYB* 23 M	no	92.0 x 2.4	2.0 - 16.0	80.0	1,000
61716250	TY 232 M	yes	200.0 x 2.4	2.0 - 50.0	80.0	1,000
61716310	TY 234 M	yes	356.0 x 2.4	2.0 - 102.0	80.0	1,000
61715060	TYB* 24 M	no	140.0 x 3.6	2.0 - 29.0	180.0	1,000
61716370	TY 242 M	yes	208.0 x 3.6	2.0 - 50.0	180.0	1,000
61715180	TY 26 M	yes	281.0 x 3.6	2.0 - 76.0	180.0	1,000
61716430	TY 244 M	yes	368.0 x 3.6	2.0 - 103.0	180.0	1,000
61715120	TYB* 25 M	no	186.0 x 4.8	3.5 - 45.0	220.0	1,000
61716490	TY 253 M	yes	293.0 x 4.8	3.5 - 78.0	220.0	1,000
61715300	TY 28 M	yes	360.0 x 4.8	3.5 - 102.0	220.0	1,000
61716550	TY 272 M	yes	223.0 x 7.6	6.0 - 50.0	540.0	500
61715240	TY 27 M	yes	340.0 x 7.0	6.0 - 90.0	540.0	500
61715360	TY 29 M	yes	762.0 x 7.6	6.0 - 229.0	540.0	500

B = box, otherwise plastic bag

TY-RAP® is a registered trademark of Thomas & Betts

TY-RAP® Standard in other colours are available upon request (see description).

Photographs are not to scale and do not represent detailed images of the respective products.

TY- RAP® heat-resistant cable ties



Benefits

- Contains all the advantages of TY-RAP®, with higher heat-resistance

Application range

- This temperature-resistant cable tie can be used in areas exposed to high temperatures such as electrical heating devices or heating installations.

Approvals



- File Number E49405, see table

Design

- Colour: yellow transparent
- Heat-resistant cable ties have the extension "M".

Technical data



Approvals

Flammability class: UL 94 V-2/polyamide 6.6



Info

Halogen-free and silicone-free



Material

Heat-resistant polyamide 6.6



Temperature range

-40°C to +100°C

Suitable tools

- TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers refer to page 962

Article number	Article description	UL approval	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	Pieces / PU
TY-RAP® heat-resistant						
61723470	TYH 23 M	yes	92.0 x 2.4	2.0 - 16.0	80.0	1,000
61723460	TYH 232 M	yes	200.0 x 2.4	2.0 - 50.0	80.0	1,000
61723440	TYH 24 M	yes	140.0 x 3.6	2.0 - 29.0	180.0	1,000
61723430	TYH 242 M	no	208.0 x 3.6	2.0 - 50.0	180.0	1,000
61723410	TYH 26 M	yes	281.0 x 3.6	2.0 - 76.0	180.0	1,000
61723420	TYH 25 M	yes	186.0 x 4.8	3.5 - 45.0	220.0	1,000
61723380	TYH 28 M	yes	360.0 x 4.8	3.5 - 102.0	220.0	1,000
61723390	TYH 272 M	no	223.0 x 7.6	6.0 - 50.0	540.0	500
61723400	TYH 27 M	yes	340.0 x 7.0	6.0 - 90.0	540.0	500
61723350	TYH 29 M	no	762.0 x 7.6	6.0 - 229.0	540.0	500

TY-RAP® is a registered trademark of Thomas & Betts

Photographs are not to scale and do not represent detailed images of the respective products.

TY- RAP® weather-proof, UV-stabilised



Benefits

- Weather-resistant for harsh environmental conditions

Application range

- The TY-RAP® weather-resistant product is used outdoors for installation and maintenance of power plants.

Product features

- Heat and UV-resistant TY- RAP®

Approvals



- File Number E49405, see table



Info

- Good quality cable ties with steel blade

Technical data



Colour delivered

UV-resistant - black



Material

Polyamide 6.6 - halogen-free



Temperature range

-40°C to +85°C

Article number	Article description	UL approval	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	Pieces / PU
TY-RAP® weather-resistant						
61723010	TYB* 23 MX	no	92.0 x 2.4	2.0 - 16.0	80.0	1,000
61723110	TY 232 MX	no	200.0 x 2.4	2.0 - 50.0	80.0	1,000
61723120	TY 234 MX	no	356.0 x 2.4	2.0 - 102.0	80.0	1,000
61723020	TYB* 24 MX	no	140.0 x 3.6	2.0 - 29.0	180.0	1,000
61723130	TY 242 MX	yes	208.0 x 3.6	2.0 - 50.0	180.0	1,000
61723040	TY 26 MX	yes	281.0 x 3.6	2.0 - 76.0	180.0	1,000
61723140	TY 244 MX	no	368.0 x 3.6	2.0 - 103.0	180.0	1,000
61723030	TYB* 25 MX	no	186.0 x 4.8	3.5 - 45.0	220.0	1,000
61723150	TY 253 MX	no	293.0 x 4.8	3.5 - 78.0	220.0	1,000
61723060	TY 28 MX	yes	360.0 x 4.8	3.5 - 102.0	220.0	1,000
61723160	TY 272 MX	no	223.0 x 7.6	6.0 - 50.0	540.0	500
61723050	TY 27 MX	yes	340.0 x 7.0	6.0 - 90.0	540.0	500
61723070	TY 29 MX	no	762.0 x 7.6	6.0 - 229.0	540.0	500

TY-RAP® is a registered trademark of Thomas & Betts

Photographs are not to scale and do not represent detailed images of the respective products.

TY-RAP® for screwing on, cable ties

Benefits

- These TY-RAP® cable ties allow installation and bundling in one step.

Application range

- For assembly with screws, bolts and rivets.
- Simultaneous installation and bundling.
- They are used for cable assemblies, pre- and final installation of parts and bundles, and for maintenance-free installation of cables, ducts and similar applications.

Approvals



- File Number E49405, see table

Technical data

	Caution Flammability class: UL 94 V-2/polyamide 6.6
	Material Polyamide 6.6 - halogen-free
	Temperature range -40 °C to +80 °C

Design

- Cable ties with fasteners

Suitable tools

- TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers refer to page 962



TY 33 M

Article number	Article description	UL approval	Hole Ø (mm)	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	Pieces / PU
TY-RAP® for screwing on							
61715420	TY 33 M	yes	2.8	101.0 x 2.4	2.0 - 16.0	80	1,000
61715480	TY 34 M	yes	4.2	152.0 x 3.6	2.0 - 29.0	180	1,000
61720000	TY 635 M	yes	3.5	198.0 x 4.8	3.5 - 45.0	220	1,000
61715540	TY 35 M	yes	4.8	198.0 x 4.8	3.5 - 45.0	220	1,000
61720070	TY 1435 M	yes	6.3	198.0 x 4.8	3.5 - 45.0	220	1,000
61715600	TY 37 M	yes	6.3	354.0 x 7.6	6.0 - 90.0	540	500

TY-RAP® is a registered trademark of Thomas & Betts
Photographs are not to scale and do not represent detailed images of the respective products.

TY-RAP® with labelling area, cable ties

TY 51 M



TY 53 M / TY 532 M



TY-RAP® with labelling area, cable ties



Benefits

- These cable ties allow binding and marking in one step.
- The cable ties are easy to use as all edges are rounded.
- The patented stainless steel locking hook guarantees a secure hold under harsh conditions.

Application range

- Cables, cable bundles, hydraulic and pneumatic supply lines etc. can be marked and bundled or affixed simultaneously.

Approvals



- File Number E49405, see table

Design

- Cable ties with marking area
- TY 51 M
Area positioned at right angle to the cable tie.
- TY 53 M / TY 532 M
Area positioned above the lock at right angle to the cable tie.

Suitable tools

- TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers refer to page 962

Technical data

	Material Polyamide 6.6 - halogen-free Flammability class: UL 94 V-2/polyamide 6.6
	Temperature range -40 °C to +80 °C

Article number	Article description	UL approval	Length x width (mm)	Bundling Ø (mm)	Labelling surface (mm)	Tensile strength (N)	Pieces / PU
Right-angled surface							
61716020	TY 51 M	yes	92.0 x 2.4	10.0 - 16.0	25 x 8	80	500
Parallel surface							
61715840	TY 46 MD	yes	184.0 x 4.8	9.5 - 45.0	30 x 24	220 Double	500
61715880	TY 46 MT	yes	184.0 x 4.8	9.5 - 45.0	46 x 24	220 Triple	500
61715920	TY 46 MF	yes	184.0 x 4.8	9.5 - 45.0	63 x 24	220 Quadruple	250
61715780	TY 546 M	yes	184.0 x 4.8	9.5 - 45.0	13 x 24	220	100
61715950	TY 548 M	yes	360.0 x 4.8	19.0 - 102.0	13 x 54	220	100
Right-angled area above							
61716080	TY 53 M	yes	102.0 x 2.4	2.0 - 16.0	21 x 9	80	500
61716560	TY 532 M	yes	212.0 x 2.4	2.0 - 51.0	21 x 9	80	1,000

TY-RAP® is a registered trademark of Thomas & Betts
Smaller packing units are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

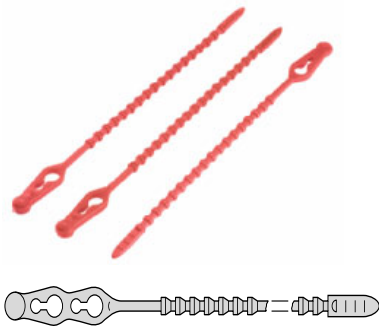
Similar products

- KMK Marking labels refer to page 884

Accessories

- MS Marker pens refer to page 891

Quick ties KBS/ KB



Benefits

- Releasable cable tie

Application range

- With one or two-hole strip
- When something has to be bundled or fixed quickly at short notice.
- The KB two-hole latch quick ties are equipped with a two-hole strip for additional safety (threaded twice), for attaching another bundle, as a screw fastening, or for attaching markings or hanging signs.

Technical data

RAL	Colour delivered Black red
	Material Polyethylene

Approvals



Design

- KBS one-hole latch
- Quick binder for simple application
- KBS two-hole latch
- Colours: black, red

Article number	Article description	UL approval	Length (mm)	Max. bundle Ø (mm)	Pieces / PU
KBS - single-hole					
61710110	KBS 12-red	no	140	20.0	1,000
61721180	KBS 12-black	no	120	20.0	1,000
KB - two-hole					
61710090	KB 12-red	no	120	20.0	1,000
61721160	KB 12-black	no	120	20.0	1,000
61710111	KB 18-red	no	180	35.0	1,000
61710112	KB 18-black	no	180	35.0	1,000
61710130	KB 24-red	no	240	50.0	1,000
61721170	KB 24-black	no	240	50.0	1,000
61710150	KB 27-red	no	320	80.0	1,000
61721190	KB 27-black	no	320	80.0	1,000
61710170	KB 70-red	no	700	190.0	500
61721200	KB 70-black	no	700	190.0	500

Photographs are not to scale and do not represent detailed images of the respective products.

TY-GRIP® FOL/ FO cable tie



TY-GRIP® FOL/ FO cable tie

Benefits

- These ties can be quickly and easily opened, making them suitable for repeated use.
- This feature makes them ideal for applications where they frequently need to be changed or constant access is required.

Application range

- Textile cable tie

Approvals



Design

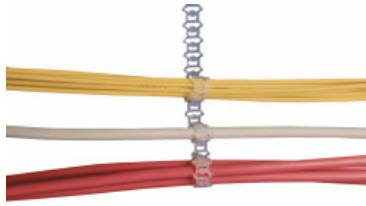
- FOL with strap
Strap made of high-quality polymer provides additional stability and safety.
- FO with loop
The slitted head makes quick and easy fastening possible.
- TY-GRIP + Mille-Tie™ releasable cable tie

Article number	Article description	UL approval	Length x width (mm)	Pieces / PU
FO with loop				
The slitted head makes quick and easy fastening possible.				
61823720	FO 200-40-0	no	228.0 x 12.7	10
61823730	FO 350-40-0	no	330.0 x 12.7	10
FOL with strap				
Strap made of high-quality polymer provides additional stability and safety.				
61823740	FOL 300-50-0	no	300.0 x 20.0	10
61823750	FOL 500-50-0	no	455.0 x 20.0	10

TY-GRIP® is a registered trademark of Thomas & Betts. Mille-Tie™ is a registered trademark of millepede™.

Photographs are not to scale and do not represent detailed images of the respective products.

Mille-Tie™ cable ties



Benefits

- Unique cable tie that adjusts and controls the tension automatically by means of a self-regulating mechanism.
- Damage of any kind to high-quality cables (e.g. CAT 5/6 or glass-fibre cable) is prevented and, in contrast to conventional cable ties, cable performance is not impaired.
- Fast assembly, because the binder can be mounted in any direction
- No sharp edges, avoids injuries
- No cable damage and crushing due to the elasticity of the tie

Application range

- Cable ties for high-quality cables and complex cable management systems
- Due to its remarkable design, the Mille-Tie is suitable for use in complex cable-management systems.
- Intelligent bundle system - can be used as cable suspension or for multiple bundles

Product features

- Reusable as it can be removed

Technical data

	Material TPE
	Temperature range -20 °C to +80 °C

Approvals



Design

- One size for all applications

Article number	Article description	Colour	UL approval	Length (mm)	Pieces / PU
61710200	MT-00	black	no	305	100
61710201	MT-01	red	no	305	100
61710202	MT-02	blue	no	305	100
61710203	MT-03	yellow	no	305	100
61710204	MT-04	green	no	305	100
61710205	MT-05	natural	no	305	100
61710206	MT-06	grey	no	305	100

TY-GRIP® is a registered trademark of Thomas & Betts. Mille-Tie™ is a registered trademark of millepede™. Photographs are not to scale and do not represent detailed images of the respective products.

LS steel cable ties



LS steel cable ties

Benefits

- Flat binder heads mean minimum space is required.
- These stainless steel cable ties are self-locking. Time-consuming folding and crimping are no longer required.
- The steel ball at the end of the tie makes it easy to thread it in.
- If pulled in the opposite direction to re-open or loosen the tie, the ball is locked at the end of the tie and re-opening is impossible.

- LS steel cable ties with width 7.9 mm are suitable for fixing NM FLEXIMARK® stainless steel labelling character carriers.

Approvals



Design

- Steel cable ties

Suitable tools

- STEEL GUN HT-338 cable tie pliers refer to page 963

Technical data

	General Widths: 4.6 and 7.9 mm Lengths: 200 to 1016 mm
	Approvals DIN 2397 UL-listed
	Note Bundling diameter: Up to 305 mm
	Material Stainless steel AISI 316
	Temperature range -80 °C up to +539 °C

Article number	Article description	Length x width (mm)	Bundling Ø (mm)	Minimum tensile strength (N/mm²)	Pieces / PU
61812950	LS 4.6 - 200 B	200.0 x 4.6	51.0	45.3	100
61812960	LS 4.6 - 360 B	360.0 x 4.6	102.0	45.3	100
61812970	LS 4.6 - 520 B	520.0 x 4.6	152.0	45.3	100
61812980	LS 4.6 - 680 B	679.0 x 4.6	203.0	45.3	100
61812990	LS 4.6 - 840 B	838.0 x 4.6	254.0	45.3	100
61813000	LS 7.9 - 200 B	200.0 x 7.9	51.0	113.3	100
61813010	LS 7.9 - 360 B	360.0 x 7.9	102.0	113.3	100
61813020	LS 7.9 - 500 B	500.0 x 7.9	152.0	113.3	100
61813030	LS 7.9 - 680 A	679.0 x 7.9	203.0	113.3	100
61813040	LS 7.9 - 840 B	838.0 x 7.9	254.0	113.3	100
61813050	LS 7.9 - 1010 A	1,016.0 x 7.9	305.0	113.3	100

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- FLEXIMARK® Stainless steel kit refer to page 872
- FLEXIMARK® Stainless steel FCC refer to page 875

TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers



Info

- On request also available with pneumatical motor

TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers

Benefits

- The TY-GUN cable tie tool allows quick and economical binding, fixing and mounting of cable ties.
- Ergonomic design: user-friendly properties, suitable for use in inaccessible areas
- Less force required to secure the cable tie correctly
- Adjustable tension-setting and automatic cutting mechanism
- Large feed-opening makes inserting the cable ties easy

Application range

- For plastic cable ties
- Installation pistol

Product features

- Tip can be rotated 360° for easy assembly
- Anti-recoil mechanism prevents shaking

Design

- Interchangeable head for the other cable tie width is available as a component
- Also available with pneumatical drive

Technical data



Caution
Tension: manually adjustable



General
Cable tie width:
TY-GUN ERG 50 2.4 - 4.8 mm
TY-GUN ERG 120 4.8 - 7.6 mm
Tip can be rotated 360° for easy assembly



Note
Length (mm) x width (mm) x height (mm) 200 x 125 x 25



Colour delivered
Orange
Black



Material
Shock-resistant polymer
Soft rubber grip

Article number	Article description	For cable ties	Cable tie width (mm)	Colour of handle	Weight (kg)	Pieces / PU
Mounting pistol TY-GUN ERG 50						
62120120	Mounting pistol TY-GUN ERG 50	Plastic	2.4 - 4.8	black	0.24	1
62120121	TY-GUN ERG 50B spare blades	Plastic	2.4 - 4.8			1
62120122	TY-GUN ERG 50 interchangeable head	Plastic	2.4 - 4.8			1
TY-GUN ERG 120						
62120125	Mounting pistol TY-GUN ERG 120	Plastic	4.8 - 7.6	black	0.24	1
62120126	TY-GUN ERG 120B spare blades	Plastic	4.8 - 7.6			1
62120127	TY-GUN ERG 120 interchangeable head	Plastic	4.8 - 7.6			1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- TY - FAST® standard cable ties refer to page 955



Benefits

- The tightening force can be adapted gradually.
- The pliers are a low-cost starter product.

Application range

- For plastic cable ties
- For tightening and cutting cable ties.

BASIC cable tie pliers



Article number	Article description	For cable ties	Cable tie width (mm)	LxH, mm	Weight (kg)	PU
62120321	BASIC - cable tie pliers	Plastic	2.2 - 4.8	160 x 130	0.31	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Basic Tie cable tie refer to page 953
- TY - FAST® standard cable ties refer to page 955

Benefits

- The cable tie is automatically cut at its end once the required tension is achieved.
- Sharp edges are avoided.
- Handy processing tool for stainless steel ties.
- The stripping force can be adjusted in increments.

Application range

- For stainless steel cable ties

STEEL GUN HT-338 cable tie pliers



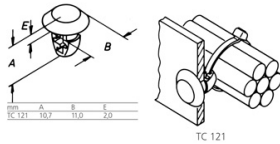
Article number	Article description	For cable ties	Max. cable tie width (mm)	LxH, mm	Weight (kg)	Pieces / PU
83250022	FLEXIMARK Stainless steel tie gun HAT-338	Stainless steel	7.9	178 x 140	0.56	1
83250023	FLEXIMARK Spare part HT - 338	-	-	-	0,018	1

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- LS steel cable ties refer to page 961

TC 121 plug socket



Benefits

- The plug-in socket has two openings for two different cable-tie sizes, while the plug nose and low height allows for flexible use.

Application range

- Fastening elements for cable ties
- The quick and safe mounting method makes these plug-in sockets ideal for applications in control cabinet manufacture, household appliances, motor vehicles and office equipment.

Approvals



Design

- For cable ties: 2.8 / 4.8 mm

Technical data



Material
Polyamide 6.6

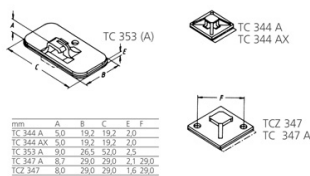
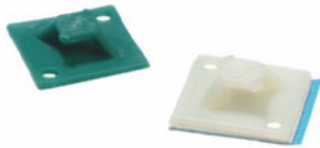


Temperature range
-40 °C to +80 °C

Article number	Article description	For wall thickness up to (mm)	Fastening opening (mm)	Tie width (mm)	Pieces / PU
61724000	TC 121	3.3	6.1	2.4 - 4.8	1,000

Photographs are not to scale and do not represent detailed images of the respective products.

TC tie socket



mm	A	B	C	E	F
TC 344 A	5.0	19.2	19.2	2.0	
TC 344 AX	5.0	19.2	19.2	2.0	
TC 353 A	9.0	25.5	25.0	2.5	
TC 347 A	8.0	29.0	29.0	2.1	29.0
TCZ 347	8.0	29.0	29.0	1.6	29.0

Benefits

- These tie sockets have a low height and are easy to install.
- They can support extreme loads and can be glued permanently.

Application range

- Fastening elements for cable ties
- For fastening cables harnesses or similar parts
- Typical areas of application are wiring in control cabinets, motor vehicles, office machines and similar.

Product features

- The glue and screw tie sockets TC 344 A / TC 344 AX / TC 347 A / TC 353 A have a foam coating to level out any unevenness on the mounting surface.
- Foam-coated adhesive area

Approvals



Design

- For the 344 and 347 types, the cross-mounting facilitates handling even in inaccessible areas.

Included

- Without screws, rivets, etc.

Technical data



Material
Polyamide 6.6



Temperature range
-40 °C to +80 °C

Article number	Article description	Fastening type	Material	Adhesive strength on steel (N/cm)	Tie width (mm)	Weight (g / 100 pieces)	Pieces / PU
61742890	TC 344 A	Gluing/screwing	PA 6.6	76	3.6	76	1,000
61723895	TC 344 AX	Gluing/screwing	PA 6.6 UV stable	72	3.6	76	1,000
61710070	TC 347 A	Gluing/screwing	PA 6.6	76	7.6	240	1,000
61744630	TCZ 347	Screws (4.2 mm)	Tefzel®		7.6	240	500

Photographs are not to scale and do not represent detailed images of the respective products.

TC mounting socket with saddle

Benefits

- Compact construction ensures high stability
- The prism-shaped saddle of this mounting socket enables torsion-safe fastening and bundling of cables.

Application range

- Fastening elements for cable ties
- For fastening with screws or rivets
- Typical areas of application are process control systems, control cabinet manufacturing and mechanical engineering.

Approvals



Included

- Without screws, rivets, etc.

Technical data



Approvals
UL 94 V2



Material
Halogen-free
Polyamide 6.6



Temperature range
-40 °C to +80 °C



mm	A	B	C	D
TC 140	7.0	8.7	14.2	3.6
TC 141	8.2	11.1	17.0	4.0
TC 142	11.0	14.2	23.4	5.2

Article number	Article description	Fastening type	Material	Drill opening (mm)	Tie width (mm)	Weight (g/100 pieces)	Pieces / PU
61724920	TC 140	screwing	PA 6.6	2.8	2.4	47	500
61724510	TC 141	screwing	PA 6.6	3.5	4.8	77	500
61724910	TC 142	screwing	PA 6.6	5.2	7.6	120	500

Photographs are not to scale and do not represent detailed images of the respective products.

Benefits

- This socket is distinguished by the lowest height and easy handling.

Application range

- Fastening elements for cable ties
- Typical areas of application are control cabinet manufacture, motor vehicles, office machines.

Approvals



Included

- Without screws, rivets, etc.

Technical data



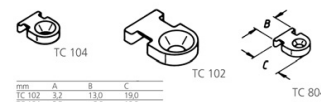
General
Fastening with counter-sunk screws or rivets



Material
Polyamide 6.6
Halogen-free



Temperature range
-40 °C to +80 °C

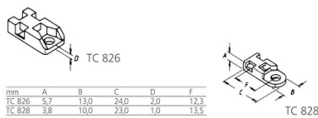


mm	A	B	C
TC 102	3.2	13.0	19.0
TC 104	2.4	8.0	10.0
TC 804	2.4	8.0	10.0

Article number	Article description	Fastening type	Material	Drill opening (mm)	Tie width (mm)	Weight (g/100 pieces)	Pieces / PU
61724400	TC 102	screwing	PA 6.6	4.2	4.8	48	1,000
61724420	TC 104	screwing	PA 6.6	3.2	2.4	11	1,000
61724720	TC 804	screwing	PA 6.6	2.4	2.4	13.5	250

Photographs are not to scale and do not represent detailed images of the respective products.

TC tie screw socket



Benefits

- The light feed of the ties and the cross-holder for double mounting at cable harness cross points allow for easy handling.

Application range

- Fastening elements for cable ties
- For fastening bundles and parts
- Typical areas of application are control cabinet manufacture, motor vehicles, office machines.

Approvals



Included

- Without screws etc.

Technical data

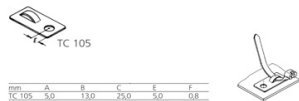
Material
Polyamide 6.6

Temperature range
-40°C to +80°C

Article number	Article description	Fastening type	Material	Drill opening (mm)	Tie width (mm)	Weight (g/100 pieces)	Pieces / PU
61724810	TC 826	screwing	PA 6.6	4.2	4.8	197	1,000
61724820	TC 828	screwing	PA 6.6	4.2	4.8	40	1,000

Photographs are not to scale and do not represent detailed images of the respective products.

TC aluminium screw socket



Benefits

- The screw sockets are heat-resistant and excellent at matching contours.
- The low height, low weight and high stability are particularly advantageous.

Application range

- Fastening elements for cable ties

Included

- Without screws etc.

Technical data

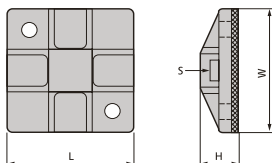
Material
Aluminium

Temperature range
-100°C to +450°C

Article number	Article description	Fastening type	Material	Tie width (mm)	Weight (g/100 pieces)	Pieces / PU
61724430	TC 105	screwing	aluminium	4.8	67	1,000

Photographs are not to scale and do not represent detailed images of the respective products.

MPNY screw / adhesive socket



Benefits

- MPNY socket offers the option for cross-mounting / double-mounting on the crossover points of the cable harness, and also enable easy handling at inaccessible locations.
- Good overall view, as the remaining markers stay on the marking roll

Application range

- Fastening elements for cable ties
- The areas of application include the wiring of switch cabinets, motor vehicles and office machines, etc.

Approvals



Included

- Without screws etc.

Technical data

General
MPNY-750: for cable ties with a load capacity of 80 - 180 N
MPNY-1000: for cable ties with a load capacity of 80 - 225 N

Note
On rolls

Info
Suitable for cable ties with a bundling load of 80 N / 220 N

Colour delivered
Black
natural

Material
Polyamide 6.6
Thickness: 0.25 mm

Temperature range
-40 °C to +80 °C

Article number	Article description	Colour	Length x width (mm)	Height (mm)	Slot height (mm)	Slot width (mm)	Pieces / PU
61718610	MPNY-750-0-C	black	19.0 x 19.0	5.21	1.27	3.18	100
61718620	MPNY-750-9-C	natural	19.0 x 19.0	5.21	1.27	3.18	100
61718630	MPNY-1000-0-C	black	25.0 x 25.0	5.46	1.78	5.16	100
61718640	MPNY-1000-9-C	natural	25.0 x 25.0	5.46	1.78	5.16	100

Photographs are not to scale and do not represent detailed images of the respective products.

For current information see: www.lappgroup.com

New

AS-i clip clamp / AS-i End sealing

Benefits

- AS-i cable clamp:
The conical shape of the receptacle in the socket and the releasable lock ensure that the cable is firmly secured.
- The high-grade acrylate adhesive allows quick mounting and the socket can be immediately stressed. Furthermore, it can also be secured using a screw.
- AS-i end seal:
 - Easy to assemble
 - Can be used on both sides
 - Compact dimensions save space
 - Cost-effective method of sealing AS-Interface cables

Application range

- Fastening elements for cables and conductors
- Clip clamp for AS interface bus cables
- For use with UNITRONIC® AS-Interface bus cables.

Product features

- AS-i clip clamp: releasable lock
- AS-i end seal:
 - Material: TPE
 - Colour: black





Design

- These mounting sockets can be reopened and were specially developed for AS-I cables.

Suitable cables

- UNITRONIC® BUS ASI Page 300

Technical data

	General Halogen-free
	Note Adhesive: acrylic with lining made of PUR foam
	Material Polyamide 6.6, impact-resistant
	Temperature range AS-i clip clamp: -40 °C to +80 °C AS-i end seal: -40 °C to +110 °C



Article number	Article description	Colour	Drill opening (mm)	Length x width (mm)	Adhesive tape thickness (mm)	Height (mm)	Pieces / PU
AS-I clip clamp							
61825000	AS-I clip clamp	white	3,3	25.0 x 20.0	0.8	11.70	500
End seal							
22260047	AB-ASI-PC-BK	black	-	20.0 x 4.7	-	11.00	100

Photographs are not to scale and do not represent detailed images of the respective products.

ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

SILVYN®

FLEXIMARK®

ACCESSORIES

APPENDIX

CC cord clips



Benefits

- Special mounting preparations are no longer necessary.

Application range

- Simple fastening
- Fastening elements for cables and conductors
- CC cord clips are self-adhesive cable clamps. They are excellent for laying several cables in parallel.

Note

- Black colour is available upon request

Technical data



General

Self-adhesive on many surfaces



Approvals

Self-extinguishing in accordance with UL 94 V-2 (without adhesive tape)



Note

Bundling diameter: 5 to 17 mm



Material

Polyamide 6.6
Halogen-free



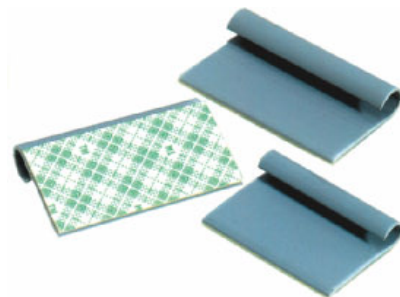
Temperature range

-40 °C to +80 °C

Article number	Article description	Max. bundle Ø (mm)	Socket area x height (mm)	Pieces / PU
61723810	CC 5	5.0	19 / 19 x 8	100
61723820	CC 11	9.0	26 / 26 x 12	100
61723840	CC 21	17.0	26 / 26 x 17	100

Photographs are not to scale and do not represent detailed images of the respective products.

KS cable clamps



Benefits

- After removing the protective film, the clamps can be mounted on any clean and dry surface, but due to the high adhesive force, they will stick permanently.
- Cable clamps with high adhesive strength
- Good foam-padding properties

Application range

- Fastening elements for cables and conductors
- They are suitable for fastening cables quickly.
- Self-adhesive cable clamps are recommended for mounting on plastic, metal, and glass, whenever it is not possible to use nails or screws.

Design

- The KS cable clamps are available in four different sizes.

Technical data



General

Adhesive coating: 3M



Material

PVC

Article number	Article description	Length (mm)	For cable Ø (mm)	Pieces / PU
61717440	KS 20 / 6	33	4 - 6	100
61710730	KS 25 / 8	38	6 - 8	100
61717460	KS 25 / 10	44	7 - 10	100
61717480	KS 30 / 13	50	10 - 13	100

Photographs are not to scale and do not represent detailed images of the respective products.

TC open assembly clip

Benefits

- This open mounting clamp is distinguished by its simple and problem-free handling.

Application range

- Fastening elements for cables and conductors
- Typical areas of application are pre-assembled cables, control panels, control cabinets etc.

Approvals



Design

- Available in five sizes

Included

- Without screws etc.

Technical data



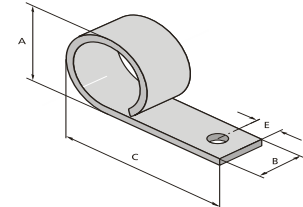
Note
Hole diameter: 5.0 mm



Material
Hard PVC



Temperature range
-40 °C to +80 °C



Article number	Article description	Hole spacing, E (mm)	Length x width (mm)	Height (mm)	Pieces / PU
61724150	TC 70	6.5	23.5 x 10.0	6.50	100
61724160	TC 71	6.5	29.5 x 10.0	13.00	100
61724170	TC 72	6.5	36.5 x 10.0	19.50	100
61724180	TC 73	6.5	45.5 x 13.0	25.00	100
61724190	TC 74	6.5	58.5 x 13.0	38.00	100

Photographs are not to scale and do not represent detailed images of the respective products.

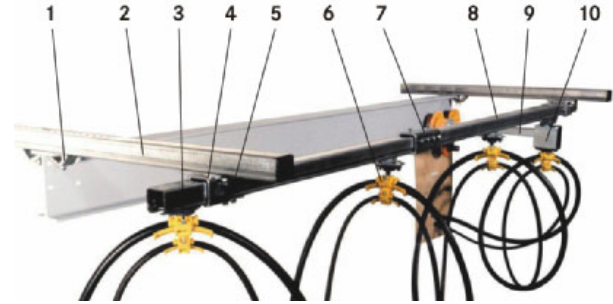
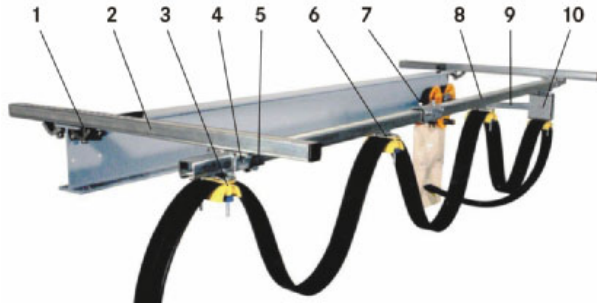
New

Cable trolley system for round and flat cables



Info

- The configuration sheet for cable trailers is available to download from our website (under "Download Center") or can be obtained on request
- 3D drawings available



Benefits

- The guiding rollers have ball bearings and guarantee easy, smooth running in the C-profile rails.
- The cables in the clamping devices are clamped gently, and an appropriately shaped pressing piece prevents sharp bends at the clamping point.

Application range

- Crane and conveying machinery
- For hoisting equipment and conveyor systems
- Mechanical engineering
- Nut suitable for applications for Ex-Areas

Product features

- Certain components (such as the cable trailer) made of galvanised steel
- Dustproof ball bearing (wheels)
- Cable clamp and protection plate made of polyamide

Design

- Complete system consisting of the following components:
 1. Clamps (steel girder)
 2. Extension arm
 3. End clamp
 4. Rail bracket
 5. Stopper
 6. Cable trailer
 7. Track coupler
 8. C-profile rail
 9. Towing arm
 10. Towing trolley

Note

- Round- and flat cables are not allowed to combine a sight below and above

Design

- The delivery length of the C-profile rail is 6 m.
- The rail opening is 11 mm
- The installation of a system depends on various criteria, e.g. maximum cable slack (cable weight) and working length.

Suitable conduits

- Even air-pressure lines can be installed

Suitable cables

- ÖLFLEX® CRANE F Page 169
- ÖLFLEX® LIFT F Page 171
- Flat cables (ÖLFLEX® CRANE and ÖLFLEX® LIFT up to 54 mm)
- All round cables up to 36mm outer diameter

Article number	Article designation	Pieces / PU
Cable trailer system for flat cables		
62200420	Towing trolley, flat	1
62200421	Cable trailer, flat	1
62200422	End clamp, flat	1
Cable trailer system for round cables		
62200434	Cable trailer, round	1
62200435	Towing trolley, round	1
62200436	End clamp, round	1
62200437	Cable clamp, round, 1-16 mm	1
62200438	Cable clamp for cable 17-25 mm	1
62200439	Cable clamp, round, 26-36 mm	1
Components for both systems		
62200423	Rail bracket, vertical	1
62200425	Stopper	1
62200424	Track coupler	1
62200427	Rail bracket with flexible fastening	1
62200428	Rail bracket for ceiling mounting	1
62200429	Rail bracket for wall mounting	1
62200430	Towing arm, 400 mm	1
62200431	Towing arm, 630 mm	1
62200432	Extension arm, 800 mm	1
62200433	Steel girder clamp	1
Fastening options:		
62200426	Rail curve: 90°	1
62200440	C-profile rail, 6 m	1

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SILVYN® CHAIN cable protection and guiding systems

Accessories

- SKINDICHT® SVFK



Cable trolley system for round and flat cables

Planning a cable trolley system:

First find out:

- Travel distance
- Cable package - design (flat, round) and dimension
- Support bracket - wall or roof mounting, I-Beam, with distance
- Environment - indoor, outdoor, dust, moist, acid

1.) Type of system

Provide a brief drawing of the placement of cable clamps. Choose type of system you would like to use (wire, c-profile, I-beam, etc.) with regards to cable weight, size, bending radius and environment.

2.) Cable length

Find out the cables length you have to use in your system. Here fore consider the travel length multiplied by the following factors:

Flat cable:

Travel distance less than 20 m x 1,25 = cable length

Travel distance 20-50 m x 1,20 = cable length

Travel distance greater than 50 m x 1,50 = cable length

Round cable:

Travel distance x 1,50 m = cable length

3.) How many trolleys do I need?

Divide the cable length by the double cable sagging which will give you the number of trolleys including the towing trolley. Note: standard cable sagging is 0,75 m.

4.) Parking space

Cable trolley length x number of trolleys + towing trolleys length = parking space

5.) Number of rails and track couplers

Travel distance + parking space = total track length

6.) Number of support brackets

Consider a max. of two meters space between the support brackets. Choose correct mounting bracket (roof, wall, I-beam, etc.).

7.) Finally add

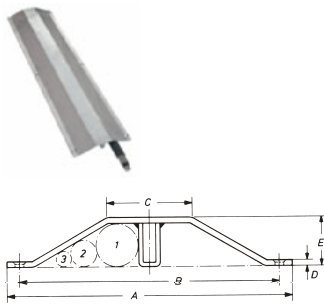
2 pieces of end stopper - additional cable for connection (normally 2-6 meters)

1 piece of end clamp

1 piece of towing arm

8.) Select a suitable cable gland of our SKINTOP® SKINDICHT® product range.

ST steel cable tunnel



Benefits

- A central strength element strengthens and stiffens the design.
- Point loads are thus distributed onto the floor.
- The ST cable tunnel offers additional advantages in the area of building safety as it is flame-retardant and halogen-free.

Application range

- The ST cable tunnel made of galvanized steel protects cables laid on the ground against mechanical influences.
- The cable tunnels can be fixed onto the floor by using countersunk screws.

Technical data

Material
Galvanized steel ring
Fireproof

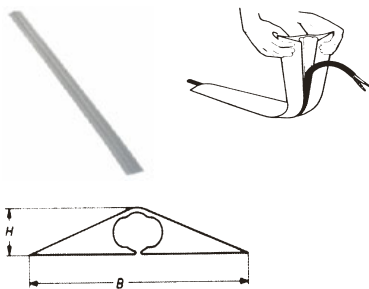
Design

- ST 1: A = 250, B = 230, C = 70, D = 5, E = 45
- Hole diameter: 9.0 mm
- ST 2: A = 200, B = 182, C = 60, D = 4, E = 34,
- Hole diameter: 6.6 mm
- ST 3: A = 150, B = 134, C = 60, D = 4, E = 24, hole diameter = 6.6 mm

Article number	Article description	Length (mm)	Ø combinations (mm)	Weight (kg/piece)	Pieces / PU
61717000	ST 1	1,000	36/25/15 or 40/24	14	1
61717040	ST 2	1,000	25/20 or 30/18	9	1
61717070	ST 3	1,000	17/14 or 20/13	7	1

Photographs are not to scale and do not represent detailed images of the respective products.

STY plastic cable tunnel



Benefits

- High flexibility enables easy installation of cables
- Cutting to size is possible up to 10 m.

Application range

- The STY cable tunnel is a reliable anti-tripping guard used to cover cables that are laid on the ground.

Technical data

Colour delivered
Colour: grey (RAL 7001)

Material
PVC

Design

- STY5: (W)idth = 48 mm, (H)eight = 8 mm
- STY9: (W)idth = 70 mm, (H)eight = 12 mm
- STY12: (W)idth = 85 mm, (H)eight = 15 mm

Article number	Article description	Width x height (mm)	Number of cables x outer Ø	Contents (m)
61746870	STY 5	48 x 8	1 x 5 - 2 x 4	10
61746880	STY 9	70 x 12	1 x 9 - 2 x 7	10
61746890	STY 12	85 x 15	1 x 12 - 2 x 9	10

Photographs are not to scale and do not represent detailed images of the respective products.

RKK 01-06 round cable wedge clamps

Benefits

- The wedged clamps hold the cable without damaging it and without restricting the necessary movement of the cable.
- Other cable combinations are possible

Application range

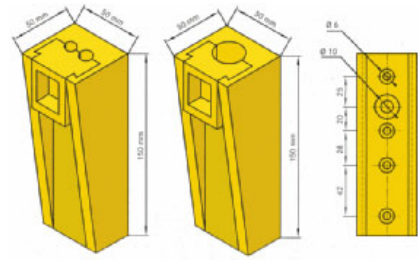
- The wedged clamps can be used to secure round control cables.

Design

- Round cable wedged-clamps

Technical data

- Note**
Clamping force: 380N
- Material**
Polyamide 6.6
- Temperature range**
-20°C to +50°C



Article number	Article designation	Number of cables	For cable outer Ø (mm)	Weight (g)	Pieces / PU
52026020	RKK 01	2	8.0-11.0 and 7.0-10.0	200	1
52026024	RKK 02	1	18.0-21.5	180	1
52026026	RKK 03	1	21.0-24.0	160	1
52026028	RKK 04	1	24.5-26.0	150	1
52026030	RKK 05	1	19.0-24.0	150	1
52026022	RKK 06	1	11.5-14.0	190	1

Photographs are not to scale and do not represent detailed images of the respective products.

FKK 08 Flat cable wedge clamp, small

Benefits

- On the shaft side, the mounting plate can be screwed onto the wall or bolted or welded to the rail bracket.
- The mounting plate can be bolted or welded to the lift cage.

Application range

- Flat cable wedge clamps are suitable for securing flat control cables.

Design

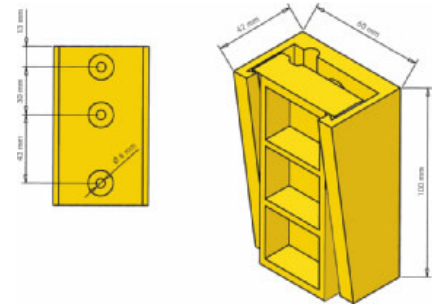
- Maximum cable thickness: 10 mm
- The small wedge-shaped cable clamp can hold up to two flat cables.

Suitable cables

- ÖLFLEX® LIFT F Page 171

Technical data

- Info**
Clamping force: at overall cable thickness 2-10 mm = 600-800 N
Minimum insert depth for wedge: 60 % = 60 mm
- Material**
Polyamide 6.6 - halogen-free
- Temperature range**
Operating temperature: -20°C to +50°C



Article number	Article designation	Number of cables	Max. total cable length (mm)	Weight (g)	Pieces / PU
52026051	FKK 08	1-2	50 x 10	105	1

Other designs are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

FKK 07 cable wedge clamp, large

Application range

- Flat cable wedge clamps are suitable for securing flat control cables.

Design

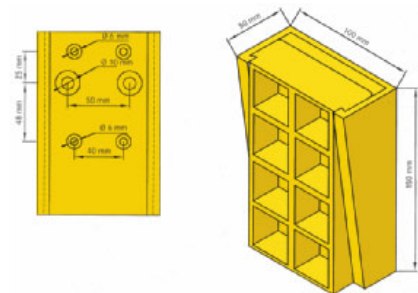
- Maximum cable thickness: 17 mm
- The large wedge-shaped cable clamp can hold up to three flat cables.

Suitable cables

- ÖLFLEX® LIFT F Page 171

Technical data

- Info**
Clamping force: at overall cable thickness 2-9 mm and 16-17 mm = 800 N
Minimum insert depth for wedge: 60 % = 90 mm
- Material**
Polyamide 6.6 - halogen-free
- Temperature range**
Operating temperature: -20°C to +60°C



Article number	Article designation	Number of cables	Max. total cable length (mm)	Weight (g)	Pieces / PU
52026050	FKK 07	1-3	90x17	345	1

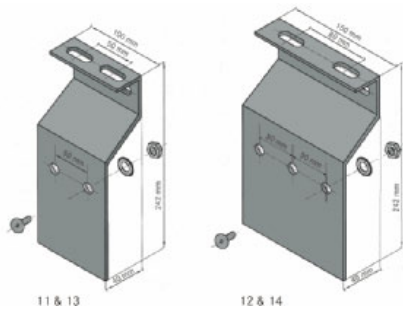
Data on the clamping force is available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

Cable guiding and fixing

Cable wedge clamps

MP 11/13/12/14 installation sheets



Application range

- Installation sheets
- Installation sheet for all-round and large flat cable wedges (primed)

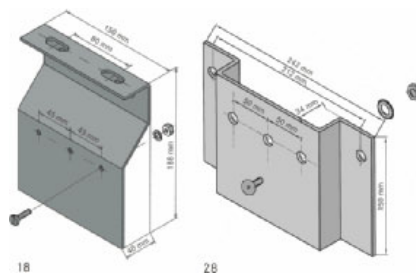
Included

- 2 or 3 hexagonal nuts
- 2 or 3 countersunk screws
- 2 or 3 serrated lock washers
- 1 mounting plate

Article number	Article designation	Number of terminals and types	Pieces / PU
52026031	MP 11	1-2 RKK (01-06)	1
52026032	MP 13	1-2 RKK (01-06) or 1 FKK (07)	1
52026033	MP 12	1-3 RKK (01-06)	1
52026034	MP 14	1-3 RKK (01-06) or 1 FKK (07) and 1 RKK (01-06)	1

RKK = round cable wedge clamp; FKK = flat cable wedge clamp
 Photographs are not to scale and do not represent detailed images of the respective products.

MP 18/28 installation sheets



Application range

- Installation sheets
- Installation sheet for small flat cable wedges (zinc-plated)

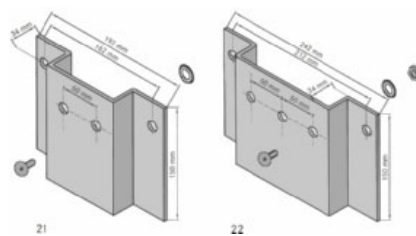
Included

- 2 or 3 hexagonal nuts
- 2 or 3 countersunk screws
- 2 or 3 serrated lock washers
- 1 mounting plate

Article number	Article designation	Number of terminals and types	Pieces / PU
52026060	MP 18	1-2 FKK (08)	1
52026061	MP 28	1-2 FKK (08)	1

FKK = flat cable wedge clamp
 Photographs are not to scale and do not represent detailed images of the respective products.

MP 21/22 installation sheets



Application range

- Installation sheets
- Installation sheet for all-round and large flat cable wedges (zinc-plated)

Included

- 2 or 3 hexagonal nuts
- 2 or 3 serrated lock washers
- 2 or 3 countersunk screws
- 1 mounting plate

Article number	Article designation	Number of terminals and types	Pieces / PU
52026062	MKK 21	1 FKK (07) or 2 RKK (01-06)	1
52026063	MKK 22	1 FKK (07) + 1 RKK (01-06) or 3 RKK (01-06)	1

RKK = round cable wedge clamp; FKK = flat cable wedge clamp
 Photographs are not to scale and do not represent detailed images of the respective products.

EKK single clamp / DKK double clamp



EKK single clamp

DKK double clamp

Benefits

EKK single clamp

- The clamping wedges protect and hold the cable without restricting the mobility of the cable cores. The clamping wedges allow a wide clamping range.

DKK double clamp

- The 100 mm long clamping wedges protect and hold the cable without restricting the mobility necessary for the cable cores.
- The clamping wedges allow a wide clamping range.

Application range

EKK single clamp

- Single clamp
- The wedge-shaped cable clamps EKK and DKK have been developed as simple and reliable mounting clamps for lift control cables.

DKK double clamp

- The wedge-shaped cable clamps EKK and DKK have been developed as simple and reliable mounting clamps for lift control cables.

Design

DKK double clamp

- Installation guidelines for ÖLFLEX® -LIFT RH and RS lift control cables can be found in the appendix T5.
- Maximum load for each clamp: 800 N (80 kg)

Included

- Impact anchor, screws and safety discs are supplied as installation accessories.

Technical data



Temperature range

high mechanical load: +65°C
low mechanical load: +100°C

Article number	Article designation	For cable Ø (mm)	Length x width x height (mm)	Weight (kg/piece)	Pieces / PU
Single clamp					
52026000	EKK 18	15-18	125 x 45 x 120	1,4	1
52026011	EKK 26	19-26	125 x 45 x 120	1,4	1
Double clamp					
52026010	DKK 18	15-18	125 x 85 x 120	1,9	1
52026012	DKK 26	19-26	125 x 85 x 120	1,9	1

Photographs are not to scale and do not represent detailed images of the respective products.

Kraftform® adjustable torque screwdriver/Kraftform Kompakt® Set



Kraftform® adjustable torque screwdriver/Kraftform Kompakt® Set

Benefits

- Fatigue-free due to ergonomic grip design
- Suitable for many EPIC® connector systems and in the network/automation industry (sensor/actuator wiring)
- Simple, free assembly in any position
- Safety close at hand

Application range

- When screwing smaller screws, the user often relies on his specialist sense.
- In practice, this can often lead to significantly higher extracting values.
- The consequences are ripped-off screw heads and over-twisted screw threads.
- The solution is offered by this practical torque screwdriver for 0.3 - 1.2 Nm.

Product features

- Quick and easy change of tools due to quick-change chuck

Design

- Kraftform® torque screwdriver for 0.3 - 1.2 Nm
- Kraftform Kompakt® 10-piece screwdriver set (bits included: 1xR, 1xTZ, 1xTZ PH, 1xTZ PZ, 1xTZ TORX® in several versions incl.1 hand screwdriver without torque system)

Included

- Traceable calibration certificate contained in the scope of delivery

Technical data

- Caution**
Can be used in areas requiring ESD protection ESD version in acc. with EN 100-015 Part 1
- General**
Phillips screwdriver PH (Phillips recess)
- Approvals**
Robust industrial design with excellent accuracy in accordance with ISO 6789/EN 26789
- Info**
Controlled torque of 0.3-1.2 Nm is possible
- Colour delivered**
Black

Article number	Article designation	Measuring range	Length (mm)	Pieces / PU
61813958	Kraftform® torque screwdriver	0.3 - 1.2	180	1
61813990	Kraftform Kompakt® 10			1

Kraftform® is a registered trademark of Wera (Hermann Werner GmbH & Co.KG)
Photographs are not to scale and do not represent detailed images of the respective products.

Silicon sealing compound



Benefits

- Fast-hardening sealing material

Application range

- Protection against humidity, electrostatic discharges, vibrations

Approvals

- Hardness according to DIN 53505: 25 °C Shore A
- Specific contact resistance in accordance with DIN 53482

Technical data

- General**
Dielectric strength in accordance with DIN 53481: 17 kV/mm
Dry measurement at 23°C: 14 ohm-cm
- Temperature range**
-50 °C to +180 °C
(adequate ventilation required)

Article number	Article designation	Content (ml)	Pieces / PU
61713130	SILICON sealing compound	90	1

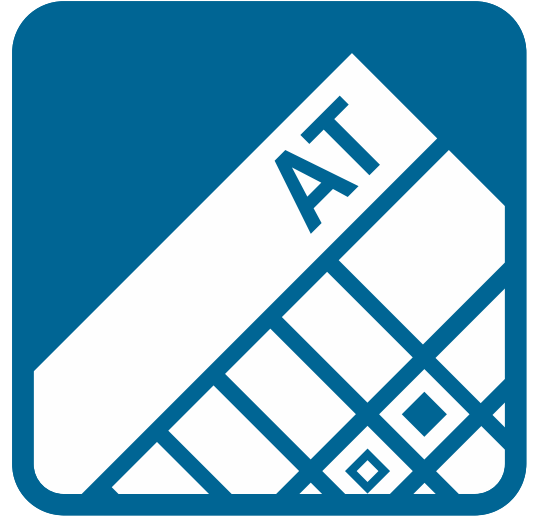
Photographs are not to scale and do not represent detailed images of the respective products.

Appendix

Selection tables
Technical tables
Item number list
Product list

979
1003
1056
1079

Appendix



Appendix

Selection tables

A1:	flexible connecting and control cables	979
A2:	highly flexible FD® cables	982
A3:	conveyor cables	984
A4:	halogen-free cables	986
A5:	data network cables for low-frequency analogue/ digital signal transmission	989
A6:	UNITRONIC® COAXIAL/BUS/LAN cables	990
A7:	UNITRONIC® BUS and ETHERLINE®	992
A8:	cable entries at a glance	996
A9:	DESINA®-compliant cables	997
A10:	technical data for EPIC® rectangular connectors	998
A11:	applications of HITRONIC® fibre-optic cable components	1000
A12:	applications of servo cables in electrical power drive systems (PDS)	1001
A13:	cables for expanded ambient temperature ranges	1002


Technical tables

T0:	safe use of our products	1003
T1:	chemical resistance of cables	1006
T2:	assembly guidelines	1008
T6:	type designations	1012
T7:	core ID code for ÖLFLEX® cables	1014
T7:	core ID code for UNITRONIC® cables	1015
T8:	international colour codes for thermoelectric and compensating cables	1016
T9:	core ID code as per VDE colour code	1017
T9:	core ID code as per DIN colour code	1018
T10:	core ID code as per VDE colour code for telephone cables	1019
T11:	conductor resistances and strand structure (metric)	1020
T12:	current ratings – basic table	1021
T12:	current ratings – reduction tables	1022
T13:	current rating as per National Electrical Code of the USA	1029
T15:	properties of cable insulation and sheathing	1030
T16:	Anglo-American dimensions	1031
T17:	calculating metal surcharges	1033
T18:	trademark approvals	1035
T19:	laying guidelines for cables and wires	1036
T19:	drum holding capacity for plastic-insulated cables in m DIN 46391	1037
T20:	cable drums – transport damage, losses, rental and handling	1038
T21:	thread dimensions for cable glands	1039
T21:	tightening torques and installation dimensions for cable glands	1040
T22:	protection ratings to EN 60529	1041
T24:	chemical resistance of plastics	1042
T25:	registered trademarks	1044
T26:	products with certification for Russia	1045
T27:	fire load calculations for cables	1048
T28:	radiation resistance	1049
T29:	using UL-approved cables	1050
T30:	environmental information	1055

Item number list	1056
-------------------------	------

Product list	1079
---------------------	------

A1: flexible connecting and control cables

Usage criteria	Cable designation (fixed installation and/or occasional flexing)																											
	Page	22	24	25	26	27	29	31	32	33	34	35	36	38	39	40	41	42	43	44	45	46	47	48	49	50	51	
		ÖLFLEX® CLASSIC 100	ÖLFLEX® CLASSIC 100 Yellow	ÖLFLEX® CLASSIC 100 CY	ÖLFLEX® CLASSIC 100 SY	ÖLFLEX® CLASSIC 100 BK POWER 0.6/1 KV	ÖLFLEX® CLASSIC 110	ÖLFLEX® CLASSIC 110 Cold	ÖLFLEX® CLASSIC 110 Orange	ÖLFLEX® CLASSIC 110 CY	ÖLFLEX® CLASSIC 110 SY	ÖLFLEX® CLASSIC 110 black	ÖLFLEX® CLASSIC 110 CY black	ÖLFLEX® CLASSIC 115 CY	ÖLFLEX® EB	ÖLFLEX® EB CY	ÖLFLEX® 140	ÖLFLEX® 140 CY	ÖLFLEX® 150 QUATTRO	ÖLFLEX® 150 CY QUATTRO	ÖLFLEX® 191	ÖLFLEX® 191 CY	ÖLFLEX® CONTROL TM	ÖLFLEX® CONTROL TM CY	ÖLFLEX® Tray II	ÖLFLEX® Tray II CY	ÖLFLEX® SF	
Use																												
For non-deactivatable circuits: EN 60204																												
For intrinsically safe circuits in hazardous areas/VDE 0165																												
Handheld devices and lights on building sites																												
Oil-resistant to UL + CSA specification																												
Enhanced oil resistance to VDE																												
Bio-oil-resistant																												
Chemical-resistant cables																												
UV-resistant cables																												
Servomotors/drive systems																												
Standards																												
In accordance with VDE/HAR/DIN																												
According to standard with VDE certification																												
With VDE registration																												
With HAR certification																												
With UL certification																												
With CSA certification																												
Temperature range																												
+105 °C																												
+90 °C																												
+80 °C																												
+70 °C																												
+60 °C																												
-5 °C																												
-10 °C																												
-15 °C																												
-25 °C																												
-30 °C																												
-40 °C																												
-50 °C																												
-55 °C																												
Installation																												
Outdoor use, unprotected, fixed installation																												
Outdoor use, UV light protection, fixed installation																												
Outdoor use, unprotected, occasional flexing																												
Inside, on plaster, in pipe/conduit, in partitions, fixed installation																												
Inside, occasional flexing																												
Bending radius (occasional flexing)																												
5 x D																												
10 x D																												
12.5 x D																												
15 x D																												
20 x D																												
Nominal voltage																												
300/300 V																												
300/500 V																												
600 V acc. to UL/CSA																												
450/750 V																												
600/1000 V																												
Design																												
Fine wire, VDE class 5, stranded copper conductor																												
Extra-fine wire, VDE class 6, stranded copper conductor																												
Ultra-fine wire, VDE class 6, stranded copper conductor																												
PUR core insulation																												
Rubber core insulation																												
PVC/special PVC core insulation																												
PE/PP core insulation																												
Halogen-free core insulation																												
Number printing																												
Colour code acc. to VDE 0293																												
ÖLFLEX® colour code																												
Screening Cu braid/cover																												
Shared inner sheath under overall screening/braid																												
Steel wire braiding																												
PVC sheath																												
PUR sheath, abrasion-resistant, cut-resistant																												
Halogen-free outer sheath																												
Bio-oil-resistant outer sheath P4/11																												
Rubber compound sheath acc. to standard																												

 Main application/design
 Possible application
 Flexible use
 Fixed and flexible use
 Fixed installation

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

A1 Selection tables

A1: flexible connecting and control cables

Usage criteria	Cable designation (fixed installation and/or occasional flexing)																												
	Page	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66/67	68	70	71	72	73	74	75	76	77	78	79	80	
		ÖLFLEX® CLASSIC 100 H	ÖLFLEX® CLASSIC 110 H	ÖLFLEX® CLASSIC 110 CH	ÖLFLEX® 120 H	ÖLFLEX® 120 CH	ÖLFLEX® CLASSIC 130 H	ÖLFLEX® CLASSIC 135 CH	ÖLFLEX® CLASSIC 130 H BK 0.6/1KV	ÖLFLEX® CLASSIC 135 CH BK 0.6/1KV	ÖLFLEX® PETRO C HFFR	ÖLFLEX® ROBUST 200	ÖLFLEX® ROBUST 210	ÖLFLEX® ROBUST 215C	ÖLFLEX® CLASSIC 400 P	ÖLFLEX® CLASSIC 400 CP/415 CP	ÖLFLEX® 440 P/CP	ÖLFLEX® 491 P	ÖLFLEX® CONTROL M	ÖLFLEX® FORTIS	ÖLFLEX® 450 P	ÖLFLEX® 500 P	ÖLFLEX® 540 P	ÖLFLEX® 540 CP	ÖLFLEX® 550 P	H05RR-F***	H05RN-F***	H07RNF***	
Use		For non-deactivatable circuits: EN 60204 For intrinsically safe circuits in hazardous areas/VDE 0165 Handheld devices and lights on building sites Oil-resistant to UL + CSA specification Enhanced oil resistance to VDE Bio-oil-resistant Chemical-resistant cables UV-resistant cables Servomotors/drive systems																											
Standards		In accordance with VDE/HAR/DIN According to standard with VDE certification With VDE registration With HAR certification With UL certification With CSA certification																											
Temperature range		+105 °C +90 °C +80 °C +70 °C +60 °C -5 °C -10 °C -15 °C -25 °C -30 °C -40 °C -50 °C -55 °C																											
Installation		Outdoor use, unprotected, fixed installation Outdoor use, UV light protection, fixed installation Outdoor use, unprotected, occasional flexing Inside, on plaster, in pipe/conduit, in partitions, fixed installation Inside, occasional flexing																											
Bending radius (occasional flexing)		4 x D 5 x D 6 x D 10 x D 12.5 x D 15 x D 20 x D																											
Nominal voltage		300/300 V 300/500 V 600 V acc. to UL/CSA 450/750 V 600/1000 V																											
Design		Fine wire, VDE class 5, stranded copper conductor Extra-fine wire, VDE class 6, stranded copper conductor Ultra-fine wire, VDE class 6, stranded copper conductor PUR core insulation Rubber core insulation PVC/special PVC core insulation PE/PP core insulation Halogen-free core insulation Number printing Colour code acc. to VDE 0293 ÖLFLEX® colour code Screening Cu braid/cover Shared inner sheath under overall screening/braid Steel wire braiding PVC sheath PUR sheath, abrasion-resistant, cut-resistant Halogen-free outer sheath Bio-oil-resistant outer sheath P4/11 Rubber compound sheath acc. to standard																											
		<div style="display: flex; justify-content: space-between;"> <div> <p> Main application/design</p> <p> Possible application</p> </div> <div> <p> Flexible use</p> <p> Fixed and flexible use</p> <p> Fixed installation</p> </div> <div> <p>**Oil resistance acc. to SEV TB20B/3C</p> <p>***Acc. to HD 516/VDE 0298-300; with other applications, partially different bending radii acc. to HD 516/VDE 0298-300, in some cases up to 8 x D</p> </div> </div>																											

Usage criteria	Cable designation (fixed installation and/or occasional flexing)													
	81	83	86	87	88	89	90	91	93	92	94	154	155	155
Use	<p>For non-deactivatable circuits: EN 60204</p> <p>For intrinsically safe circuits in hazardous areas/VDE 0165</p> <p>Handheld devices and lights on building sites</p> <p>Oil-resistant to UL + CSA specification</p> <p>Enhanced oil resistance to VDE</p> <p>Bio-oil-resistant</p> <p>Chemical-resistant cables</p> <p>UV-resistant cables</p> <p>Servomotors/drive systems</p>													
Standards	<p>In accordance with VDE/HAR/DIN</p> <p>According to standard with VDE certification</p> <p>With VDE registration</p> <p>With HAR certification</p> <p>With UL certification</p> <p>With CSA certification</p>													
Temperature range	<p>+105 °C</p> <p>+90 °C</p> <p>+80 °C</p> <p>+70 °C</p> <p>+60 °C</p> <p>-5 °C</p> <p>-10 °C</p> <p>-15 °C</p> <p>-25 °C</p> <p>-30 °C</p> <p>-40 °C</p> <p>-50 °C</p> <p>-55 °C</p>													
Installation	<p>Outdoor use, unprotected, fixed installation</p> <p>Outdoor use, UV light protection, fixed installation</p> <p>Outdoor use, unprotected, occasional flexing</p> <p>Inside, on plaster, in pipe/conduit, in partitions, fixed installation</p> <p>Inside, occasional flexing</p>													
Bending radius (occasional flexing)	<p>5 x D</p> <p>6 x D</p> <p>10 x D</p> <p>12.5 x D</p> <p>15 x D</p> <p>20 x D</p>													
Nominal voltage	<p>300/300 V</p> <p>300/500 V</p> <p>600 V acc. to UL/CSA</p> <p>450/750 V</p> <p>600/1000 V</p>													
Design	<p>Fine wire, VDE class 5, stranded copper conductor</p> <p>Extra-fine wire, VDE class 6, stranded copper conductor</p> <p>Ultra-fine wire, VDE class 6, stranded copper conductor</p> <p>PUR core insulation</p> <p>Rubber core insulation</p> <p>PVC/special PVC core insulation</p> <p>PE/PP core insulation</p> <p>Halogen-free core insulation</p> <p>Number printing</p> <p>Colour code acc. to VDE 0293</p> <p>ÖLFLEX® colour code</p> <p>Screening Cu braid/cover</p> <p>Shared inner sheath under overall screening/braid</p> <p>Steel wire braiding</p> <p>PVC sheath</p> <p>PUR sheath, abrasion-resistant, cut-resistant</p> <p>Halogen-free outer sheath</p> <p>Bio-oil-resistant outer sheath P4/11</p> <p>Rubber compound sheath acc. to standard</p>													

✓ Main application/design
 ✎ Possible application
 ● Flexible use
 □ Fixed and flexible use
 ▲ Fixed installation

*** Acc. to HD 516/VDE 0298-300; with other applications, partially different bending radii acc. to HD 516/VDE 0298-300, in some cases up to 8 x D

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

A2 Selection tables

A2: highly flexible FD® cables – use in power chains or robot applications

Usage criteria	Cable designation																									
	Page	95	96	97	98	100	100	101	102	103	93	105	106	107	111	112	108	109	110	113	114	115	119	120	118	
Use		ÖLFLEX® SERVO FD 750 P	ÖLFLEX® SERVO FD 755 P	ÖLFLEX® SERVO FD 760 CP	ÖLFLEX® SERVO FD 770 CP	ÖLFLEX® SERVO FD 770 CP DESINA®	ÖLFLEX® SERVO FD 781 CY	ÖLFLEX® SERVO FD 785 P	ÖLFLEX® SERVO FD 795 P	ÖLFLEX® SERVO FD 796 CP	SERVO cable acc. to SIEMENS standard 6FX 8PLUS – green or orange	SERVO cable acc. to Indramat standard INK	SERVO cable acc. to LENZE standard	Special Encoder & Resolver cables	ÖLFLEX® CHAIN 808 P	ÖLFLEX® CHAIN 808 CP	ÖLFLEX® FD CLASSIC 810	ÖLFLEX® FD CLASSIC 810 CY	ÖLFLEX® CHAIN 815 CY	ÖLFLEX® FD CLASSIC 810 P	ÖLFLEX® FD CLASSIC 810 CP	ÖLFLEX® CHAIN 815 CP	ÖLFLEX® FD ROBUST	ÖLFLEX® FD ROBUST C	ÖLFLEX® PETRO FD 865 CP	
Temperature range																										
Minimum bending radius	(for continuous flexing)																									
Installation																										
Nominal voltage																										
Design																										

- ✓ Main application/design
- ✓ Possible application
- Flexible use
- Fixed and flexible use
- ▲ Fixed installation

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

A2: highly flexible FD® cables – use in power chains or robot applications

Usage criteria	Cable designation																												
	116	117	121	122	123	124	125	126	127	128	129	130	131	132	133	273	274	275	276	277	336	325	307	328	402	161	429	163	
Page	116	117	121	122	123	124	125	126	127	128	129	130	131	132	133	273	274	275	276	277	336	325	307	328	402	161	429	163	
Use	<p>For industrial mach. acc. to EN 60204 Part 1/VDE 0113</p> <p>For servo drives powered by frequency converters</p> <p>For servo drives, low capacitance</p> <p>For encoders, feedback systems, sensors</p> <p>For free-arm robots/torsional load</p> <p>For indoor application, flexing</p> <p>For outdoor application, flexing</p> <p>For fieldbus systems</p> <p>For video transmission: RGB signal transmission</p> <p>For North America with UL + CSA approval</p> <p>For use in oily environments, enhanced oil resistance</p> <p>For use in areas with bio-oils</p>																												
Temperature range	<p>+105 °C</p> <p>+90 °C</p> <p>+80 °C</p> <p>+70 °C</p> <p>+60 °C</p> <p>+5 °C</p> <p>-5 °C</p> <p>-10 °C</p> <p>-20 °C</p> <p>-30 °C</p> <p>-40 °C</p> <p>-50 °C</p>																												
Minimum bending radius	(for continuous flexing)																												
5 x D	✓																												
6.5 x D		✓	✓	✓																									
7.5 x D																													
10 x D																													
12.5 x D																													
15 x D																													
20 x D																													
Installation	<p>For chains with low radii</p> <p>For chains with minimal space</p> <p>For lower power/weight ratio in chain</p> <p>For 24-hour operation with high cycle numbers</p> <p>For high acceleration > 10 m/s²</p> <p>For very high acceleration up to 50 m/s²</p> <p>For travel speeds up to 5 m/s, travel lengths up to 10 m</p> <p>For travel speeds up to 10 m/s, travel lengths up to 10 m</p> <p>For travel speeds up to 5 m/s, travel lengths up to 100 m</p>																												
Nominal voltage	<p>350 Vss</p> <p>30/300 V AC</p> <p>300/500 V AC</p> <p>600/1000 V AC</p> <p>600 V acc. to UL/CSA</p>																												
Design	<p>Fine wire, VDE class 5, stranded copper conductor</p> <p>Extra-fine wire, VDE class 6, stranded copper conductor</p> <p>Ultra-fine wire, VDE class 6, stranded copper conductor</p> <p>PVC/special PVC core insulation</p> <p>Elastomer core insulation</p> <p>PE/cellular PE/cellular PE foam skin</p> <p>Polyethylene/polypropylene</p> <p>TPE core insulation</p> <p>Special TPE (P4/11) core insulation</p> <p>Halogen-free compound</p> <p>Number printing</p> <p>VDE colour code</p> <p>DIN 47100 colour code/special colour code</p> <p>Pair screening PiCY/PiMF/STP</p> <p>Overall screening</p> <p>Special PVC sheath</p> <p>PUR sheath, abrasion-resistant, cut-resistant</p> <p>Rubber sheath</p> <p>Special TPE (P4/11) sheath, bio-oil-resistant</p> <p>Halogen-free compound</p>																												
✓ Main application/design																													
☑ Possible application																													
● Flexible use																													
☐ Fixed and flexible use																													
▲ Fixed installation																													

Appendix

A3-1 Selection tables

A3-1: conveyor cables

Usage criteria	Cable designation																			
	Page 164	171	169	170	166	167	168	165	161	162	163									
	ÖLFLEX® CRANE	ÖLFLEX® LIFT F*	ÖLFLEX® CRANE F	ÖLFLEX® CRANE CF	ÖLFLEX® LIFT	ÖLFLEX® LIFT T	ÖLFLEX® LIFT S	ÖLFLEX® CRANE 2S	ÖLFLEX® CRANE NSHTÖU**	ÖLFLEX® CRANE VS (N)SHÖU	ÖLFLEX® CRANE PUR									
Use																				
For cable trailer guide systems	✓	✓	✓	✓																
Fixing via rollers, drum motors																				See separate selection table "Applications" A3-2
Reeling/re-routing under tensile load																				See separate selection table "Applications" A3-2
For free-hanging use in lifting/conveying systems	✓	✓			✓	✓	✓													
For free-hanging use with additional load	✓							✓		✓	✓									
For outdoor use	✓	✓	✓	✓				✓	✓	✓	✓									
For short travel distances, inside	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
For short travel distances, outside	✓	✓	✓	✓				✓	✓	✓	✓									
For use in power chains																				See separate selection table "FD" A3-2
Standards																				
In accordance with VDE/HAR/DIN	✓	✓	✓	✓			✓	✓		✓	✓									
With VDE approval										✓	✓									
With VDE registration							✓	✓												
Flame-retardant acc. to IEC 60332.1-2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
Temperature range																				
+80 °C	□		□	□								□								
+70 °C		□			□	□	□	□												
+60 °C									□	□										
+5 °C																				
0 °C		●																		
-5 °C																				
-10 °C																				
-15 °C		●			●	●	●	●												
-20 °C																				
-25 °C	●		●	□					●	●										
-30 °C																				
-40 °C	▲	▲							▲	▲	□									
Bending radius																				
5 x D									✓											
6.5 x D									✓											
7.5 x D										✓	✓									
10 x D		✓	✓	✓																
12.5 x D	✓																			
20 x D					✓	✓	✓	✓												
Nominal voltage																				
300/500 V	✓	✓	✓	✓	✓	✓	✓	✓												
450/750 V		✓																		
600/1000 V									✓	✓	✓									
Design																				
PVC core insulation		✓			✓	✓	✓	✓												
Rubber core insulation	✓		✓	✓					✓	✓										
Supporting element: hemp/textile rope	✓				✓	✓														
Supporting element: steel rope, internal							✓													
Supporting element: steel rope, external					✓	✓		✓												
Supporting element: Kevlar rope					✓	✓														
Outer sheath with supporting braid									✓	✓	✓									
PVC sheath		✓																		
Rubber sheath	✓		✓	✓					✓	✓										

✓ Main application/design
 ✓ Possible application

● Flexible use
 □ Fixed and flexible use
 ▲ Fixed installation

*Min. conductor temperature -15 °C with flexible application and nominal voltage $U_c/U = 450/750 V_{n0}$, only from nominal conductor cross-section of 1.5 mm²

**Min. bending radius 5 x D only if outer diameter < 21.5 mm

A3-2: conveyor cables – ÖLFLEX® CRANE application areas

Usage criteria		Page	161	162	163	164	170	165	166	167	168	169	171	Cable designation				
Application			ÖLFLEX® CRANE NSHTÖU	ÖLFLEX® CRANE VS (N)SHTÖU	ÖLFLEX® CRANE PUR	ÖLFLEX® CRANE	ÖLFLEX® CRANE CF	ÖLFLEX® CRANE 2S	ÖLFLEX® LIFT	ÖLFLEX® LIFT T	ÖLFLEX® LIFT S	ÖLFLEX® CRANE F	ÖLFLEX® LIFT F					
Cable trailer systems						✓	✓					✓	✓					
Reeling, light stress (monospiral configuration - stacked)			✓	✓	✓													
Reeling, moderate stress (multispiral configuration - single layer)			✓	✓	✓													
Reeling, heavy stress (multispiral configuration - multilayer)			✓	✓	✓													
Vertical reeling			✓	✓														
Reel storage (horizontal)			✓	✓														
Reel storage (vertical)					✓													
Re-routing under tensile load			✓	✓														
Push-button control unit			✓	✓				✓										
Drag chain			✓	✓	✓	✓						✓	✓					
Lift									✓	✓	✓	✓	✓					


✓ Main application
✓ Possible application

A4 Selection tables

A4: halogen-free cables

Usage criteria		Cable designation																																			
		52	53	54	55	56	57	58	59	60	61	68	69	75	76	81	84	96	97	98	100	101	104	116	117	142	144	152	103	118							
		ÖLFLEX® CLASSIC 100 H	ÖLFLEX® CLASSIC 110 H	ÖLFLEX® CLASSIC 110 CH	ÖLFLEX® 120 H	ÖLFLEX® 120 CH	ÖLFLEX® CLASSIC 130 H	ÖLFLEX® CLASSIC 135 CH	ÖLFLEX® CLASSIC 130 H BK 0.6/1 KV	ÖLFLEX® CLASSIC 135 CH BK 0.6/1 KV	ÖLFLEX® PETRO C HFFR	ÖLFLEX® 440 P	ÖLFLEX® 440 CP	ÖLFLEX® 540 P	ÖLFLEX® 540 CP	H07ZZ-F	NSHXAf0 1.8/3 KV*	ÖLFLEX® SERVO FD 755 P	ÖLFLEX® SERVO FD 760 CP	ÖLFLEX® SERVO FD 770 CP	ÖLFLEX® SERVO FD 781 CY	ÖLFLEX® SERVO FD 785 P	SERVO cable acc. to SIEMENS standard 6FX 8plus	ÖLFLEX® FD 855 P	ÖLFLEX® FD 855 CP	ÖLFLEX® TRAFFIC 3GKW / 3GKW flex / 3GKW C-flex	ÖLFLEX® TRAFFIC 4GKW-Axplus / C-flex	ÖLFLEX® SOLAR XLS-R / XLS-RT	ÖLFLEX® SERVO FD 796 CP	ÖLFLEX® PETRO FD 865 CP							
Use																																					
Machines and systems:																																					
External wiring of machinery		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
Internal wiring of control cabinets																	✓																				
Other circuits in buildings:																																					
Lighting circuits		✓																																			
Power circuits		✓																																			
Network cables																																					
Standards																																					
Low smoke density		✓	✓	✓	✓	✓	✓	✓	✓	✓																											
Low toxicity of flue gas		✓	✓	✓	✓	✓	✓	✓	✓	✓																											
Flame-retardant to IEC 60332.1-2		✓	✓	✓	✓	✓	✓	✓	✓	✓																											
Highly flame-retardant to IEC 60332.3		✓	✓	✓	✓	✓	✓	✓	✓	✓																											
In accordance with VDE/HAR/DIN/UL		✓	✓	✓	✓	✓	✓	✓	✓	✓																											
With certification VDE/HAR/DIN/UL/TÜV/GL/DNV		✓	✓	✓	✓	✓	✓	✓	✓	✓																											
Temperature range																																					
+180 °C																																					
+145 °C																																					
+120 °C																																					
+110 °C																																					
+90 °C											☐	●	●	●	●			☐	▲																		
+80 °C		▲	▲	▲														●	▲	▲	▲	●	●		☐												
+70 °C		●	●	●	☐	☐	☐	☐	☐										●	●																	
+50 °C																																					
0 °C																																					
-5 °C																	●																				
-15 °C							●	●		●	●	●	●																								
-25 °C						●	●										●								●												
-30 °C		●	●	●															●	●	●	●	●												●		
-40 °C		▲	▲	▲	▲	▲	▲	▲	▲		●	●	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲										☐	●	▲		
-50 °C											▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲												▲		
-60 °C																																					
Nominal voltage																																					
250 Vss																																					
300/500 V			✓	✓	✓	✓	✓						✓	✓	✓	✓																				✓	
450/750 V																																					
600/1000 V		✓																																			
1.8/3 KV																		✓																			
Design																																					
Solid wire VDE 0295 class 1																																					
Multi-wire VDE 0295 class 2																																					
Fine wire VDE 0295 class 5		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓																				
Extra-fine wire VDE 0295 class 6																																					
Number printing VDE 0293			✓	✓	✓	✓	✓	✓	✓	✓																											
Colour code to VDE 0293-308; HD 308-S2		✓																																			
Colour code to DIN 47100																																					
Special core ident. code																																					
Single colours											✓																										
Halogen-free accessories:																																					
Cable protection hoses		SILVYN® RILL PA6	SILVYN® EMC AS-CU																																		
Cable entries		SKINTOP® ST-HF-M	SKINTOP® GMP-HF-M	SKINTOP® BLK-GL-M	SKINTOP® GMP-GL-M																																
Marking		FLEXIMARK® single core marking		Flexipart, marking sleeves, Flexiprint																																	
Accessories		Embossed metal plates, insulated conductor end sleeves		Insulated cable lugs, TBTA insulating tape																																	
		Shrink hoses CMP/PKG/HSB/PLG		TEC end caps																																	
		TEB branch joints		KW plastic coil																																	
		Cable ties Basic Tie/TY-RAP®/TY-FAST®																																			

✓ Main application/design
☐ Possible application
● Flexible use
☐ Fixed and flexible use
▲ Fixed installation
 Other halogen-free cables on request.
 *Use of NSHXAf0 – all standard nominal voltage classes: no lagged cables, just "outer sheath" acc. to design standard VDE 0250-606.

Usage criteria		Cable designation																																		
Page		151	149	147	150	163	173	174	175	176	177	178	179	180	181	173	188	155	155	208	210	216	233	302	270	271	337	335	336	325						
Use		<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; width: 150px; height: 150px; text-align: center;">  </div> <div style="font-size: small;"> <p>ÖLFLEX® Trafo XL V1,8/3KV</p> <p>ÖLFLEX® SOLAR XLR 4703</p> <p>ÖLFLEX® SOLAR XLR/XLR TF</p> <p>ÖLFLEX® SOLAR XLSv</p> <p>ÖLFLEX® CRANE PUR</p> <p>ÖLFLEX® HEAT 145 MC</p> <p>ÖLFLEX® HEAT 145 C MC</p> <p>ÖLFLEX® HEAT 180 SHF</p> <p>ÖLFLEX® HEAT 180 HO5SS-F EMKF</p> <p>ÖLFLEX® HEAT 180 MS</p> <p>ÖLFLEX® HEAT 180 C MS</p> <p>ÖLFLEX® HEAT 180 EWKF</p> <p>ÖLFLEX® HEAT 180 EWKF C</p> <p>ÖLFLEX® HEAT 180 GLS</p> <p>ÖLFLEX® HEAT 145 MC</p> <p>ÖLFLEX® HEAT 180 single core</p> <p>ÖLFLEX® TORSION FRNC</p> <p>ÖLFLEX® TORSION D FRNC</p> <p>H05Z-K, H07Z-K 90 °C*</p> <p>X05Z-K, X07Z-K 110 °C*</p> <p>(N)HXMH</p> <p>ÖLFLEX® SPIRAL 540 P</p> <p>UNITRONIC® BUS PB H FC</p> <p>UNITRONIC® LiHCH</p> <p>UNITRONIC® LiHCH (TP)</p> <p>UNITRONIC® BUS EIB</p> <p>UNITRONIC® BUS P COMBI IBS</p> <p>UNITRONIC® BUS IBS FD P</p> <p>UNITRONIC® BUS LD FD P</p> </div> </div>																																		
Machines and systems:		<p>External wiring of machinery</p> <p>Internal wiring of control cabinets</p>																																		
Other circuits in buildings:		<p>Lighting circuits</p> <p>Power circuits</p> <p>Network cables</p>																																		
Standards		<p>Low smoke density</p> <p>Low toxicity of flue gas</p> <p>Flame-retardant to IEC 60332.1-2</p> <p>Highly flame-retardant to IEC 60332.3</p> <p>In accordance with VDE/HAR/DIN/UL</p> <p>With certification VDE/HAR/DIN/UL/TÜV/GL/DNV</p>																																		
Temperature range		<p>+180 °C</p> <p>+145 °C</p> <p>+120 °C</p> <p>+110 °C</p> <p>+90 °C</p> <p>+80 °C</p> <p>+70 °C</p> <p>+50 °C</p> <p>0 °C</p> <p>-5 °C</p> <p>-15 °C</p> <p>-25 °C</p> <p>-30 °C</p> <p>-40 °C</p> <p>-50 °C</p> <p>-60 °C</p>																																		
Nominal voltage		<p>250 Vss</p> <p>300/500 V</p> <p>450/750 V</p> <p>600/1000 V</p> <p>1.8/3 KV</p>																																		
Design		<p>Solid wire VDE 0295 class 1</p> <p>Multi-wire VDE 0295 class 2</p> <p>Fine wire VDE 0295 class 5</p> <p>Extra-fine wire VDE 0295 class 6</p> <p>Number printing VDE 0293</p> <p>Colour code to VDE 0293-308; HD 308-S2</p> <p>Colour code to DIN 47100</p> <p>Special core ident. code</p> <p>Single colours</p>																																		
Halogen-free accessories:		Cable protection hoses							Cable entries							Marking							Accessories													
<p>SILVYN® RILL PA6</p> <p>SILVYN® RILL PA12</p> <p>SILVYN® FPAS</p> <p>SILVYN® HCC</p> <p>SILVYN® LCCH-2</p> <p>SILVYN® AS</p> <p>SILVYN® EDU-AS</p>		<p>SILVYN® EMC AS-CU</p> <p>SILVYN® SSUE</p> <p>SILVYN® UI 511</p> <p>SILVYN® HFX</p> <p>SILVYN® CHAIN</p> <p>SILVYN® CHAIN STEEL</p> <p>SILVYN® HIPROJACKET</p>							<p>SKINTOP® ST-HF-M</p> <p>SKINTOP® GMP-HF-M</p> <p>SKINTOP® BLK-GL-M</p> <p>SKINTOP® GMP-GL-M</p> <p>SKINDICHT® KW-M</p> <p>SKINDICHT® KU-M</p> <p>SKINDICHT® EKU-M</p>							<p>FLEXIMARK® single core marking</p> <p>Flexipart, marking sleeves, Flexiprint</p> <p>FLEXIMARK® cable labelling</p> <p>MINI system, shrink hose labelling</p> <p>FLEXIMARK® component labelling</p> <p>BMK switchgear labelling, LB labels</p> <p>DYMO® label strips</p>							<p>Embossed metal plates, insulated conductor end sleeves</p> <p>Insulated cable lugs, TBTA insulating tape</p> <p>Shrink hoses CMP/PKG/HSB/PLG</p> <p>TEC end caps</p> <p>TEB branch joints</p> <p>KW plastic coil</p> <p>Cable ties Basic Tie/TY-RAP®/TY-FAST®</p>													

✓ Main application/design
 ✓ Possible application

● Flexible use
 □ Fixed and flexible use
 ▲ Fixed installation

Other halogen-free cables on request.

*Nominal voltage U₀/U: for 05Z-K = 300/500 V_{ac}
 for 07Z-K = 450/750 V_{ac}

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

A4 Selection tables

A4: halogen-free cables

Usage criteria	Cable designation														
	301	404	406	409	410	275	276	277	269	410	411	412	413	414	414
	UNITRONIC® BUS ASI FD PFRNC	ETHERLINE® H Cat.5e	ETHERLINE® Cat.5 FRNC HYBRID	ETHERLINE® FD P Cat.6	LAN CAT.5e + 6 halogen-free	UNITRONIC® FD P plus	UNITRONIC® FD CP plus	UNITRONIC® FD CP (TP) plus	UNITRONIC® LHH, L1HCH, L1HCH (TP)	UNITRONIC® LAN 200 Cat.5e	UNITRONIC® LAN 250 Cat.6	UNITRONIC® LAN 500 Cat.6 _A	UNITRONIC® LAN 1000 Cat.7	UNITRONIC® LAN 1200 Cat.7 _A	UNITRONIC® LAN 1500 Cat.7 _A LZSH

Use															
Machines and systems:															
External wiring of machinery	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Internal wiring of control cabinets															
Other circuits in buildings:															
Lighting circuits					✓										
Power circuits															
Network cables			✓	✓	✓					✓	✓				

Standards															
Low smoke density		✓	✓		✓				✓	✓	✓	✓	✓	✓	✓
Low toxicity of flue gas		✓	✓		✓				✓	✓	✓	✓	✓	✓	✓
Flame-retardant to IEC 60332.1-2	✓	✓	✓		✓	✓	✓	✓							
Highly flame-retardant to IEC 60332.3															
In accordance with VDE/HAR/DIN/UL	✓	✓	✓	✓	✓	✓	✓	✓	✓						
With certification VDE/HAR/DIN/UL/TÜV/GL/DNV						✓	✓	✓							

Temperature range															
+180 °C															
+145 °C															
+120 °C															
+110 °C															
+90 °C															
+80 °C	▲	▲		●		●	●	●	▲						
+70 °C	●		□		▲										
+60 °C		●								▲	▲	▲	▲	▲	▲
+50 °C															
0 °C															
-5 °C		●													
-15 °C															
-20 °C										▲	▲	▲	▲	▲	▲
-25 °C				□											
-30 °C	●	▲		●	▲				▲						
-40 °C	▲		▲		●	●	●								
-50 °C															
-60 °C															

Nominal voltage															
250 Vss	✓					✓	✓	✓	✓						
300/500 V															
450/750 V															
600/1000 V															
1.8/3 KV															

Design															
Solid wire VDE 0295 class 1		✓			✓					✓	✓	✓	✓	✓	✓
Multi-wire VDE 0295 class 2															
Fine wire VDE 0295 class 5			✓						✓						
Extra-fine wire VDE 0295 class 6	✓					✓	✓	✓							
Number printing VDE 0293															
Colour code to VDE 0293-308; HD 308-S2															
Colour code to DIN 47100						✓	✓	✓	✓						
Special core ident. code	✓	✓	✓	✓	✓					✓	✓	✓	✓		
Single colours															


Halogen-free accessories:	Cable protection hoses	Cable entries	Marking	Accessories
SILVYN® RILL PA6	SILVYN® EMC AS-CU	SKINTOP® ST-HF-M	FLEXIMARK® single core marking	Embossed metal plates, insulated conductor end sleeves
SILVYN® RILL PA12	SILVYN® SSUE	SKINTOP® GMP-HF-M	Flexipart, marking sleeves, Flexiprint	Insulated cable lugs, TBTA insulating tape
SILVYN® FPAS	SILVYN® UI 511	SKINTOP® BLK-GL-M	FLEXIMARK® cable labelling	Shrink hoses CMP/PKG/HSB/PLG
SILVYN® HCC	SILVYN® HFX	SKINTOP® GMP-GL-M	MINI system, shrink hose labelling	TEC end caps
SILVYN® LCCH-2	SILVYN® CHAIN	SKINDICHT® KW-M	FLEXIMARK® component labelling	TEB branch joints
SILVYN® AS	SILVYN® CHAIN STEEL	SKINDICHT® KU-M	BMK switchgear labelling, LB labels	KW plastic coil
SILVYN® EDU-AS	SILVYN® HIPROJACKET	SKINDICHT® EKU-M	DYMO® label strips	Cable ties Basic Tie/TY-RAP®/TY-FAST®

- ✓ Main application/design
- ✓ Possible application
- Flexible use
- Fixed and flexible use
- ▲ Fixed installation

Other halogen-free cables on request.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

A5: data network cables for low-frequency analogue/digital signal transmission

Usage criteria	Cable designation																													
	Page	256	256	258	261	264	265	267	268	269	270	271	273	274	275	276	277	281	282	283	284	285	286	288	292	293	294	295	296	299
		UNITRONIC® 100	UNITRONIC® 100 CY	UNITRONIC® LIYY	UNITRONIC® LIYCY	UNITRONIC® LIYY (TP)	UNITRONIC® LIYCY (TP)	UNITRONIC® PUR CP	UNITRONIC® PUR CP (TP)	UNITRONIC® LHH	UNITRONIC® LHCH	UNITRONIC® LHCH (TP)	UNITRONIC® FD	UNITRONIC® FD CY	UNITRONIC® FD P plus	UNITRONIC® FD CP plus	UNITRONIC® FD CP (TP) plus	UNITRONIC® LIYCY-CY	UNITRONIC® LIYCY (TP)	UNITRONIC® CY PIDY (TP)	UNITRONIC® LYD 11Y	UNITRONIC® ST	UNITRONIC® LI2YCY(TP)-LI2YCYv (TP)	UNITRONIC® LI2YCY PIMF	JE-Y(ST)Y...BD	JE-LIYCY...BD	Indoor telephone cable J-Y(ST)Y	Fire alarm cable J-Y(ST)Y red	J-2Y(ST)Y...ST III BD	Outdoor telephone cable
Use																														
Access control/time recording system (ZK/ZE)																														
Production data acquisition systems (BDE)																														
Clock systems																														
Intrusion detection systems (EMA)																														
Fire alarm systems (BMA)																														
Telephone private branch exchanges																														
Intercom systems																														
Electro-acoustic systems (ELA/PA)																														
Recording studio cables/microphone cables																														
Printers/plotters																														
DC stepper motors																														
Encoders (position or angle)																														
Industrial sensors, U < 50 Veff																														
Industrial actuators, U < 50 Veff																														
Measurement and control purposes, analogue (MSR)																														
MSR, digital																														
In electronic devices																														
For cutting/clamping technology (0.34 mm²/AWG 22)																														
Temperature range																														
+80 °C																														
+70 °C																														
+50 °C																														
-5 °C																														
-20 °C																														
-30 °C																														
-40 °C																														
Installation																														
For fixed installation outdoors																														
For direct routing underground																														
For fixed installation indoors																														
For flexing applications (indoors), occasional																														
For permanent flexing (indoors/outdoors)																														
Design																														
Halogen-free																														
Flame-retardant, self-extinguishing																														
For el. symmetrical signal transmission (TP), twisted pair																														
For high pair decoupling, pair screening																														
For el. screening effect, overall screening																														
For low-attenuation transmission, low-capacitance																														
With individually screened cores																														
With combined cores, pairs/single cores																														
With colour code DIN 47100																														
With UNITRONIC® colour code																														
With industrial electronics colour code as per VDE 0815																														
With star quad colour code "BD" as per VDE 0815/0816																														
With pair colour code "LG" as per VDE 0815																														
With special colour code																														
With numbered cores																														
With PVC/special PVC outer sheath																														
With PUR sheath, abrasion-resistant, cut-resistant																														
With PE outer sheath (not flame-retardant)																														
Halogen-free accessories:	Cable protection hoses	Cable entries	Marking	Accessories																										
SILVYN® RILL PA6	SILVYN® EMC AS-CU	SKINTOP® ST-HF-M	FLEXIMARK® single core marking	Metal embossing plates, insulated conductor end sleeves																										
SILVYN® RILL PA12	SILVYN® SSUE	SKINTOP® GMP-HF-M	Flexipart, marking sleeves, Flexiprint	Insulated cable lugs, TBTA insulating tape																										
SILVYN® FPAS	SILVYN® UI 511	SKINTOP® BLK-GL-M	FLEXIMARK® cable labelling	CMP/PKG/HSB/PLG shrink hoses																										
SILVYN® HCC	SILVYN® HFX	SKINTOP® GMP-GL-M	MINI system, shrink hose labelling	TEC sealing caps																										
SILVYN® LCCH-2	SILVYN® CHAIN	SKINDICHT® KW-M	FLEXIMARK® component marking	TEB branch joints																										
SILVYN® AS	SILVYN® CHAIN STEEL	SKINDICHT® KU-M	BMK switchgear labelling, LB labels	KW plastic coil																										
SILVYN® EDU-AS	SILVYN® HIPROJACKET	SKINDICHT® EKU-M	DYMO® label strips	Cable ties Basic Tie/TY-RAP®/TY-FAST®																										

✓ Main application/design
 ✓ Possible application
 ● Flexible use
 □ Fixed and flexible use
 ▲ Fixed installation

A6: UNITRONIC® COAXIAL/BUS/LAN cables – COAXIAL/BUS/LAN cable interfaces

Usage criteria	Cable designation																											
	302	309	311	311	310	301	337	410	410	410	411	411	410	414	412	413	414	286	288	404	404	405	405	406	406	329	329	
	UNITRONIC® BUS PB PB	UNITRONIC® BUS PB FD P FRNC	UNITRONIC® BUS PB TORSION	UNITRONIC® BUS PB FESTOON	UNITRONIC® BUS PB FD Y HYBRID	UNITRONIC® BUS ASI FD P	UNITRONIC® BUS EIB	UNITRONIC® LAN 200 Le/UTP	UNITRONIC® LAN 200 F/UTP	UNITRONIC® LAN 200 SF/UTP	UNITRONIC® LAN 250 U/UTP	UNITRONIC® LAN 250 F/UTP	UNITRONIC® LAN Flex, Cat.5e, Cat.7	UNITRONIC® LAN 1500 Cat.7A	UNITRONIC® LAN 500 U/FTP, F/FTP, S/FTP	UNITRONIC® LAN 1000 S/FTP	UNITRONIC® LAN 1200 Cat.7A	UNITRONIC® Li2YCY(TP)-Li2YCYW(TP)	UNITRONIC® Li2YCY PIMF	ETHERLINE® Cat.5e, fixed	ETHERLINE® Cat.5e, flex.	ETHERLINE® Cat.5e FD	ETHERLINE® Cat.5e FD BK	ETHERLINE® Cat.5 ARM	ETHERLINE® Cat.5 FRNC HYBRID	UNITRONIC® BUS CAN	UNITRONIC® BUS CAN FD P	
Use																												
Suitable for network type as per:																												
IEEE 802.3 (Ethernet)																												
IEEE 802.4 (MAP)																												
IEEE 802.5 (IBM)																												
ISDN 64 K Bit									✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
IBM 3270, 3600, 4300																												
IBM AS 400, 36, 38																												
IBM PC Network																												
10 base 5 Ethernet																												
10 base 2 Cheapernet																												
10 base T 100 ohms								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
100 base T 100 ohms								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Token Ring (STP) 150 ohms																												
Token Bus																												
Radio/TV																	✓											
Video BAS/FBAS																												
Video RGB monitors																												
EIA RS 232/V.24								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
EIA RS 422/V.11								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
EIA RS 485								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
EIA RS 232/20 mA (TTY)								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Standards																												
PROFIBUS	✓	✓	✓	✓																								
INTERBUS (Phoenix Contact)																												
BITBUS (Intel)																												
For LAN installations (IBM, Ethernet etc.)								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
With IBM reference approval																												
As per DEC specification																												
Temperature range																												
+205 °C																												
+90 °C																												
+80 °C																												
+70 °C																												
+60 °C																												
-5 °C																												
-20 °C																												
-30 °C																												
-40 °C																												
-50 °C																												
-190 °C																												
Installation																												
Installation outdoors in open air						✓																						
Indirect routing underground																												
Indoor use	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Direct routing underground																												
Characteristic impedance																												
≥ 150 ohms	✓	✓	✓	✓	✓																							
≥ 120 ohms																												
≥ 100 ohms									✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
≥ 93 ohms																												
≥ 75 ohms																												
≥ 60 ohms																												
≥ 50 ohms																												
Output category																												
CAT.5 ≤ 100 MHz																												
CAT.5e																												
CAT.6 ≤ 250 MHz																												
CAT.7 ≤ 600 MHz																												
1.2 GHz																												
Design																												
PVC sheath				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Halogen-free sheath																												
PE sheath	✓																											
PUR sheath, abrasion-resistant, cut-resistant		✓	✓			✓																						
Fluoropolymer outer sheath																												

✓ Main application/design
 ✓ Possible application
 ● Flexible use
 □ Fixed and flexible use
 ▲ Fixed installation

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

Appendix
A7 Selection tables

A7: UNITRONIC® BUS and ETHERLINE® – which UNITRONIC® BUS cable suits which fieldbus system?

Usage criteria	Cable designation																													
	335	335	336	336	335	324	302	302	306	326	307	311	311	310	305	302	302	308	326	308	306	329	329	329	329	329	329			
Standards																														
UL/CSA-approved	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Installation																														
Fixed installation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Flexible																														
Highly flexible (drag chains etc.)			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Suitable for outdoor use/direct burial, UV-resistant						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Characteristic impedance																														
100–120 ohms	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Dimensions																														
In mm², or diameter in mm, or AWG size																														
3 x 2 x 0.22	✓																													
3 x 2 x 0.25			✓																											
3 x 2 x 0.25 + 3 x 1.0		✓		✓																										
3 x 2 x 0.22 + 3 x 1.0					✓																									
1 x 2 x 0.22/2 x 2 x 0.22/3 x 2 x 0.22						✓																								
1 x 2 x 0.64							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
1 x 2 x 1.0										✓																				
1 x 2 x 0.8											✓																			
1 x 2 x 0.64 + 4 x 1.5																														
1 x 2 x 0.25/2 x 2 x 0.25																														
1 x 2 x 0.34/2 x 2 x 0.34																														
1 x 2 x 0.5/2 x 2 x 0.5																														
1 x 2 x 0.75/2 x 2 x 0.75																														
Bus systems																														
INTERBUS® DIN 19258 EN 50251 sensor/actuator bus	✓																													
INTERBUS® (Phoenix Contact)	✓	✓	✓	✓	✓																									
SUCOnet p® (Klößner-Möller), Modulink® P (Weidmüller) MODBUS VariNet®-P (Pepperl + Fuchs)						✓																								
PROFIBUS-DP, FMS, FIP							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
PROFIBUS-PA, Foundation™ Fieldbus										✓												✓								
CAN ISO 11898																									✓	✓	✓	✓	✓	✓
AS-INTERFACE																														
EIB																														
CC-Link®																														
Device Net™ (Allen-Bradley/Rockwell Automation)																														
Industrial Ethernet/Fast Ethernet																														

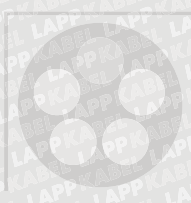
Legend		Trademarks	
7-W	= 7-wire braided conductor	LD	= Long distance
AS-I	= AS-INTERFACE	P	= Polyurethane outer sheath
COMBI IBS	= Installation bus cable for INTERBUS	PB	= PROFIBUS
DN	= Device Net	PE	= Polyethylene outer sheath
EIB	= European Installation Bus	PROFIBUS-DP	= Decentralised Periphery
FD	= Cable suitable for drag chains	PROFIBUS-FMS	= Fieldbus Message Specification
FRNC	= Flame Retardant Non Corrosive	PROFIBUS-PA	= Process Automation
G	= Rubber outer sheath (EPDM)	TPE	= Thermoplastic elastomer
H	= Halogen-free material	Yv	= Cable for routing outdoors/underground with reinforced PVC outer sheath
IBS	= Remote bus cable for INTERBUS	YY	= Twin PVC outer sheath
L2	= Abbr. for SINEC L2-DP		
		CC-Link®	= is a registered trademark of CLPA, Japan
		DeviceNet™	= is a registered trademark of Open Device Vendors Association (ODVA)
		Foundation™	= is a registered trademark of Foundation Fieldbus
		INTERBUS®	= is a registered trademark of Phoenix Contact GmbH & Co.
		Modulink® P	= is a registered trademark of Weidmüller GmbH & Co.
		SIMATIC®	= is a registered trademark of SIEMENS AG
		SINEC®	= is a registered trademark of SIEMENS AG
		SUCOnet P®	= is a registered trademark of Klößner + Moeller GmbH
		VariNet®-P	= is a registered trademark of Pepperl + Fuchs GmbH


A7: UNITRONIC® BUS and ETHERLINE® – which UNITRONIC® BUS cable suits which fieldbus system?

Usage criteria		Cable designation																																	
		Page	329	300	301	301	301	300	327	327	327	328	328	328	328	337	337	404	404	404	407	405	407	332	332	333	333	407	406	406	409	409			
			UNITRONIC® BUS CAN FD P	UNITRONIC® BUS ASI (G)	UNITRONIC® BUS ASI LD FD P	UNITRONIC® BUS ASI FD (TPE) A	UNITRONIC® BUS ASI FD P FRNC	UNITRONIC® BUS ASI (PVC) A	UNITRONIC® BUS DN THICK FRNC	UNITRONIC® BUS DN THIN FRNC	UNITRONIC® BUS DN THICK Y	UNITRONIC® BUS DN THIN Y	UNITRONIC® BUS DN THICK FD P	UNITRONIC® BUS DN THIN FD P	UNITRONIC® BUS DN THICK FD Y	UNITRONIC® BUS DN THIN FD Y	UNITRONIC® BUS EIB, BUS EIB H	UNITRONIC® BUS EIB COMBI	ETHERLINE®-H, P	ETHERLINE®-H-H	ETHERLINE®-H FLEX, P-FLEX	ETHERLINE®-PN Cat.5	ETHERLINE®-FD Cat.5	ETHERLINE®-PN Cat.5 FD	UNITRONIC® BUS FF 3, FF ARM	UNITRONIC® BUS FF 2	UNITRONIC® BUS CC	UNITRONIC® BUS CC FD P FRNC	ETHERLINE®-PN FLEX Cat.5	ETHERLINE® Cat.5 ARM	ETHERLINE® Cat.5 FRNC HYBRID	ETHERLINE® Cat.6	ETHERLINE® Cat.7		
	Standards	UL/CSA-approved	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Installation	Fixed installation		✓	✓	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓		
		Flexible		✓	✓	✓	✓	✓	✓	✓	✓											✓	✓	✓	✓	✓					✓	✓	✓		
		Highly flexible (drag chains etc.)	✓																				✓	✓	✓	✓									
		Suitable for outdoor use/direct burial, UV-resistant																																	
	Characteristic impedance	100-120 ohms	✓					✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Dimensions	In mm², or diameter in mm, or AWG size																																	
		1 x 2 x 0.5, 2 x 2 x 0.5	✓																																
		2 x 1.5		✓																															
		2 x 2.5			✓																														
		AWG 18 + 15																																	
		AWG 24 + 22																																	
		2 x 2 x 0.8																																	
		2 x 2 x 0.8 + 3 x 1.5																																	
		2 x 2 x AWG 24/1 and 4 x 2 x AWG 24/1																																	
		4 x 2 x AWG 24/1																																	
		2 x 2 x AWG 26/7 and 4 x 2 x AWG 26/7																																	
		2 x 2 x AWG 22/1																																	
		2 x 2 x AWG 26/19, 4 x 2 x AWG 26/19																																	
		2 x 2 x AWG 22/7																																	
		1 x 2 x 1.1 + 1 x 1.1																																	
		1 x 2 x 1.1																																	
		3 x 1 x AWG 20																																	
		4 x 2 x AWG 22/1																																	
		2 x 2 x AWG 22/7 + 4 x 1.5																																	
	Bus systems	INTERBUS® DIN 19258 EN 50251 sensor/actuator bus																																	
		INTERBUS® (Phoenix Contact)																																	
		SUCOnet p® (Klöckner-Möller), Modulink® P (Weidmüller) MODBUS																																	
		VariNet®-P (Pepperl + Fuchs)																																	
		PROFIBUS DIN 19245 EN 50170																																	
		PROFIBUS-DP, FMS, FIP																																	
		PROFIBUS-PA, Foundation™ Fieldbus																																	
		CAN ISO 11898	✓																																
		AS-INTERFACE		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		EIB																																	
		CC-Link®																									✓	✓							
		Device Net™ (Allen-Bradley/Rockwell Automation)																																	
		Industrial Ethernet/Fast Ethernet																	✓	✓	✓	✓	✓	✓	✓	✓									
		PROFINET																																	
Legend		7-W = 7-wire braided conductor																																	
		AS-I = AS-INTERFACE																																	
		COMBI IBS = Installation bus cable for INTERBUS																																	
		DN = Device Net																																	
		EIB = European Installation Bus																																	
		FD = Cable suitable for drag chains																																	
		FRNC = Flame Retardant Non Corrosive																																	
		G = Rubber outer sheath (EPDM)																																	
		H = Halogen-free material																																	
		IBS = Remote bus cable for INTERBUS																																	
		L2 = Abbr. for SINEC L2-DP																																	
		LD = Long distance																																	
		P = Polyurethane outer sheath																																	
		PB = PROFI BUS																																	
		PE = Polyethylene outer sheath																																	
		PROFIBUS-DP = Decentralised Periphery																																	
		PROFIBUS-FMS = Fieldbus Message Specification																																	
		PROFIBUS-PA = Process Automation																																	

Appendix
A7 Selection tables

A7: UNITRONIC® BUS and ETHERLINE® – technical data


Usage criteria		Cable designation									
Page		335	336	335	324	325	302	307	305	326	329
		UNITRONIC® BUS IBS fixed installation	UNITRONIC® BUS IBS FD P highly flexible application	UNITRONIC® BUS IBS Yv suitable for outdoor use/direct burial	UNITRONIC® BUS LD fixed installation	UNITRONIC® BUS LD FD P highly flexible application	UNITRONIC® BUS PB fixed installation	UNITRONIC® BUS PB FD P + PB FD P FC highly flexible application	UNITRONIC® BUS PB Yv suitable for outdoor use/direct burial	UNITRONIC® BUS PA (blue + black) fixed installation	UNITRONIC® BUS CAN fixed installation (0.22 mm ²)
Parameter											
Characteristic impedance Ω		100	100	100	100-120	100-120	150+/-15	150+/-15	150+/-15	100+/-20	120
Mutual capacitance (800 Hz) max. nF/km		60	60	60	60	60	30	30	30	52	40
Peak operating voltage V (not for power applications)		250	250	250	250	250	250	250	250	250	250
Test voltage, core/core, Ueff. V		1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Conductor resistance (loop) Data network cable pair max. Ω/km		186	159.8	186	186	159.8	110	145, 133	115	44	186
Minimum bending radius, fixed installation		8 x D	-	8 x D	8 x D	-	75 mm	-	75 mm	65 mm	8 x D
Minimum bending radius, flexing		-	15 x D	-	-	15 x D	-	**	-	-	-
Temperature range fixed installation	from °C to °C	- 30 + 80	- 40 + 80	- 40 + 70	- 40 + 80	- 40 + 80	- 40 + 80	- 40 + 80	- 40 + 80	- 30 + 80	- 30 + 80
Temperature range flexing	from °C to °C	- + 70	- 30 + 70	- + 70	- 5 + 70	- 30 + 70	- + 70	- 30 + 70	- + 70	- + 70	- 5 + 70


Usage criteria		Cable designation									
Page		329	332	332	333	333	404	407	407	407	407
		UNITRONIC® BUS FD P CAN FD P highly flexible application (0.25 mm ²)	UNITRONIC® BUS FF 3 ARM	UNITRONIC® BUS FF 3	UNITRONIC® BUS CC	UNITRONIC® BUS CC FD P FRNC	ETHERLINE® H Cat.5e	ETHERLINE® P Cat.5e	ETHERLINE® H-H Cat.5e	ETHERLINE® H FLEX Cat.5e	ETHERLINE® P FLEX
Parameter											
Characteristic impedance Ω		120	100	100	110	110	100	100	100	100	100
Mutual capacitance (800 Hz) max. nF/km		40	56	65	60	60	48	46	46	48	48
Peak operating voltage V (not for power applications)		250	300	300	300	300	125	125	125	125	125
Test voltage, core/core, Ueff. V		1500	1500	1500	2000	2000	1000	1000	1000	1000	1000
Conductor resistance (loop) Data network cable pair max. Ω/km		159.8	≤ 24	≤ 24	37.8	37.8	192	186.6	186.6	284	284
Minimum bending radius, fixed installation		-	15 x D	5 x D	15 x D	4 x D	42 mm	42 mm	60 mm	30 mm	30 mm
Minimum bending radius, flexing		15 x D	-	-	-	8 x D	-	-	-	78 mm	78 mm
Temperature range fixed installation	from °C to °C	- 40 + 80	- 25 + 80	- 25 + 105	- 40 + 70	- 40 + 80	- 30 + 80	- 30 + 80	- 30 + 80	- 30 + 80	- 30 + 80
Temperature range flexing	from °C to °C	- 30 + 70	- + 70	- + 70	- + 70	- 40 + 80	- 5 + 60	- 5 + 60	- 5 + 60	- 5 + 60	- 5 + 60

**without FC = 65 mm/FC = 120 mm

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

A7: UNITRONIC® BUS and ETHERLINE® - technical data

Usage criteria		Cable designation									
Page		404	408	408	408	407	408	407	334	300	300
		ETHERLINE®Y CAT.5e AWG 22 / 1 fixed installation	ETHERLINE®Y UL/CSA CAT.5e AWG 22 / 1 fixed installation	ETHERLINE®Y CAT.5e AWG 22 / 1 fixed installation	ETHERLINE®Y FC CAT.5e AWG 22 / 1 fixed installation	ETHERLINE®YY CAT.5e AWG 22 / 1 suitable for outdoor use/direct burial	ETHERLINE® FD P CAT.5e AWG 26 / 19 highly flexible application	ETHERLINE® PN Cat.5 FD highly flexible application	UNITRONIC® BUS SAFTEY fixed installation/highly flexible	UNITRONIC® BUS ASI (G) yellow + black fixed installation/flexible	UNITRONIC® BUS ASI (TPE) yellow + black fixed installation/flexible
Parameter											
Characteristic impedance Ω		100	100	100	100	100	100	100	100-200	-	-
Mutual capacitance (800 Hz) max. nF/km		48	48	48	48	48	48	48	45	-	-
Peak operating voltage V (not for power applications)		125	125	125	125	125	125	125	250	300	300
Test voltage, core/core, Ueff. V		1000	1000	1000	1000	1000	1000	1000	3000	2000	2000
Conductor resistance (loop) Data network cable pair max. Ω/km		192	192	192	192	192	192	192	52	27.4	27.4
Minimum bending radius, fixed installation		-	-	-	-	-	-	-	8 x D	3 x D	3 x D
Minimum bending radius, flexing		78 mm	90 mm	90 mm	90 mm	90 mm	90 mm	100 mm	-	-	-
Temperature range fixed installation	from °C to °C	-30 +80	-30 +70	-30 +80	-30 +80	-30 +80	-30 +80	-20 +70	-40 +80	-40 +85	-40 +85
Temperature range flexing	from °C to °C	-5 +60	-5 +60	-5 +60	-5 +60	-5 +60	-5 +60	-5 +60	-30 +80	-	-

Usage criteria		Cable designation									
Page		301	301	301	300	327	327	327	327	337	337
		UNITRONIC® BUS ASI LD FD P yellow + black highly flexible application	UNITRONIC® BUS ASI FD (TPE) A yellow + black highly flexible application	UNITRONIC® BUS ASI FD P FRNC yellow + black fixed installation	UNITRONIC® BUS ASI (PVC) A yellow + black fixed installation	UNITRONIC® DeviceNet THICK + THIN (halogen-free) fixed installation	UNITRONIC® DeviceNet THICK + THIN (PVC) fixed installation	UNITRONIC® DeviceNet THICK + THIN (PUR) highly flexible	UNITRONIC® DeviceNet THICK + THIN (PVC) highly flexible	UNITRONIC® BUS EIB	UNITRONIC® BUS COMBI EIB
Parameter											
Characteristic impedance Ω		-	-	-	-	120	120	120	120	-	-
Mutual capacitance (800 Hz) max. nF/km		-	-	-	-	39.8	39.8	39.8	39.8	max. 100	max. 100
Peak operating voltage V (not for power applications)		300	300	300	300	300	300	300	300	250	250
Test voltage, core/core, Ueff. V		2000	2000	2000	2000	2000	2000	2000	2000	4000	4000
Conductor resistance (loop) Data network cable pair max. Ω/km		16.5	27.4	27.4	27.4	THICK 45 THIN 180	THICK 45 THIN 180	THICK 45 THIN 180	THICK 45 THIN 180	max. 130	max. 130
Minimum bending radius, fixed installation		3 x D	3 x D	3 x D	3 x D	10 x D	10 x D	-	-	10 x D	10 x D
Minimum bending radius, flexing		6 x D	6 x D	-	-	-	-	10 x D	10 x D	-	-
Temperature range fixed installation	from °C to °C	-40 +80	-40 +105	-40 +80	-30 +90	-25 +80	-20 +80	-	-	-30 +70	-30 +70
Temperature range flexing	from °C to °C	-30 +70	-30 +105	-30 +70	-	-	-	-40 +80	-10 +80	-	-



Increase efficiency through standardisation and decentralisation

The Verein Deutscher Werkzeugmaschinenfabriken e. V. (VDW) [German Machine Tool Manufacturing Federation] developed **DESINA[®]** (DEcentralised and Standardised INstallation technology), a comprehensive overall concept for the standardisation of electrical installation of equipment and machinery. State-of-the-art technologies are employed with the aim of simplifying installation work, speeding up assembly and repair work and improving quality. Decentralisation means that control components and their related functions are moved from the central control cabinet to field level.



Lapp Kabel and DESINA[®]-compliant products

The VDW used existing fieldbus systems as a basis for defining new standards for connectors and for increasing efficiency when cabling, working in partnership with the mechanical engineering, automotive and supplier sectors. As the leading supplier to machine tool manufacturers, Lapp Kabel is fully committed to the **DESINA[®]** concept. We can quickly and easily develop solutions for you that comply with **DESINA[®]** requirements, from the individual components right through to assembled cables that are ready for connection/installation.

Usage criteria	Cable designation																																				
	Page	91	103	99	65	41	70	68	43	45	52	53	100	113	116	121	122	127	126	129	49	102	105	106	93	104	94										
		ÖLFLEX [®] SERVO 709 CY	ÖLFLEX [®] SERVO FD 796 CP	ÖLFLEX [®] SERVO FD 770 CP DESINA[®]	ÖLFLEX [®] CLASSIC 400 P	ÖLFLEX [®] 140	ÖLFLEX [®] 491 P	ÖLFLEX [®] 440 P	ÖLFLEX [®] 150 QUATTRO	ÖLFLEX [®] 191	ÖLFLEX [®] 100 H	ÖLFLEX [®] 110 H	ÖLFLEX [®] SERVO FD 781 CY	ÖLFLEX [®] CLASSIC FD 810 P	ÖLFLEX [®] FD 855 P	ÖLFLEX [®] FD 90	ÖLFLEX [®] FD 90 CY	ÖLFLEX [®] CHAIN 879	ÖLFLEX [®] FD 891/891 CY	ÖLFLEX [®] FD 891 P	UNITRONIC [®] FD P	HITRONIC [®] HYBRID FD P DESINA[®]	UNITRONIC [®] SENSOR P DESINA[®]	ÖLFLEX [®] Tray II	ÖLFLEX [®] SERVO FD 795 P	Servo cable as per INDRAMAT [®] standard	Servo cable as per LENZE [®] standard	Servo cable as per FANUC [®] standard	Servo cable as per SIEMENS [®] standard 6FX 5008	Servo cable as per SIEMENS [®] standard 6FX 8 PLUS	Servo cable as per SEW [®] standard						
Properties																																					
Servo cable																																					
Screened	●	✓	✓										✓																								
Orange sheath																																					
RAL 2003																																					
Cable for measurement systems																																					
Screened	●			✓																																	
Green sheath																																					
RAL 6018																																					
Power cable																																					
Unscreened	●				✓		✓																														
Black sheath																																					
RAL 9005																																					
24-volt control cable																																					
Unscreened	●																																				
Grey sheath																																					
RAL 7040 (similar to 7001)																																					
Fieldbus hybrid cable																																					
Cu and fibre-optic cable																																					
Violet sheath																																					
RAL 4001																																					
Sensor/actuator cable																																					
Unscreened																																					
Yellow sheath																																					
RAL 1021																																					
DESINA[®] marking on the sheath																																					
Suitable for power chains																																					
Sheath compound with enhanced oil resistance																																					
UL and/or CSA approval																																					

✓ Main application/design
 ✓ Possible application

A10 Selection tables

A10: technical data for EPIC® rectangular connectors

Usage criteria		EPIC® rectangular connectors/inserts																				
Page		450	450	451	451	452	452	453	453	454	454	455	455	456	457	457	456	458	458	459	459	460
Image																						
Parameter																						
Number of contacts		3 + PE	4 + PE	10 + PE	16 + PE	32 + PE	48 + PE	6	6	14	14	20	20	5 + PE	7 + PE	7 + PE	8	15 + PE	15 + PE	25 + PE	25 + PE	40 + PE
Connection system:	screw	✓	✓	✓	✓	✓	✓	✓		✓		✓										
	solder								✓			✓										
	crimp												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	cage clamp																					
Suitable contacts:	H-BE 2.5, machined													✓								
	H-D 1.6, machined														✓		✓	✓	✓	✓	✓	✓
	H-D 1.6, stamped																					✓
Cross-section [mm²]		0.5 -2.5	0.5 -2.5	0.5 -2.5	0.5 -2.5	0.5 -2.5	0.5 -2.5	0.5 -1.5	max. 1.5	0.5 -1.5	max. 1.5	0.5 -1.5	max. 1.5	0.5 -2.5	0.14 -2.5	0.14 -2.5	0.14 -2.5	0.14 -2.5	0.14 -2.5	0.14 -2.5	0.14 -2.5	0.14 -2.5
IEC: rated voltage [V]	400	✓	✓																			
	250			✓	✓	✓	✓											✓	✓	✓	✓	✓
	24 AC/60 DC							✓	✓	✓	✓	✓	✓									
	230/400													✓								
24 AC/60 DC/250															✓	✓						
	500																					
IEC: rated current [A]		23	23	16	16	16	16	10	10	10	10	10	10	16	10	10	10	10	10	10	10	10
UL: rated voltage [V]		600	600	600	600	600	600	48	48	48	48	48	48	600	250	250	250	250	250	250	250	250
UL: rated current [A]		10	10	14	14	14	14	10	10	10	10	10	10	16	10	10	10	10	10	10	10	10
CSA: rated voltage [V]		400	400	600	600	600	600	48	48	48	48	48	48	600	-	-	-	-	-	-	-	-
CSA: rated current [A]		10	10	16	16	16	16	10	10	10	10	10	10	16	-	-	-	-	-	-	-	-
Suitable housing		H-A 3	H-A 3	H-A 10	H-A 16	H-A 32	H-A 48	H-A 3	H-A 3	H-A 10	H-A 10	H-A 16	H-A 16	H-A 3	H-A 3	H-A 3	H-A 3	H-A 10	H-A 10	H-A 16	H-A 16	H-B 16

Usage criteria		EPIC® rectangular connectors/inserts																				
Page		460	461	461	462	462	463	463	464	464	465	465	465	466	466	466	467	467	467	468	468	468
Image																						
Parameter																						
Number of contacts		40 + PE	64 + PE	64 + PE	24 + PE	42 + PE	72 + PE	108 + PE	144 + PE	216 + PE	6 + PE	6 + PE	6 + PE	10 + PE	10 + PE	10 + PE	16 + PE	16 + PE	16 + PE	24 + PE	24 + PE	24 + PE
Connection system:	screw										✓			✓			✓			✓		
	solder																					
	crimp	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓				✓			✓		✓
	cage clamp													✓						✓		
Suitable contacts:	H-BE 2.5, machined													✓								
	H-D 1.6, machined		✓		✓	✓	✓	✓	✓	✓									✓			✓
	H-D 1.6, stamped	✓		✓																		
Cross-section [mm²]		0.14 -2.5	0.14 -2.5	0.14 -2.5	0.14 -2.5	0.14 -2.5	0.14 -2.5	0.14 -2.5	0.14 -2.5	0.14 -2.5	0.5 -2.5	0.5 -4.0	0.5 -2.5	0.5 -2.5	0.5 -4.0	0.5 -2.5	0.5 -2.5	0.5 -4.0	0.5 -2.5	0.5 -2.5	0.5 -2.5	0.5 -2.5
IEC: rated voltage [V]	400																					
	250	✓	✓	✓	✓	✓	✓	✓	✓	✓												
	24 AC/60 DC																					
	230/400																					
24 AC/60 DC/250																						
	500										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC: rated current [A]		10	10	10	10	10	10	10	10	10	16	16	16	16	16	16	16	16	16	16	16	16
UL: rated voltage [V]		250	250	250	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
UL: rated current [A]		10	10	10	8.5	8.5	8.5	8.5	8.5	8.5	16	16	16	16	16	16	16	16	16	16	16	16
CSA: rated voltage [V]		-	-	-	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
CSA: rated current [A]		-	-	-	10	10	10	10	10	10	16	16	16	16	16	16	16	16	16	16	16	16
Suitable housing		H-B 16	H-B 24	H-B 24	H-B 6	H-B 10	H-B 16	H-B 24	H-B 32	H-B 48	H-B 6	H-B 6	H-B 6	H-B 10	H-B 10	H-B 10	H-B 16	H-B 16	H-B 16	H-B 24	H-B 24	H-B 24

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® EPIC® SKINTOP® SILVYN® FLEXIMARK® ACCESSORIES APPENDIX

Usage criteria		EPIC® rectangular connectors/inserts																				
Page		469	469	469	470	470	470	471	471	472	472	473	473	474	474	475	475	475	476	476	476	476
		H-BE 32	H-BE 32	H-BE 32	H-BE 48	H-BE 48	H-BE 48	H-EE 10	H-EE 18	H-EE 32	H-EE 46	H-EE 64	H-EE 92	H-BS 6	H-BS 12	H-BVE 3	H-BVE 6	H-BVE 10	Terminal adapter TB-H-BE 6	Terminal adapter TB-H-BE 10	Terminal adapter TB-H-BE 16	Terminal adapter TB-H-BE 24
Parameter																						
Number of contacts		32 + PE	32 + PE	32 + PE	48 + PE	48 + PE	48 + PE	10 + PE	18 + PE	32 + PE	46 + PE	64 + PE	92 + PE	6 + PE	12 + PE	3+2 + PE	6+2 + PE	10+2 + PE	6 + PE	10 + PE	16 + PE	24 + PE
Connection system:	screw	✓			✓									✓	✓	✓	✓	✓	✓	✓	✓	✓
	solder																					
	crimp		✓			✓		✓	✓	✓	✓	✓	✓									
	cage clamp			✓			✓															
Suitable contacts:	H-BE 2.5, machined	✓				✓		✓	✓	✓	✓	✓	✓									
Cross-section [mm²]		0.5 -2.5	0.5 -4.0	0.5 -2.5	0.5 -2.5	0.5 -4.0	0.5 -2.5	0.5 -4.0	0.5 -4.0	0.5 -4.0	0.5 -4.0	0.5 -4.0	0.5 -4.0	0.5 -6.0	0.5 -6.0	0.5 -2.5	0.5 -2.5	0.5 -2.5	0.5 -4.0	0.5 -4.0	0.5 -4.0	0.5 -4.0
IEC: rated voltage [V]		500	500	500	500	500	500	500	500	500	500	500	500	500	500	630	630	630	500	500	500	500
IEC: rated current [A]		16	16	16	16	16	16	16	16	16	16	16	16	35	35	16	16	16	16	16	16	16
UL: rated voltage [V]		600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
UL: rated current [A]		16	16	16	16	16	16	16	16	16	16	16	16	35	35	16	16	16	16	16	16	16
CSA: rated voltage [V]		600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
CSA: rated current [A]		16	16	16	16	16	16	16	16	16	16	16	16	35	35	16	16	16	16	16	16	16
Suitable housing:		H-B 32	H-B 32	H-B 32	H-B 48	H-B 48	H-B 48	H-B 6	H-B 10	H-B 16	H-B 24	H-B 32	H-B 48	H-B 16	H-B 32	H-B 10	H-B 16	H-B 24	H-B 6	H-B 10	H-B 16	H-B 24

Usage criteria		EPIC® rectangular connectors/inserts																		
Page		477	477	477	478	478	478	479	479	479	480	480	481	481	481	482	485	485	485	485
		High-current module, 1+PE	High-current module, 2-pin	High-voltage module, 3-pin	High-voltage module, 4+PE	3-pin module	4-pin module, HE	4-pin module, cage clamp	5-pin module	10-pin module, machined	10-pin module, stamped	20-pin module	3-pin module coaxial	Profibus DP module	Universal Bus module	R/45 module	MCR 6 module frame	MCR 10 module frame	MCR 16 module frame	MCR 24 module frame
Parameter																				
Number of contacts		1 + PE	2	3	4 + PE	3	4	4	5	10	10	20	3	2 + screen	4 + screen	8 + 4	-	-	-	-
Connection system:	screw	✓	✓											✓	✓					
	solder																			
	crimp			✓	✓	✓	✓		✓	✓	✓	✓				✓				
	cage clamp							✓												
Suitable contacts:	MC 3.6, machined			✓		✓														
	MC 2.5, stamped				✓															
	H-BE 2.5, machined						✓													
	MC 2.5, machined								✓											
	H-D 1.6, machined									✓						✓				
	H-D 1.6, stamped										✓									
	MD 1.0, stamped											✓								
	MC coaxial												✓							
Suitable housing:	for 2 modules																✓			
	for 3 modules																	✓		
	for 5 modules																		✓	
	for 7 modules																			✓
	Cross-section [mm²]		10.0 -25.0	10.0 -25.0	1.5 -10.0	0.5 -2.5	1.5 -10.0	0.5 -4.0	0.5 -2.5	0.5 -4.0	0.14 -2.5	0.14 -2.5	0.08 -0.52	-	max. 1.5	max. 1.5	Cat.5 0.14 -2.5	-	-	-
IEC: rated voltage [V]		1000	1000	1000	1000	630	630	400	400	250	250	100	250	30	30	125/600	-	-	-	-
IEC: rated current [A]		82	82	50	16	40	25	14	20	10	10	4	-	1	1	1.5/10	-	-	-	-
UL: rated voltage [V]		-	-	-	-	-	-	600	-	-	-	-	-	-	-	-	-	-	-	-
UL: rated current [A]		-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-
CSA: rated voltage [V]		-	-	-	-	-	-	600	-	-	-	-	-	-	-	-	-	-	-	-
CSA: rated current [A]		-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-
Suitable housing:		**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	H-B 6	H-B 10	H-B 16	H-B 24

** Module frame

A11 Selection tables

A11: applications of HITRONIC® fibre-optic cable components at a glance

Usage criteria	Lapp Kabel plastic fibre-optic cables (POF) – fibre type, item number										PCF fib. op. cable range		GOF fib. op. cable range						
Page	429	429	430	431	431							432	432			433	434	435	436
	HITRONIC® POF Simplex PE	HITRONIC® POF Simplex PE-PUR	HITRONIC® POF Duplex PE	HITRONIC® POF Duplex PE-PUR	HITRONIC® POF Duplex Heavy PE-PUR							HITRONIC® BUS PCF Duplex PE-PUR Indoor	HITRONIC® BUS PCF Duplex PE-PUR Outdoor			HITRONIC® HGN outdoor cable, A-DQ(ZN)BZY	HITRONIC® HVN outdoor cable, A-DQ(ZN)BZY	HITRONIC® HQW armoured outdoor cable, A-DQ(ZN)(SR)ZY	HITRONIC® HRH breakout cable, J-V(ZN)HH
Properties																			
For indoor use	✓	✓	✓	✓	✓							✓							✓
For outdoor use													✓			✓	✓	✓	
Direct routing underground																✓	✓	✓	
Armouring																		✓	
Rodent protection																✓	✓	✓	
Heavy duty					✓													✓	
Flame-retardant		✓		✓	✓							✓							✓
Water-resistant													✓			✓	✓	✓	
UV-resistant	✓		✓									✓	✓			✓	✓	✓	
Halogen-free	✓	✓	✓	✓	✓							✓	✓			✓	✓	✓	✓

Please note: the standard lengths for fibre-optic cables are 100 m and 500 m; any other lengths will incur a surcharge.
O. r. = on request

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

A12: applications of servo cables in electrical power drive systems (PDS)

Usage criteria		Cable designation (fixed installation or occasional flexing)																
		87	88	91	89	35	36	90	92	94								
		ÖLFLEX® SERVO 700	ÖLFLEX® SERVO 700 CY	ÖLFLEX® SERVO 709 CY	ÖLFLEX® SERVO 720 CY	ÖLFLEX® CLASSIC 110 BLACK 0.6/1 KV	ÖLFLEX® CLASSIC 110 CY BLACK 0.6/1 KV	ÖLFLEX® SERVO 2YSLCY low capacitance	ÖLFLEX® SERVO 9YSLCY low capacitance	Servo cable as per SEW® standard, static	Servo cable as per SIEMENS® FX5 series							
Use																		
Power drive systems	Mains	✓				✓												
	Motor	✓	✓	✓			✓	✓	✓									
SEW®	Power									✓								
	Signal																	
SIEMENS®	Power										✓							
	Signal										✓							
INDRAMAT®	Power			✓														
	Signal																	
LENZE®	Power							✓	✓									
	Signal																	
Heidenhain®	Power																	
	Signal				✓													

Usage criteria		Cable designation (permanent flexing, e.g. in power chains)																			
		95	96	97	98	99	100	101	102	103										277	
		ÖLFLEX® SERVO FD 750 P	ÖLFLEX® SERVO FD 755 P	ÖLFLEX® SERVO FD 760 CP	ÖLFLEX® SERVO FD 770 CP	ÖLFLEX® SERVO FD 770 CP DESINA®	ÖLFLEX® SERVO FD 781 CY	ÖLFLEX® SERVO FD 785 P	ÖLFLEX® SERVO FD 795 P	ÖLFLEX® SERVO FD 796 CP	Servo cable as per SIEMENS® FX8PLUS series	Servo cable as per INDRAMAT® standard INK	Servo cable as per LENZE® standard	Servo cable as per Heidenhain® standard	Servo cable as per ELAU® standard	Servo cable as per KEB® standard	Servo cable as per Controles Techniques® standard	Servo cable as per Berger Lahr® standard	Servo cable as per B & R® standard	Servo cable as per FANUC® standard	UNITRONIC® FD CP (TP) plus
Use																					
Power drive systems	Mains																				
	Motor	✓	✓				✓		✓	✓											
SEW®	Power																				
	Signal																				✓
SIEMENS®	Power										✓	✓									
	Signal				✓	✓					✓	✓									
INDRAMAT®	Power			✓	✓	✓						✓	✓								
	Signal											✓	✓								
LENZE®	Power										✓										
	Signal											✓	✓								
Heidenhain®	Power																				
	Signal				✓	✓								✓							
ELAU®	Power									✓											
	Signal																				
KEB®	Power																				
	Signal																				
Controles Techniques®	Power																				
	Signal																				✓
Berger Lahr®	Power																				
	Signal																				✓
B & R®	Power																				
	Signal																				✓
FANUC®	Power																				
	Signal																				✓

✓ Main application/design
 ✓ Possible application

SIEMENS® article designations (6FX5002/5008, 6FX7002/7008, 6FX8002/8008) are registered trademarks of SIEMENS AG, and are listed for comparison purposes only. INDRAMAT® article designations (IKG, IKS, INK, INS, RKL and RKG) are registered trademarks of Bosch Rexroth AG, and are listed for comparison purposes only. LENZE® article designations (EWLM_, EWLR_, EWLE_, EWLL_, EYL and EYP) are registered trademarks of LENZE AG, and are listed for comparison purposes only. SEW® and SEW® Eurodrive are registered trademarks of SEW Eurodrive GmbH & Co KG. Heidenhain®, ELAU®, KEB®, Controles Techniques®, Berger Lahr®, B & R® and FANUC® are registered trademarks of the respective companies, and are listed here for comparison purposes only.

A 13 Selection tables

A 13: cables for expanded ambient temperature ranges

Usage criteria	Cable designation																								
	172	173	174	175	176	177	178	179	180	181	182	183	183	184	185	186	187	188	190	189	190	191	192	193	194
Use	Please see technical table T1																								
Internal and external machine cabling	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Internal wiring of control units/machinery	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
In dry rooms	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
In dry and damp rooms	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Outdoors, fixed installation (mech. protection)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Chemical resistance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
In EMC-sensitive environments	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Suitable for extreme applications in paint shops	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standards	Please see technical table T1																								
Halogen-free according to IEC 60754-1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low smoke density according to IEC 601034	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low smoke toxicity according to NES 02-713	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Flame-retardant according to IEC 60332-1-2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Flame-retardant according to IEC 60332.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
In line with VDE/HAR/DIN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With HAR certification	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With UL/CSA certification	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With GL/DNV certification	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature range	Please see technical table T1																								
+1565 °C																									
+400 °C																									
+350 °C																									
+300 °C																									
+260 °C																									
+200 °C																									
+180 °C																									
+145 °C																									
+125 °C																									
+105 °C																									
+90 °C																									
-20 °C																									
-35 °C																									
-50 °C																									
-80 °C																									
-100 °C																									
-140 °C																									
-190 °C																									
Nominal voltage	Please see technical table T1																								
300/500 volts	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
450/750 volts	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
600/1000 volts	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10 kV																									
600 volts as per UL/CSA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design	Please see technical table T1																								
Solid wire as per VDE 0295, class 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fine-wire according to VDE 0295, class 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PVC core insulation/sheath, heat-resistant	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Halogen-free special core insulation/sheath	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Silicone core insulation/sheath	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Silicone, notch-resistant (EWKF) sheath	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fluoropolymer core insulation/sheath (FEP/PTFE)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Glass fibre core insulation/sheath	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed numbers according to VDE 0293	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Colour code according to VDE 0293-308	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Individual colours	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Overall screening	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Steel wire armouring	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ Main application/design
 ✓ Possible application
 ● Flexible use
 □ Fixed and flexible use
 ▲ Fixed installation
 ◆ Fixed installation (briefly)



1. General

The **resistance** of the product materials in the application environment, correct product assembly and subjected load in the context of permitted limit values (technical data) have a significant impact on the safety and durability of our products. Notes on product usage and technical data can primarily be found on the catalogue product pages, both in the text sections and the tables provided.

Selection tables A1–A13 provide an overview of similar products and enable comparisons on the basis of important product properties (e.g. “permitted temperature range”, “permitted bending radius”) and main application parameters (e.g. “outdoor use, unprotected”), thus facilitating the selection process.

The **“technical tables”** (T1–T30) focus on the following:

- Chemical resistance (T1, T24), radiation resistance (T28), weather and oil resistance (T15)
- Assembly of PROFIBUS and Industrial Ethernet cables (T2), assembly of cables for power chains (T3), assembly of cables for conveyor technology (T4, T5)

- Assembly/installation/fastening of cables in special cases (T19)
- Assembly, thread dimensions and tightening torques of cable glands (T21)
- Electrical load capacity, conversion factors, installation type according to VDE, Germany (T12)
- Electrical load capacity, installation type according to NEC, USA (T13)
- Load capacity with regard to thermal stress and tensile strain (T19)
- Conductor cross-sections with different measurement systems (T16)

This and the following information on special product groups/topics represent guidelines on the use and application of our products, but do not cover the competent project planning of electrical equipment in all its aspects.

Questions?

Contact us; we are happy to help: **Tel.: 0049 1805 101212-9300**



2. Cables and wires

The applications of cables and wires are extremely diverse and thus governed by a whole range of application standards in the various standard groups (IEC, EN, NEC...).

One example is the international standard IEC 60204-1:2009, Electrical equipment of machines – Part 1: General requirements) with reference to the requirements of cables and wires as well as their application conditions.

In all cases, meeting these **general** specifications requires the user to perform a professional examination as to the existence of **specific** product standards with other/extended requirements that may take precedence.

In this case, support is provided by the catalogue product pages in the form of product and application standards – e.g. “Oil resistance according to VDE 0473-811” or “Railway applications: EN 50306-2”. In the area of low voltage harmonised cables (e.g. H05VV5-F/ÖLFLEX® 140), DIN VDE 0298-300 in table A4 provides a list of requirements and criteria that are largely applicable to other low voltage cables as well as notes on recommended applications.

DIN VDE 0298-300 is the German version of the harmonisation document HD 516 S2:1997 + A1:2003 + A2:2008.

In addition, the application information provided in IEC publication 62440:2008-02 Ed. 1.0 must be observed for electrical cables with nominal voltages up to 450/750 V.

A summary of the most important information on cable and wire applications contained in the aforementioned documents is provided below.

General

Conductors, cables and wires must be selected such that they are suitable for the relevant operating conditions (e.g. voltage, current, protection against electric shock, bundling of cables and wires) and external influences (e.g. ambient temperature, presence of water or corrosive materials, mechanical stress, incl. stress experienced during installation, fire risks).

Electrical voltage

The control and connecting cables listed in the catalogue are subject to the **“low voltage directive” 2006/95/EC for electrical equipment with a nominal voltage between 50 and 1000 V (alternating current) and between 75 and 1500 V (direct current).**

The nominal voltage is the reference voltage for which cables and wires are constructed and tested. The nominal voltage of cables and wires used with AC supplies must be greater than or equal to the nominal supply voltage. In the case of a DC supply, the nominal supply voltage must not exceed the nominal voltage of the cable by a factor greater than 1.5. The continuous operating voltage of AC and DC supplies must not exceed the nominal supply voltage by more than 10%.

The nominal voltage of cables and wires is expressed by the ratio U/U_0 in volts, whereby:

- U_0 is the effective voltage between a phase conductor and the earth (metal sheath/screening of the cable or surrounding medium)
- U is the effective voltage between two phase conductors of a multi-core cable or a system of single core cables

The dielectric strength of the insulation of cables, conductors and wires must be sufficient for the required test voltage.

For cables and wires subjected to voltages over 50 V AC or 120 V DC, the test voltage is a minimum of 2000 V AC for a duration of 5 minutes. For alternating currents with a maximum of 50 V and direct currents with a maximum of 120 V (typical values for SELV or PELV systems), the test voltage must be a minimum of 500 V AC for a duration of 5 minutes. The AC test voltages are detailed on the individual product pages in the catalogue under “technical data” and can also be used to make selections in cases where no meaningful U/U_0 ratio can be provided.

T0 Technical tables

T0: safe use of our products



2. Cables and wires – continued

Conductor cross-sections with different measurement systems

IEC 60228 is an important international standard that describes cables with metric cross-sections. North America and other regions currently employ conductor cross-sections according to the AWG (American Wire Gauge) system with kcmil" used for larger cross-sections. A table is provided under T16 to support safe, alternative usage of cables from both these measurement systems.

Tensile strain

The following applies to **all** conductors up to maximum tensile strain of 1000 N: Max. 15 N per mm² conductor cross-section (excl. screening, concentric conductors and divided protective conductors) for static tensile strain when **using** moving/flexible cables and cables for/in fixed installation. Max. 50 N per mm² conductor cross-section (excl. screening, concentric conductors and divided protective conductors) for static tensile strain when **assembling** cables for/in fixed installation.

Cables for use in power/drag chains

These cables are indicated by the code "FD" in their product names. In addition to the generally applicable information on assembly and project planning contained in technical table T3, particular attention must be paid to the specifications relating to individual cables that are provided on the relevant product pages in the catalogue.

These are specifically:

- Restrictions of the traversing path length (e.g.: "...up to 10 m").
- Restrictions of the minimum bending radius for flexible applications. The radius implemented with the power/drag chain must not be lower than the minimum bending radius! The minimum bending radius is defined as the inner radius relative to the surface of the curved cable.

Transport and storage

Cables and wires that are **not** designated for outdoor use must be stored indoors, in dry conditions and protected from direct sunlight. If stored outside, all cable and wire ends must be sealed to prevent the ingress of water.

The ambient temperature for transport and storage must be between -25 °C and +55 °C (max. +70 °C for no longer than 24 hours). Particularly in the lower temperature ranges, mechanical stress through vibration, shock, bending and twisting must be avoided. This is especially important for PVC-insulated cables and wires. The following guidelines apply for the maximum storage of cables and wires before use and without prior testing:

- One year if stored outdoors
- Two years if stored indoors



3. Industrial connectors

Connectors must not be joined or separated under load! Provision of the protective conductor function must be assured by the installation type of the connector. This can be achieved by means of metallically conductive EPIC connector housings or through the implementation of suitable measures on the part of the operator prior to installation.

SAFETY NOTE:

In the case of EPIC® inserts such as H-BE or H-BS, the protective conductor connection can be changed. When connecting the protective conductor, the low-resistance connection to the protective conductor of the counter piece must not be interrupted. Terminal screw changes must be performed on both sides to ensure that the protective function is maintained.

Otherwise, the relevant specifications apply in accordance with: DIN EN 50110-1 (VDE 0105-1) – Operation of electrical installations.

It is up to the user to assess whether, in specific areas of application not covered by us, the components listed in this catalogue comply with regulations other than those specified here. We reserve the right to make constructional and design modifications due to quality improvements, enhancements or manufacturing requirements. The information in this catalogue serves to specify the components and does not guarantee properties.

Assurance of the technical properties can only be given if all components are supplied by Lapp. Otherwise, any testing and approval is the responsibility of the operator.

Certificates:

VDE, certificate number 40016270, 40011894, 40013251, 40019264UL, file number: E75770, E249137, E192484
CSA files: E75770, E249137, E192484
TÜV



4. Cable glands and cable bushings

SKINTOP® and SKINDICHT® cable glands and cable entries represent highest quality levels and over 30-years of expertise in the relevant areas of application.

Along with quality, the correct usage of these products with regard to operational safety is the most important factor. For this reason, we would like to remind you to observe all relevant standards for your

intended application. In addition to the technical data on the product pages, please also refer to the technical tables in our main catalogue (T21 – thread dimensions for cable glands, tightening torques and installation dimensions for cable glands/T22 – protection ratings according to EN 60529), as well as the supplied package leaflets describing product usage (e.g. package leaflet for products acc. to DIN EN 60079-0, DIN EN 60079-7).



5. Cable protection and guiding systems

SILVYN® cable protection systems offer additional protection for cables and wires. If used in a specified system and professionally fitted by a certified electrician, SILVYN® products will meet the properties detailed on the catalogue pages.

When configuring and assembling the SILVYN® CHAIN energy supply systems, the assembly instructions detailed in table T3 "Assembly guidelines for ÖLFLEX® FD and UNITRONIC® FD cables in power chains" must be followed. With regards to the correct installation of a SILVYN® CHAIN energy supply system, please refer to the information in our current special SILVYN® CHAIN catalogue.

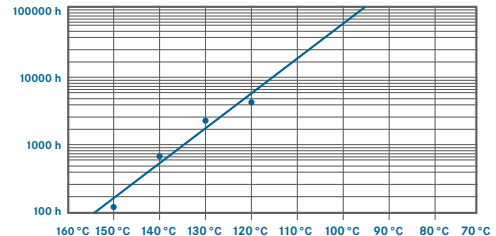
6. Ready-to-use parts, tools and printers

Products in the area of cable accessories are system-tested to ensure optimal assembly. The commissioning and processing of

these products must only be performed by authorised electricians and following the supplied information.

7. Service life

The average service life of cables is dictated not just by the mechanical and chemical stress, but also by the operating or ambient temperature. As is customary in mechanical engineering, the continuous temperature range of a cable, as specified in our technical data, refers almost exclusively to a period of at least 20,000 h. The adjacent example of an ageing curve according to Arrhenius illustrates the behaviour of an insulating material on the basis of time and temperature. The material tested here has a temperature index of approx. +110 °C at 20,000 h. The material can also be specified with an index of +135 °C, but in this case only for a duration of approx. 3000 h.



8. Connection technology

The quality of an electrical connection greatly depends on the choice of suitable components in the relevant nominal cross-sections and the use of recommended tools for processing.

Size differences between the cable and the tubular cable lug/conductor end sleeve are attributable to the fact that class 5 and 6 conductors can be pressed with just one crimp contact – even if the conductors have different structures (bunched, stranded or compressed conductors). Despite the sleeves appearing to be too large for the relevant cross-sections, the correct combination of

conductor, contact and tool will ensure gas-tight crimping. The dimensional accuracy at the aforementioned connection points is governed by standards, incl.:

- DIN EN 60228 (VDE 0295), September 2005 – “Conductors for cables and insulated leads”
- DIN 46228 – 4, September 1990 – “Tubular end-sleeves with plastic sleeve”
- Crimping quality according to DIN 46228-1 and DIN EN 50027

9. Testing and inspection

The operator must ensure that the correct functioning and condition of electrical systems and equipment is checked by or under the supervision of a certified electrician. This must occur prior to initial commissioning and before reactivation following any modifications or maintenance work.

Inspection intervals must be set such that any problems that can reasonably be expected are identified in good time. In many cases, the service life of Lapp products can only be established empirically in the relevant applications. Indicators for inspection intervals can be based, for example, on the temperature load (see “Service life”) or the number of permitted alternating bending cycles for drag chains (see information on relevant product pages in the catalogue). As a rule, cables and wires in fixed installations will have a longer service life and will thus also be suitable for longer inspection intervals. Shorter intervals are recommended for cables and wires used at the limit of their permitted parameters. This applies to the following in

particular (see also “Technical data” and “Application” on the relevant product pages in the catalogue):

- Minimum bending radius
- Temperature range
- Presence of radiation (e.g. sunlight)
- Existence of tensile strain
- Influence of surrounding chemical substances and unverified resistance
- In the case of water accumulation or condensation in the area of the connection points. Cables and wires should be subjected to a visual inspection to identify any changes to their appearance. This should be done no later than when the cables or wires are likely to have been exposed to excessive loads (be they electrical, thermal, mechanical or chemical).

10. Fire properties

The behaviour of products in the case of a fire (reaction to fire) is of great importance to building installation. The EU has converted the various national regulations throughout Europe into a uniform rating system. The Construction Products Regulation (directive (EU) no. 305/2011) of 09/03/2011 comes into force on 01/07/2013 and will be binding for all member states. The regulation applies to all energy, control and communication cables installed in buildings.

To determine behaviour in the case of a fire (reaction to fire), cables designated for building installation will in future be examined on the basis of unified European fire testing and allocated to one of seven Euro classes.

The specific criteria are flame propagation, heat development, smoke, smoke density, acid development, corrosivity and the formation of burning drops. The assignment of Euro classes also combats known misunderstandings and frequently incorrect interpretations of behaviour in the case of a fire.

For example, the absence of halogens in cables greatly reduces toxicity and corrosivity, but does not guarantee reduced smoke and slow flame propagation.

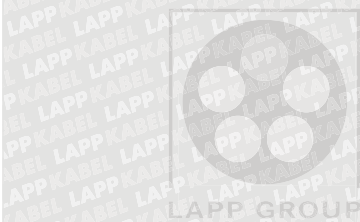
In the context of the Construction Products Regulation, Lapp Kabel is able to provide verification of Euro class assignments where applicable.

T1 Technical tables

T1: chemical resistance of cables

All data is for a temperature of +20 °C

Cable designations



ÖLFLEX® CLASSIC 100, 110, 115 CY, 100 BK POWER, 110 BK,
ÖLFLEX® SERVO 700, 700 CY, 2YSLICY, 720, 730, 730 CY,
UNITRONIC® 100, EB, 9YSLICY

ÖLFLEX® FD 90, FD 90 CY, ÖLFLEX® 140, 140 CY,
ÖLFLEX® 140, 140 CY, 150, 150 QUATTRO, 191, 191 CY,
ÖLFLEX® FD 891/891 CY, Tray II, ÖLFLEX® SERVO 709 CY
ÖLFLEX® SERVO FD 781 CY, ÖLFLEX® CONTROL TM/TM CY,
SERVO cables as per SEW, SIEMENS FX 5008 Standard

ÖLFLEX® CLASSIC 110 SY, ÖLFLEX® CLASSIC 100 CY,
ÖLFLEX® CLASSIC 110 SY, 110 CY

ÖLFLEX® CLASSIC 400 P, 400 CP, 415 CP, 440 P,
440 CP, 450 P, 500 P, 540 CP, 540 P, 550 P,
ÖLFLEX® SERVO FD 750, 755, 755 CP, 760, 770, 785,
790 CP, 795 P/CP, CLASSIC 810 P, 810 CP, 855 P, 855 CP,
ÖLFLEX® FD 891 P, 891 CP, ÖLFLEX® Robot 900, F1
UNITRONIC® FD P, ÖLFLEX® CRANE PUR, UNIRONIC® LiYD 11Y,
UNITRONIC® FD CP, UNITRONIC® FD CP (TP), HITRONIC® POF
with PUR sheath, UNITRONIC® FD plus types, UNITRONIC® PUR
SERVO cable as per SIEMENS FX7; FX8 PLUS Standard

ÖLFLEX® CRANE, round and flat

ÖLFLEX® LIFT T, LIFT S, ÖLFLEX® CRANE 2S,

ÖLFLEX® LIFT F, ÖLFLEX® SF,
LiFY single core

ÖLFLEX® HEAT 105

ÖLFLEX® HEAT 180

ÖLFLEX® HEAT 205/260

Inorganic chemicals

Alums, cold-saturated concentration	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Aluminium salts, any concentration	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Ammonia, aqueous, 10% concentration	⊗	⊗	⊗			⊗	⊗	⊗
Ammonium acetate, aqueous, any concentration	⊗	⊗	⊗			⊗	⊗	⊗
Ammonium carbonate, aqueous, any concentration	⊗	⊗	⊗			⊗	⊗	⊗
Ammonium chloride, aqueous, any concentration	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Barium salts, any concentration	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Boric acid, aqueous	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Calcium chloride, aqueous, cold-saturated concentration	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Calcium nitrate, aqueous, cold-saturated concentration	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Chromium salts, aqueous, cold-saturated concentration	⊗	⊗	⊗			⊗	⊗	⊗
Potassium carbonate, aqueous (potash)	⊗	⊗	⊗			⊗	⊗	⊗
Potassium chlorate, aqueous, cold-saturated concentration	⊗	⊗	⊗			⊗	⊗	⊗
Potassium chloride, aqueous, cold-saturated concentration	⊗	⊗	⊗			⊗	⊗	⊗
Potassium dichromate, aqueous	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Potassium iodide, aqueous	⊗	⊗	⊗			⊗	⊗	⊗
Potassium nitrate, aqueous, cold-saturated concentration	⊗	⊗	⊗			⊗	⊗	⊗
Potassium permanganate, aqueous	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Potassium sulphate, aqueous	⊗	⊗	⊗			⊗	⊗	⊗
Copper salts, aqueous, cold-saturated concentration	⊗	⊗	⊗			⊗	⊗	⊗
Magnesium salts, aqueous, cold-saturated concentration	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Sodium bicarbonate, aqueous (natron)	⊗	⊗	⊗			⊗	⊗	⊗
Sodium bisulphite, aqueous	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Sodium chloride, aqueous (table salt)	⊗	⊗	⊗			⊗	⊗	⊗
Sodium thiosulphate, aqueous (fixing salt)	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Nickel salts, aqueous, cold-saturated concentration	⊗	⊗	⊗			⊗	⊗	⊗
Phosphoric acid, 50% concentration	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Mercury, 100% concentration	⊗	⊗	⊗			⊗	⊗	⊗
Mercury salts, aqueous, cold-saturated concentration	⊗	⊗	⊗			⊗	⊗	⊗
Nitric acid, 30% concentration	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Hydrochloric acid, concentrated	⊗	⊗	⊗		⊗	⊗	⊗	⊗
Sulphur, 100% concentration	⊗	⊗	⊗			⊗	⊗	⊗
Sulphur dioxide, gaseous	⊗	⊗	⊗			⊗	⊗	⊗
Carbon disulphide	⊗	⊗	⊗			⊗	⊗	⊗
Hydrogen sulphide	⊗	⊗	⊗			⊗	⊗	⊗
Sea water	⊗	⊗	⊗			⊗	⊗	⊗
Silver salts, aqueous	⊗	⊗	⊗			⊗	⊗	⊗
Hydrogen peroxide, 3% concentration	⊗	⊗	⊗			⊗	⊗	⊗
Zinc salts, aqueous	⊗	⊗	⊗			⊗	⊗	⊗
Tin(II) chloride	⊗	⊗	⊗			⊗	⊗	⊗


Organic chemicals

Ethanol, 100% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Formic acid, 30% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Petrol	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Succinic acid, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Acetic acid, 20% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Hydraulic oil	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Isopropanol, 100% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Machinery oil	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Methanol, 100% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Oxalic acid, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Cutting oil	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Plant-based oils + fats	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Tartaric acids, aqueous	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Citric acid	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

⊗ no or slight reaction = good resistance
 ⊗ slight to moderate reaction = moderate resistance
 ⊗ moderate to strong reaction = low/no resistance

Whilst this information is accurate to the best of our knowledge and experience, it must be treated as a non-binding guideline only. In many cases, tests must be carried out under working conditions to reach a definitive conclusion.

T1: chemical resistance of cables

All data is for a temperature of +20 °C		Cable designations									
	Halogen-free cables UNITRONIC® H-(ST)H, NHXMH ÖLFLEX® 120 H, 120 CH, 130 H, 135 CH, 130 H BK 0.6/1 KV, 135 CH BK 0.6/1 KV, ÖLFLEX® FD 820 H	HITRONIC® fibre-optic cables	UNITRONIC® 100 CY, LIYCY twisted pair, LI2YCY(P), LI2YCY PIMF, UNITRONIC® computer cables, LAN UNITRONIC® LIY, LIYCY, UNITRONIC® FD CY	ÖLFLEX® FD CLASSIC 810, 810 CY UNITRONIC® LIYCY, LIYCY(TP), UNITRONIC® FD, FD CY, HITRONIC® POF with PVC sheath	J-Y(ST); JE-Y(ST); J-Y; JE-Y	Coaxial cables (PE) A-2Y(L)2Y A-2YF(L)2Y, HITRONIC® with PE sheath	ESUY copper earthing cable, X00V3-D ÖLFLEX® CRANE NSHTÖU; NSGAFÖU; H01N2-D; ÖLFLEX® CRANE VS; H05RN-F; H07RN-F; H07RN8-F	LIY single cores, H05V-K, H07V-K, LIY; Multi-Standard SC 1; Multi-Standard SC 2.1; Multi-Standard SC 2.2	H05RR-F	ÖLFLEX® ROBUST 200, 210, 215 C ÖLFLEX® FD ROBUST, FD ROBUST C	

Inorganic chemicals

Alums, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Aluminium salts, any concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Ammonia, aqueous, 10% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Ammonium acetate, aqueous, any concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Ammonium carbonate, aqueous, any concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Ammonium chloride, aqueous, any concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Barium salts, any concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Boric acid, aqueous	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Calcium chloride, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Calcium nitrate, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Chromium salts, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Potassium carbonate, aqueous (potash)	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Potassium chlorate, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Potassium chloride, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Potassium dichromate, aqueous	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Potassium iodide, aqueous	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Potassium nitrate, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Potassium permanganate, aqueous	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Potassium sulphate, aqueous	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Copper salts, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Magnesium salts, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Sodium bicarbonate, aqueous (natron)	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Sodium bisulphite, aqueous	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Sodium chloride, aqueous (table salt)	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Sodium thiosulphate, aqueous (fixing salt)	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Nickel salts, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Phosphoric acid, 50% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Mercury, 100% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Mercury salts, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Nitric acid, 30% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Hydrochloric acid, concentrated	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Sulphur, 100% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Sulphur dioxide, gaseous	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Carbon disulphide	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Hydrogen sulphide	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Sea water	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Silver salts, aqueous	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Hydrogen peroxide, 3% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Zinc salts, aqueous	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Tin(II) chloride	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

Organic chemicals

Ethanol, 100% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Formic acid, 30% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Petrol	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Succinic acid, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Acetic acid, 20% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Hydraulic oil	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Isopropanol, 100% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Machinery oil	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Methanol, 100% concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Oxalic acid, aqueous, cold-saturated concentration	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Cutting oil	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Plant-based oils + fats	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Tartaric acids, aqueous	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Citric acid	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

⊗ no or slight reaction = good resistance
 ⊗ slight to moderate reaction = moderate resistance
 ⊗ moderate to strong reaction = low/no resistance

Whilst this information is accurate to the best of our knowledge and experience, it must be treated as a non-binding guideline only. In many cases, tests must be carried out under working conditions to reach a definitive conclusion.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

T2 Technical tables

T2: assembly guidelines



PROFIBUS (UNITRONIC® BUS PB) and Industrial Ethernet cables (ETHERLINE®)

- Use only cables that have been designed for the relevant type of application (fixed installation, flexible or highly flexible application, torsional load, cable trailer systems, routing outdoors/underground). These cables have a specific design and have undergone the corresponding testing.
- For PROFINET, a distinction is made between type A (fixed installation, solid conductor), type B (flexible applications, e.g. 7-wire braided conductor) and type C (highly flexible applications, e.g. 19-wire braided conductor). As a rule, the conductor cross-section for PROFINET is AWG 22.
- We recommend routing different cable categories (e.g. for the network power supply, auxiliary power supply, data network cables and sensitive cables for measurement) as separate bundles in a system.
- Ensure there is a minimum clearance of 10 cm between cables used for power applications and data network cables. Alternatively, fit a metallic partition between the two, or route the data network cable in a metal pipe. If this is not possible, use separate cable carrier systems.
- Cables must always cross one another at an angle of 90°.
- Ground the screening of all cables running into a control cabinet at the entry to the control cabinet.
- We recommend the use of fibre-optic cables when installing cables outdoors. Use only approved outdoor cables. Observe all warning signs (power lines, gas pipes etc.).
- Always route backup cables along a separate path to ensure they remain undamaged, should damage occur to the main cable.
- Protect copper and fibre-optic cables located outside cable carrier systems by routing them through plastic pipes (or through metal pipes if subject to high mechanical loads).
- Replace any cables that have been overloaded or damaged.
- Observe the temperature range for the cables. Deviations from these temperatures will result in a lower mechanical and electrical cable rating and will damage the cable.
- Data network cables (Cu + fibre-optic cables) must only be subjected to a defined tensile load in order to maintain the transmission characteristics. For this reason, a strain relief must also be used.
- Applications involving torsion require a special cable design, as do cables for drag chains and cable trailer systems. These cables cannot be swapped.
- For drag chain cables, it is imperative that the minimum bending radius is complied with and that this does not fall below the prescribed values, otherwise the cable may be damaged and there is a risk of system failure.
- When unreeling cables from cable drums, make sure the cable does not grind against any objects. Likewise, make sure the cable is not pulled over sharp edges.
- For Cu cables, implement an equipotential bonding concept and ensure a distinction is made between hazardous (ex) and non-hazardous areas.
- Electrical, magnetic and electromagnetic fields affect signal transmission and may disrupt electronic components. "Electromagnetic compatibility" (EMC) is now a basic requirement to be fulfilled during installation. As such, include all metal system parts in the equipotential bonding concept and use only screened cables and connectors, or alternatively use fibre-optic cables and fibre-optic connectors that are resistant to electromagnetic interference.
- Recommendation: a detailed "Planning and Installation Guide" for PROFIBUS and/or PROFINET is available from the PROFIBUS User Organisation (PNO) in Karlsruhe, Germany.

Website: www.profibus.com

E-mail: info@profibus.com



ÖLFLEX® FD and UNITRONIC® FD cables in power chains

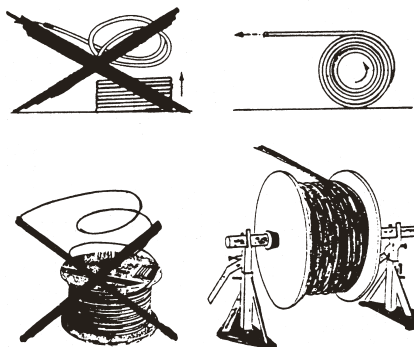
1. Power chains must be selected in line with the requirements for the necessary cables.

PLEASE NOTE: If possible, we recommend avoiding a multi-layer cable configuration, i.e. > 25 cores, and instead distributing the number required amongst several cables.

2. The values for the minimum permissible bending radii of the cables must not fall below the prescribed values (stated in the Technical Data of this catalogue as the bending radius for flexible use).

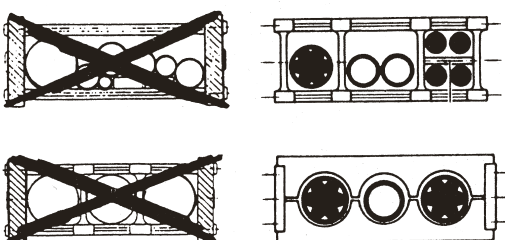
3. The cables must be free of twists when laid out in the power chain. As such, never pull a cable overhead from drums and coils resting on their side, but rather unroll the cables from the drum or the coil and lay them out or suspend them, if necessary. We recommend only taking cables to be used for power chain applications directly from the drums.

PLEASE NOTE: Due to the manufacturing process, the marking on the cables runs in a gentle spiral round the cables. As such, it cannot be used as an indicator of whether the cable is free of twists. When the cables are drawn in, the chain should be laid out longitudinally. It can then be brought into the operating position once the cables are in position.



4. The cables must lie loosely next to each another in the cable stays. As far as possible they should be arranged individually, divided by separating pins or placed within individual holders in the neutral zone of the chain. The free space for the cables in the chain stay must be at least 10% of the cable diameter. Avoid arranging the cables above one another without the use of separating pins.

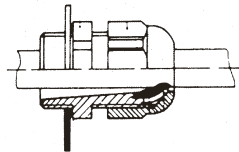
PLEASE NOTE: If the chain configuration is suspended vertically, additional free space must be provided in terms of the stay height, as the cables are extended during operation. After brief periods of operation, check the length adjustment of the cables and correct if necessary.



5. The cables **must not be secured or bound together in the chain.**

6. The cable should be secured at both ends of the chain. For long drag chains where the return side comes to lie on the carrying side, only secure the cable at the driver end. Under no circumstances may the cable bending include the fastening points.

The distance between the end point of the bending movement and the fastening must be as large as possible. For ÖLFLEX® SERVO FD 750 P, 760 CP and UNITRONIC® FD, a minimum of 20 x the cable diameter applies. For ÖLFLEX® FD, ÖLFLEX® FD CLASSIC, ÖLFLEX® SERVO FD 755 P – 795 P and ÖLFLEX® FD ROBUST, a minimum of 10 x the cable diameter applies.



Tighten the SKINTOP® screw connection by hand only (without tools). **Avoid crushing or pinching the cable.**

7. Make sure that cables in the bending section have complete freedom of movement, i.e. there must be no forced guidance, so that the cables can still move relative to one another and to the chain. We recommend checking the position of the cable after a brief period of operation. This check must be carried out after the thrust and pull movements.



8. If a chain breaks, also replace the cables as damage caused by excess stretching cannot be ruled out.
9. If, for a horizontal configuration, the return side lies against and slides along the carrying side, it is particularly important that the weight of the cables is distributed symmetrically throughout the chain, in order to safeguard the service life of the entire configuration. If it is not, weight exerted on one side will cause the return side to twist or tilt and will prevent a level, parallel movement along the carrying side. Failure to comply with this instruction may substantially reduce the service life of the drag chain configuration as a whole.

10. The power chain must be selected, assembled, maintained and repaired in compliance with the currently applicable guidelines specified by the chain manufacturer, in line with the intended application. For critical applications, for example where high acceleration speeds are involved (> 10 m/s²), we recommend that you consult our system specialists as early on as possible, or take advantage of the expertise of the chain manufacturer.

T4 Technical tables

T4: assembly guidelines



ÖLFLEX® CRANE NSHTÖU, ÖLFLEX® CRANE VS (N)SHTÖU and ÖLFLEX® CRANE PUR

1. The delivery drum must be transported to (or as close as possible to) the installation location. If possible, avoid rolling the drum unnecessarily. If it is not possible to transport the delivery drum to the system, we recommend unreeling the cable from the drum using guide pulleys, together with a drag rope and cable grip.

2. To unreel the cable, the drum must be mounted such that it can rotate, and the cable must only be unreeled from the top. When doing so, the cable must also be stretched out straight, and must not be deflected or pulled over any edges. During the unreeling process, the cable temperature must not be less than + 5 °C (standard reference from VDE 0298).

3. The entire length of cable to be assembled must be laid out in full prior to installation. Avoid rewinding the cable from the shipping drum onto the unit drum (please see chapter 4). When laying the cable, avoid S-shaped bends or other similar deflections.



4. The cable must be free of twists when wound on the unit drum. Likewise, the cable must not be twisted when connecting and fastening it to the feed-in point. The core layer structure of windable ÖLFLEX® CRANE cables has an “S”-shaped core stranding design. Depending on the position of the cable attachment side or feed-in point on the motor-driven drum, we therefore strongly recommend that you ensure the cable is wound onto the unit drum in the correct direction, as shown in the figure below:



5. If the feed-in point is passed over during operation, use a compensating pulley with an appropriate diameter carrying 1 to 2 cable windings. If the feed-in point is underground below the surface, fit a deflection funnel to the compensating pulley.

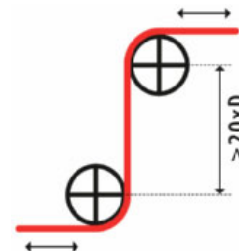
6. To prevent the cable being crushed, it is imperative that sufficiently sized clamps or cable support grips are used to secure the cable to the end of the travel length (length $\geq 4 \times D$). The length of cable left unreeled before the fastening point must be at least $40 \times D$, however, we also recommend the use of a compensating pulley here.

7. If the cable is fully unreeled and the maximum travel distance has been reached, at least 2 cable windings must remain on the unit drum.

8. The inner bending diameter for ÖLFLEX® CRANE NSHTÖU, on cables with an outer diameter of up to 21.5 mm, must not be less than 10 times the cable diameter, and 12.5 times for cables with larger outer diameters. For ÖLFLEX® CRANE VS (N) SHTÖU, the inner bending diameter must generally be at least

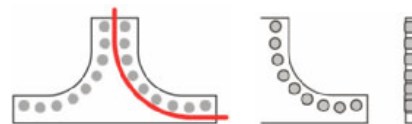
15 times the cable diameter. For ÖLFLEX® CRANE PUR, the inner bending diameter must not be less than 15 times the cable diameter. The minimum bending radius can be found on the relevant catalogue page or the product data sheet.

9. Avoid “S”-shaped bends in the cable. However, if the configuration involved renders this impossible, the space between the two deflection pulley axes must be at least 20 times the cable diameter for cables with an outer diameter of up to 21.5 mm, and at least 25 times for cables with larger outer diameters.



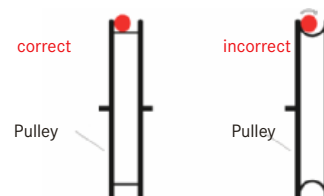
10. The permissible reeling speed must not exceed $v = 2 \text{ m/sec}$ at an acceleration of up to $a = 0.4 \text{ m/sec}^2$.

11. The static continuous tensile load must not exceed 15 N/mm^2 of the total copper cross-section, and the dynamic peak tensile load may not exceed 25 N/mm^2 . For cables with very large outer diameters, we recommend using guide pulleys to minimise friction on the outer sheath when changing direction.



The inner contact surface of the pulley must not have a concave shape in order to prevent the cable twisting, which could be caused by extensive contact between the sheath and the inside of the pulley.

To ensure that the cable runs smoothly, the inner width of the guiding groove must be 10 to 15 % larger than the cable outer diameter.



12. The actual current rating (I) in continuous operation depends on:

- the conductor cross-section (I_{max})
- the ambient temperature (f_1)
- the amount of cable reeled onto the drum (f_2)

The maximum permissible load that can be exerted on the installed cable is based on the following formula:

$$I = I_{\text{max}} \times f_1 \times f_2$$

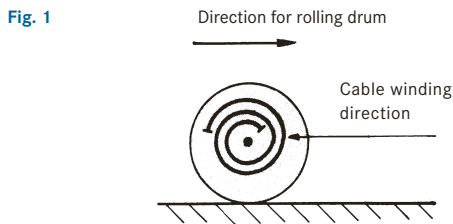
13. These cables meet the requirements stipulated by VDE 0250. Any loads going beyond those specified will reduce the service life of the cables.



Lift/elevator control cables – ÖLFLEX® LIFT, ÖLFLEX® LIFT T, ÖLFLEX® LIFT S

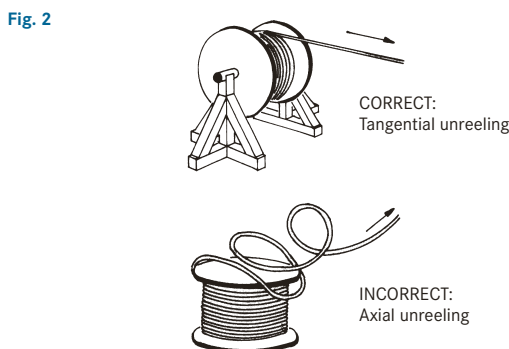
A General information

1. The cables must be free of twists when being installed, and this should be done at temperatures of at least +5 °C. VDE 0298-4/ Lapp table T12, column C applies for the current rating values.
2. The inner bending radius of the cable must not be less than 20 times the cable outer diameter.
3. The maximum suspension length depends on the supporting element in the cable in each case (see the technical data sheets), and may only be exceeded by max. 10 % of the specified value.
4. The delivery drum must be transported to (or as close as possible to) the installation location. If possible, avoid rolling the drum. If the drum must be rolled, only move the drum in the specified direction (see fig. 1).



B Suspending the cables

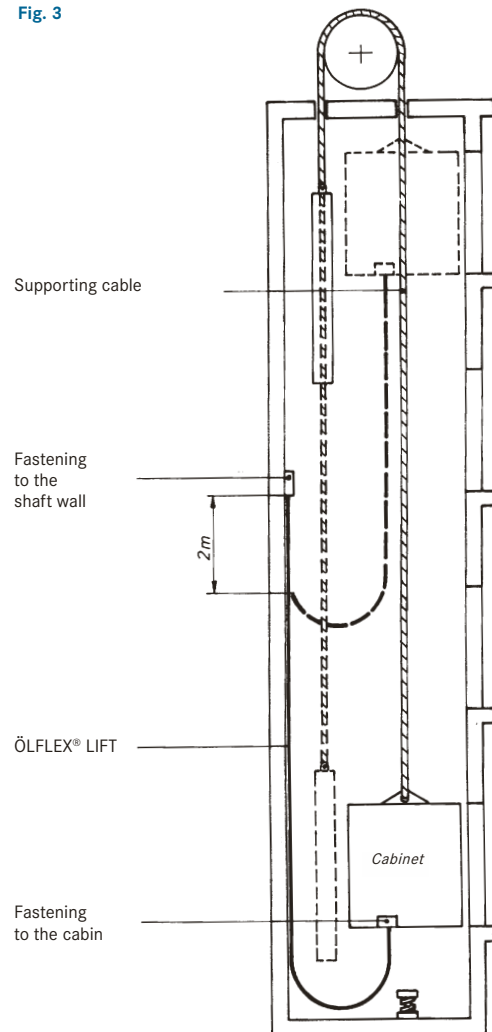
1. When pulling the cables into the shaft, unreel them tangentially from the drum. Unreeling the cable axially from the drum will result in the cable twisting and will affect the core stranding, which may in turn cause malfunctions (see fig. 2).
2. To ensure the cable is fitted without twists, allow the cable to briefly hang freely in the shaft. The best way to do this is to pull the control cable into the lift shaft from the bottom of the shaft.
3. The gap between the lift cabin and bottom of the shaft must be sufficiently large, and must be used in full for the cable loop height (see fig. 3).



C General information

1. It is essential that sufficiently large clamps are used to secure the cables (e.g. Lapp cable wedge clamps type EKK or DKK). For suspension lengths greater than 50 m, the supporting element must also be damped separately.
2. The fastening point on the shaft wall must be at least 2 m above the centre of the travel distance (see fig. 3).
3. If the cable does not run smoothly, i.e. if the cable leaves the max. gradient line during operation, rotate the control cable slightly at one of the fastening points until the cable runs smoothly again.
4. If several control cables need to be installed for the lift unit, for technical reasons we recommend suspending the individual cables such that the height of the various loops differs by approx. 15 cm (stepped suspension).

Fig. 3



T6 Technical tables

T6: type designations



Type designations for control cables and harmonised cables (excerpts)

Control cables

□ □ □ □ □ □ □ x □
1 2 3 4 5 6 7 8

1. Basic type

N VDE standard
(N) or X in line with VDE

2. Insulating material

Y Thermoplastic resins
X Cross-linked thermoplastic resins
G Elastomers
HX Halogen-free materials

3. Cable designation

A Core cable
D Solid wire
AF Fine-wire core cable
F Socket core
L Fluorescent tube cable
LH Connecting cable,
light mechanical loads
MH Connecting cable,
moderate mechanical loads
SH Connecting cable,
heavy mechanical loads
SSH Connecting cable for special loads
SL Control cable/welding cable
S Control cable
LS Light control cable
FL Flat cable
Si Silicone cable
Z Twin cable
GL Glass fibre
Li Braided conductor as per VDE 0812
LiF Braided conductor as per VDE 0812,
extra-fine wire

4. Special features

T Supporting element
Ö Enhanced oil resistance
U Flame-retardant
w Heat-resistant, weather-resistant
FE Insulation retained for a limited time
C Screening braid
D Screening as Cu wire wrapping
S Steel wire braiding as mech. protection

5. Sheaths

As point 2.
"Insulating material" P/PUR polyurethane

6. Protective conductor

-O Without protective conductor
-J With protective conductor

7. Number of cores

... number of cores

8. Conductor cross-section

Figures in mm²

Harmonised cables

□ □ □ □ □ - □ □ □ □
1 2 3 4 5 6 7 8 9

1. Basic type

H Harmonised type
A National type

2. Nominal voltage

01 100/100 volts
03 300/300 volts
05 300/500 volts
07 450/750 volts

3. Insulating material

V PVC
V2 PVC +90 °C
V3 PVC flexible at cold temperatures
B Ethylene propylene rubber
E PE polyethylene
X XPE, cross-linked PE
R Rubber
S Silicone rubber

4. Outer/inner sheath material

V PVC
V2 PVC +90 °C
V3 PVC flexible at cold temperatures
V5 PVC with enhanced oil resistance
R Rubber
N Chloroprene rubber
Q Polyurethane
J Glass fibre braiding
T Textile braiding

5. Special features

C4 Copper wire screen braiding
H Flat cable, divisible
H2 Flat cable, not divisible
H6 Flat cable, not divisible,
for lifts
H8 Helical/spiral cable

6. Conductor type

U Single-wire
R Multi-wire
K Fine-wire (fixed installation)
F Fine-wire (flexible installation)
H Extra-fine wire
Y Tinsel wire
D Fine-wire conductor
for welding cable
E Extra-fine wire conductor
for welding cable

7. Number of cores

... number of cores

8. Protective conductor

X Without protective conductor
G With protective conductor

9. Conductor cross-section

Figures in mm²

Telecommunications cables

□ □ - □ □ □ □ □ x □ x □ □ □ □
1 2 3 4 5 6 7 8 9 10

1. Basic type

A- Outdoor cable
G- Mining cable
J- Installation cable
Li Hose, flexible cable
S- Jumper cable

2. Additional designation

B Lightning protection design
J Induction protection
E Electronics

3. Insulating material

Y PVC 11Y PUR
2Y Polyethylene
O2Y Cellular PE 9Y PP
5Y PTFE
6Y FEP
7Y ETFE
P Paper

4. Special features

F Petroleum jelly filling
L Aluminium sheath
LD Corrugated aluminium sheath
(L) Aluminium strip
(ST) Metal foil screening
(K) Copper strip screening
C Copper screen braiding
(Z) Steel wire braiding
W Corrugated steel sheath
M Lead sheath
Mz Special lead sheath
b Armouring
c Jute sleeve + ground
E Ground layer + strip

5. Sheathing

(see point 3. "Insulating material")

6. Number of elements

... number of stranding elements

7. Stranding element

1 Single core
2 Pair

8. Conductor diameter

... in mm

9. Stranding element

F Star quad (railway)
St Star quad (phantom)
StI Star quad (trunk cable)
StII Star quad (local cable)
TF Star quad for TF
S Signal cable (railway)
PiMF Screened pair

10. Stranding type

Lg Twisted into layers
Bd Twisted into bundles

EXAMPLE: NSHTÖU 24G 1.5

ÖLFLEX® CRANE NSHTÖU cable, 24-core,
with protective cond., cross-section: 1.5 mm²

EXAMPLE: H05 VV-F 3G 1.5

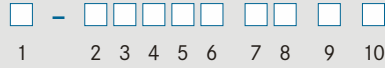
Medium PVC hose, 3-core,
with protective cond., cross-section: 1.5 mm²

EXAMPLE: A2Y(L)2Y 6 x 2 x 0.8 Bd

Telephone cable for local network
with PE insulation and layered sheath

Type designations for telecommunications cables and fibre-optic cables

Fibre-optic cables



1. Basic type

- A Outdoor cable
- AT Outdoor cable, divisible
- J Indoor cable
- J/A or U Indoor/outdoor cable, universal cable

2. Fibres

- B Loose tube, unfilled
- D Loose tube, filled
- V Tight-buffered fibres

3. Design elements

- F Petroleum jelly filling
- Q Swelling tape

4. Further design elements

- S Metal element in cable core

5. Sheath

- 2Y PE sheath
- PUR PUR sheath
- H Halogen-free sheath
- (ZM) With metallic strain relief elements
- (ZN) With non-metallic strain relief elements
- (ZN)2Y PE sheath with non-metallic strain relief elements

6. Armouring

- B Armouring
- B2Y Armouring with PE casing
- (BN) Glass yarn armouring
- (SG) Steel sheath
- (SR) Corrugated steel sheath
- (SR)2Y Corrugated steel sheath with PE casing

7. Number of fibres

Number of fibres

8. Fibre type

- E Monomode fibre glass/glass (SM GOF)
- G Gradient fibre glass/glass (MM GOF)
- K Stepped fibre glass/plastic (PCF)
- P Polymer optical fibre/plastic (POF)

9. Core diameter/fibre sheath diameter

- 50/125 Multimode glass fibre
- 62,5/125 Multimode glass fibre
- 9/125 Monomode glass fibre
- 200/230 Plastic-coated glass fibre
- 980/1000 Polymer optical fibre

10. Category: fibre quality

- OM3 For 50/125 OM3 multimode fibres
- OM2 For 50/125 OM2 multimode fibres
- OM1 For 62.5/125 OM1 multimode fibres
- OS2 For 9/125 OS2 monomode fibres (G 652D)

EXAMPLE 1: A-DQ(ZN)(SR)2Y 12G 50/125 OM3

Outdoor cable with corrugated steel sheath, central loose tube, non-metallic strain relief made of glass yarn, 12 fibres, 50/125 µm OM3 multimode fibres

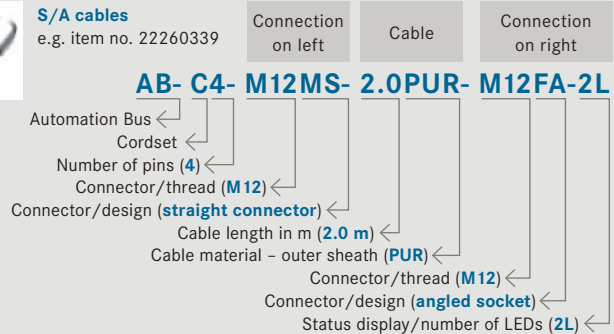
EXAMPLE 2: J-V2Y(ZN)11Y 2P 980/1000

Plastic fibre-optic cable, two-fibre (duplex), indoor cable with PE inner sheath, non-metallic strain relief, PUR outer sheath

Type designations for UNITRONIC® field bus



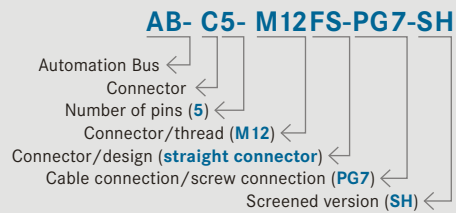
S/A cables
 e.g. item no. 22260339



- MS - straight connector
- MA - angled connector
- FS - straight socket
- FA - angled socket
- M8, M12, M16, M23 - thread
- L - status display/LEDs
- SH - screened version
- VA - stainless steel knurl
- M12Y - M12 Y connector
- B - bridged
- 3-, 4-, 5-, 8-, .. number of pins
- A, AD, B, BI, C, CI - valve connector type
- S - valve connector with Z diode
- SV - valve connector with varistor



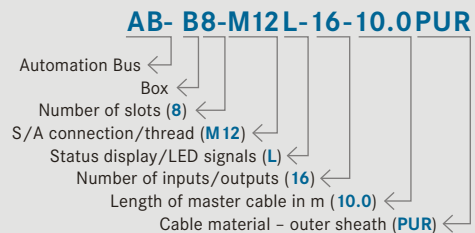
Ready-made connector e.g. item no. 22260127



- MS - straight connector
- MA - angled connector
- FS - straight socket
- FA - angled socket
- P - piercing connection
- SH - screened version
- M8, M12, M16, M23 - thread
- 3-, 4-, 5-, 8-, .. number of pins
- PG7, PG9, PG11, PG13 - cable connection
- F0.34 (fast connection, max. 0.34 mm² cond. cross-sec.)
- F0.75 (fast connection, max. 0.75 mm² cond. cross-sec.)
- M16-0.5 (M16 flush-type conn. with 0.5 m PUR strand)
- PG9-0.5 (PG9 flush-type conn. with 0.5 m PUR strand)
- DSI - flush-type connector (rear wall mounting)
- PO - flush-type connector (can be positioned)



S/A passive distributor box e.g. item no. 22260025



INFO: S/A box with double assignment → $\frac{\text{(number of inputs/outputs)}}{\text{(number of slots)}} = 2$

- PUR - distributor box with perm. connected master cable (PUR)
- C - distributor box with master cable conn. (pluggable screw connection)
- M8L - distributor box with M8 slots and LED signals
- M16 - distributor box with M16 master cable conn.
- M12 - distributor box with M12 master cable conn.

Further abbreviations:

- AB-PC - Automation Bus Power Cable
- AB-PB - Automation Bus PROFIBUS
- AB-DN - Automation Bus DeviceNet
- AB-CAN - Automation Bus CAN
- AB-ASI - Automation Bus AS-Interface
- AB-ASI-J - AS-Interface distributor
- DI - Digital Inputs
- DO - Digital Outputs
- R - Relay outputs

T7 Technical tables

T7: core ID code for ÖLFLEX® cables



Colour code for ÖLFLEX® cables

The colour code applies to the following cables starting from 6 cores: ÖLFLEX® CLASSIC 100, ÖLFLEX® CLASSIC 100 CY, ÖLFLEX® CLASSIC 100 SY and ÖLFLEX® CLASSIC 100 BK Power 0.6/1 KV. It contains colours and colour combinations for up to 102 cores, and consists of 11 basic colours.

The different variations of the basic colours are achieved by using one or two coloured stripes, meaning each core can be easily distinguished from the rest. The VDE colour code applies for cables with up to 5 cores (inclusive). Please also see T9. The cores are counted from the inside to the outside, and the green/yellow core is always the last core in the outer layer.

<p>Basic colours</p> <ul style="list-style-type: none"> 0 green/yellow 1 white 2 black 3 blue 4 brown 5 grey 6 red 7 violet 8 pink 9 orange 10 transparent 11 beige <p>Basic colours with white stripe</p> <ul style="list-style-type: none"> 12 black/white 13 blue/white 14 brown/white 15 grey/white 16 red/white 17 violet/white 18 pink/white 19 orange/white 20 transparent/white 21 beige/white <p>Basic colours with black stripe</p> <ul style="list-style-type: none"> 22 blue/black 23 brown/black 24 grey/black 25 red/black 26 violet/black 27 pink/black 28 orange/black 29 transparent/black 30 beige/black <p>Basic colours with blue stripe</p> <ul style="list-style-type: none"> 31 brown/blue 32 grey/blue 33 red/blue 34 pink/blue 35 orange/blue 36 transparent/blue 37 beige/blue 	<p>Basic colours with brown stripe</p> <ul style="list-style-type: none"> 38 grey/brown 39 red/brown 40 violet/brown 41 pink/brown 42 orange/brown 43 transparent/brown 44 beige/brown <p>Basic colours with grey stripe</p> <ul style="list-style-type: none"> 45 red/grey 46 violet/grey 47 pink/grey 48 orange/grey 49 transparent/grey 50 beige/grey <p>Basic colours with red stripe</p> <ul style="list-style-type: none"> 51 orange/red 52 transparent/red 53 beige/red <p>Basic colours with violet stripe</p> <ul style="list-style-type: none"> 54 pink/violet 55 orange/violet 56 transparent/violet 57 beige/violet <p>Basic colours with pink stripe</p> <ul style="list-style-type: none"> 58 transparent/pink 59 beige/pink <p>Basic colours with orange stripe</p> <ul style="list-style-type: none"> 60 transparent/orange 61 beige/orange <p>Basic colours with white/black stripes</p> <ul style="list-style-type: none"> 62 blue/white/black 63 brown/white/black 64 grey/white/black 65 red/white/black 66 violet/white/black 67 pink/white/black 68 orange/white/black 69 transp./white/black 70 beige/white/black 	<p>Basic colours with white/blue stripes</p> <ul style="list-style-type: none"> 71 brown/white/blue 72 grey/white/blue 73 red/white/blue 74 violet/white/blue 75 pink/white/blue 76 orange/white/blue 77 transp./white/blue 78 beige/white/blue <p>Basic colours with white/brown stripes</p> <ul style="list-style-type: none"> 79 grey/white/brown 80 red/white/brown 81 violet/white/brown 82 pink/white/brown 83 orange/white/brown 84 transp./white/brown 85 beige/white/brown <p>Basic colours with white/grey stripes</p> <ul style="list-style-type: none"> 86 red/white/grey 87 violet/white/grey 88 pink/white/grey 89 orange/white/grey 90 transp./white/grey 91 beige/white/grey <p>Basic colours with white/red stripes</p> <ul style="list-style-type: none"> 92 blue/white/red 93 brown/white/red 94 violet/white/red 95 pink/white/red 96 orange/white/red <p>Basic colours with white/violet stripes</p> <ul style="list-style-type: none"> 97 brown/white/violet 98 orange/white/violet <p>Basic colours with black/blue stripes</p> <ul style="list-style-type: none"> 99 brown/black/blue 100 grey/black/blue 101 red/black/blue
--	---	--



Colour code for UNITRONIC® 100 cables

It contains colours and colour combinations for up to 102 cores, and consists of 10 basic colours. The different variations of the basic colours are achieved by using one or two coloured stripes, or by ring marking, meaning each core can be easily distinguished from the rest. The cores are counted from the inside to the outside, and the green/yellow core is always the last core in the outer layer.

Basic colours

0	green/yellow	
1	black	
2	blue	
3	brown	
4	beige	
5	yellow	
6	green	
7	violet	
8	pink	
9	orange	
10	transparent	

Basic colours with white stripe

11	red/white	
12	blue/white	
13	yellow/white	
14	green/white	
15	violet/white	
16	orange/white	
17	brown/white	

Basic colours with red stripe

18	blue/red	
19	yellow/red	
20	green/red	
21	white/red	
22	orange/red	
23	brown/red	

Basic colours with black stripe

24	red/black	
25	blue/black	
26	yellow/black	
27	green/black	
28	violet/black	
29	white/black	
30	orange/black	
31	brown/black	

Basic colours with green stripe

32	red/green	
33	grey/green	
34	violet/green	
35	white/green	
36	orange/green	
37	brown/green	

Basic colours with yellow stripe

38	red/yellow	
39	blue/yellow	
40	violet/yellow	
41	white/yellow	
42	brown/yellow	

Basic colours with blue stripe

43	red/blue	
44	white/blue	
45	orange/blue	
46	brown/blue	

Basic colours with violet stripe

47	yellow/violet	
48	green/violet	
49	white/violet	
50	orange/violet	
51	brown/violet	

Basic colour: black, coloured stripe

52	black/white	
53	black/yellow	
54	black/red	
55	black/green	
56	black/blue	
57	black/violet	

Basic colour: grey, coloured stripe

58	grey/white	
59	grey/black	
60	grey/yellow	
61	grey/red	
62	grey/blue	
63	grey/violet	

Basic colours with grey stripe

64	red/grey	
65	blue/grey	
66	yellow/grey	
67	green/grey	
68	violet/grey	
69	white/grey	
70	orange/grey	

Basic colours with white/red stripes

71	blue/white/red	
72	yellow/white/red	
73	green/white/red	
74	brown/white/red	

Basic colours with white/black stripes

75	red/white/black	
76	blue/white/black	
77	yellow/white/black	
78	green/white/black	
79	violet/white/black	
80	orange/white/black	
81	brown/white/black	

Basic colours with white/green stripes

82	red/white/green	
83	yellow/white/green	
84	violet/white/green	
85	orange/white/green	
86	brown/white/green	

Basic colours with white/blue stripes

87	red/white/blue	
88	yellow/white/blue	
89	orange/white/blue	
90	brown/white/blue	

Basic colours with white/violet stripes

91	yellow/white/violet	
92	green/white/violet	
93	orange/white/violet	
94	brown/white/violet	

Basic colours with red/black stripes

95	blue/red/black	
96	yellow/red/black	
97	green/red/black	
98	white/red/black	
99	brown/red/black	

Basic colours with red/green stripes

100	yellow/red/green	
101	white/red/green	
102	orange/red/green	

T8 Technical tables

T8: international colour codes for thermoelectric and compensating cables

Thermopairs						
	DIN IEC 584	DIN 43710	ANSI MC 96.1	BS 4937	NF C 42-324	
Material	Designation		Designation		Designation	
⊕ ⊖	TEC	CC	TEC	CC	TEC	CC
T Cu - CuNi	TX		TX	TX	TX	TX
U Cu - CuNi		UX				
J Fe - CuNi	JX		JX	JX	JX	JX
L Fe - CuNi		LX				
E NiCr - CuNi	EX		EX	EX	EX	EX
K NiCr - Ni	KX		KX	KX	KX	KX
	KCA	KCA				WC
NiCr - Ni	KCB			VX	VC	VC
N NiCrSi - NiSi	NX NC					
R S PtRh13 - Pt PtRh10 - Pt	RCB SCB	RCB SCB	SX	SX	SC	SC
			BX		BC	BC

TEC = thermoelectric cables
CC = compensating cables

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX



VDE 0293-308/HD 308 S2
Core ID code for colour-coded low-voltage cables

For marking cores in multi- and several-core cables for use in electrical systems and distribution systems.
For the supply of permanently secured or portable supplies and for portable equipment cables. 3a and 4a: only suitable for specific applications.

Number of cores	Cables with protective conductor (code J or G)	Cables without protective conductor (code O or X)	Cables with concentric conductor
2	-	BU/BN	BU/BN
3	GNYE/BN/BU	BN/BK/GY	BN/BK/GY
3a	-	BU/BN/BK	BU/BN/BK
4	GNYE/BN/BK/GY	BU/BN/BK/GY	BU/BN/BK/GY
4a	GNYE/BU/BN/BK	-	-
5	GNYE/BU/BN/BK/GY	BU/BN/BK/GY/BK	BU/BN/BK/GY/BK
6 and above	GNYE/BK with printed numbers	BK with printed numbers	BK with printed numbers



Colour code for power cables as per VDE 0293 (old) – (colour codes are listed in IEC 60757)

For marking cores in multi- and several-core cables for connecting portable power consumers.

Number of cores	Cables with green/yellow core (harmonised)	Cables without green/yellow core (currently not yet harmonised)	Cables with concentric conductor
2	-	BU/BN	-
3	GNYE/BN/BU	BU/BN/BK	-
3	-	BU/BN/BK	-
4	GNYE/BK/BU/BN	BU/BN/BK/GY	-
5	GNYE/BK/BU/BN/BK	BU/BN/BK/GY/BK	-
6 and above	GNYE/further cores in BK with printed numbers, starting from the inside with 1, GNYE in the outer layer	BK with printed numbers	-

For marking cores in multi- and several-core cables and in multi-core cables for fixed installation.

Number of cores	Cables with green/yellow core (code -J-)	Cables without green/yellow core (code -O-)	Cables with concentric conductor
2	-	BK/BU	BK/BU
3	GNYE/BK/BU	BN/BU/BK	BK/BU/BN
3	-	BN/BK/BU	-
4	GNYE/BK/BU/BN	BK/BN/BU/BK	BK/BU/BN/BK
5	GNYE/BK/BU/BN/BK	BK/BN/BU/BK/BK	-
6 and above	GNYE/further cores in BK with printed numbers, starting from the inside with 1, GNYE in the outer layer	Cores in BK with printed numbers, starting from the inside with 1	Cores in BK with printed numbers, starting from the inside with 1

T9 Technical tables

T9: core ID code as per DIN colour code



DIN 47100/January 1988 – colour code for UNITRONIC® twisted pair

Each pair has an a-core and a b-core. The marking is repeated for the first time as from 23 pairs, and for the second time as from 45 pairs. The first colour is always the basic colour of the core, and the second colour is printed in rings.

Pair no.	Colour of a-core	Colour of b-core	Pair no.	Colour of a-core	Colour of b-core
1	white	brown	13	white/black	brown/black
2	green	yellow	14	grey/green	yellow/grey
3	grey	pink	15	pink/green	yellow/pink
4	blue	red	16	green/blue	yellow/blue
5	black	violet	17	green/red	yellow/red
6	grey/pink	red/blue	18	green/black	yellow/black
7	white/green	brown/green	19	grey/blue	pink/blue
8	white/yellow	yellow/brown	20	grey/red	pink/red
9	white/grey	grey/brown	21	grey/black	pink/black
10	white/pink	pink/brown	22	blue/black	red/black
11	white/blue	brown/blue	23-44	see 1-22	see 1-22
12	white/red	brown/red	45-66	see 1-22	see 1-22



DIN 47100 colour code (but differs from DIN as the colours are not repeated after the 44th core)

Exception: 4-core line, which has a sequence of white, yellow, brown, green.

Core no.	Colour	Core no.	Colour	Core no.	Colour	Core no.	Colour	Core no.	Colour
1	white	14	brown/green	27	grey/green	40	pink/red	53	white/grey/black
2	brown	15	white/yellow	28	yellow/grey	41	grey/black	54	grey/brown/black
3	green	16	yellow/brown	29	pink/green	42	pink/black	55	white/pink/black
4	yellow	17	white/grey	30	yellow/pink	43	blue/black	56	pink/brown/black
5	grey	18	grey/brown	31	green/blue	44	red/black	57	white/blue/black
6	pink	19	white/pink	32	yellow/blue	45	white/brown/black	58	brown/blue/black
7	blue	20	pink/brown	33	green/red	46	yellow/green/black	59	white/red/black
8	red	21	white/blue	34	yellow/red	47	grey/pink/black	60	brown/red/black
9	black	22	brown/blue	35	green/black	48	red/blue/black	61	black/white
10	violet	23	white/red	36	yellow/black	49	white/green/black		
11	grey/pink	24	brown/red	37	grey/blue	50	brown/green/black		
12	red/blue	25	white/black	38	pink/blue	51	white/yellow/black		
13	white/green	26	brown/black	39	grey/red	52	yellow/brown/black		



Colour code for UNITRONIC® 300 & 300 CY (20 – 16 AWG)

Core no.	Colour	Core no.	Colour	Core no.	Colour	Core no.	Colour	Core no.	Colour
1	black	11	pink	21	white/brown	31	white/black/grey	41	white/green/red
2	red	12	light brown	22	white/orange	32	white/black/violet	42	white/green/green
3	white	13	red/green	23	white/grey	33	white/black/black	43	white/green/blue
4	green	14	red/yellow	24	white/violet	34	white/red/black	44	white/green/brown
5	orange	15	red/black	25	white/black/red	35	white/red/red	45	white/green/violet
6	blue	16	white/black	26	white/black/green	36	white/red/green	46	white/blue/black
7	brown	17	white/red	27	white/black/yellow	37	white/red/blue	47	white/blue/red
8	yellow	18	white/green	28	white/black/blue	38	white/red/brown	48	white/blue/green
9	violet	19	white/yellow	29	white/black/brown	39	white/red/violet	49	white/blue/blue
10	grey	20	white/blue	30	white/black/orange	40	white/green/black	50	white/blue/brown



Colour code for UNITRONIC® 300 & 300 CY (24 – 22 AWG)

Core no.	Colour	Core no.	Colour	Core no.	Colour	Core no.	Colour	Core no.	Colour
1	black	11	white/black	21	white/black/red	31	white/brown/green	41	white/orange/yellow
2	brown	12	white/brown	22	white/black/orange	32	white/brown/blue	42	white/orange/green
3	red	13	white/red	23	white/black/yellow	33	white/brown/violet	43	white/orange/blue
4	orange	14	white/orange	24	white/black/green	34	white/brown/grey	44	white/orange/violet
5	yellow	15	white/yellow	25	white/black/blue	35	white/red/orange	45	white/orange/grey
6	green	16	white/green	26	white/black/violet	36	white/red/yellow	46	white/yellow/green
7	blue	17	white/blue	27	white/black/grey	37	white/red/green	47	white/yellow/blue
8	violet	18	white/violet	28	white/brown/red	38	white/red/blue	48	white/yellow/violet
9	grey	19	white/grey	29	white/brown/orange	39	white/red/violet	49	white/yellow/grey
10	white	20	white/black/brown	30	white/brown/yellow	40	white/red/grey	50	white/yellow/blue

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX



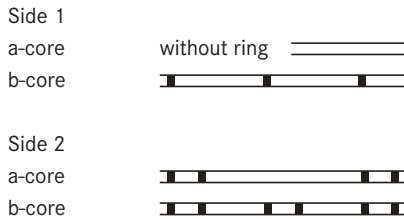
Core ID code as per VDE colour code for telephone cables

**VDE 0815 and VDE 0816
bundle stranding**

Colour code for cable types

J-2Y(ST)Y, A-2Y(L)2Y, A-2YF(L)2Y. . Bd

The cores are marked by rings.



Base colours of the core insulation for the 5 star quads of a bundle:

- Quad 1 red
- Quad 2 green
- Quad 3 grey
- Quad 4 yellow
- Quad 5 white

The bundles to be counted are marked with red helices.

VDE 0815

Colour code for

indoor telephone cables J-Y(ST)Y ... LG
(Pairs twisted in layers, counting inwards from the outside.)

a-core:
1st pair of each layer: red; for all other pairs: white

b-core:
blue, yellow, green, brown, black, repeated continuously

Exception:

The twin-pair installation cable is twisted into a star quad.

Side 1 (pair 1):
a-core: red
b-core: black

Side 2 (pair 2):
a-core: white
b-core: yellow

VDE 0815

Colour code for industrial electronics cables JE-...

Marking:

The pair cores for each bundle are identified by the base colours of the insulation sheath, which are repeated in the same sequence in each bundle.

Base colours of pairs:

Pair:	1	2	3	4
a-core:	blue	grey	green	white
b-core:	red	yellow	brown	black

The bundles are identified by the colours of the rings on the core insulation sheaths and the arrangement of the coloured rings in groups. The ring groups are located at intervals of approx. 60 mm.

On cables with more than 12 bundles, the 13th bundle and any subsequent bundles have coloured helices. When counting the bundles, start from the innermost layer.

Bundle	Ring colour	Ring group	Bundle helix
1	pink		-
2	pink		-
3	pink		-
4	pink		-
5	orange		-
6	orange		-
7	orange		-
8	orange		-
9	violet		-
10	violet		-
11	violet		-
12	violet		-
13	pink		blue
14	pink		blue
15	pink		blue
16	pink		blue
17	orange		red
18	orange		red
19	orange		red
20	orange		red

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES

APPENDIX

T11 Technical tables

T11: conductor resistances and strand structure (metric)



Conductor resistances and conductor stranding (metric)

Conductor resistances: from 0.5 mm² as per DIN EN 60228 (VDE 0295) for conductors made of soft-annealed copper and single and multi-core cables.

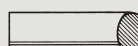
Nominal cross-section in mm ²	Conductor resistances at 20 °C for 1 km in Ω (max. value)			
	Made of wires with metal sheath		Made of bare wires	
	Class 2	Class 5 + 6	Class 2	Class 5 + 6
0.08		250.0		243.0
0.14		142.0		138.0
0.25		82.0		79.0
0.34		59.0		57.0
0.38		52.8		48.5
0.5	36.7	40.1	36.0	39.0
0.75	24.8	26.7	24.5	26.0
1	18.2	20.0	18.1	19.5
1.5	12.2	13.7	12.1	13.3
2.5	7.56	8.21	7.41	7.98
4	4.70	5.09	4.61	4.95
6	3.11	3.39	3.08	3.30
10	1.84	1.95	1.83	1.91
16	1.16	1.24	1.15	1.21
25	0.734	0.795	0.727	0.780
35	0.529	0.565	0.524	0.554
50	0.391	0.393	0.387	0.386
70	0.270	0.277	0.268	0.272
95	0.195	0.210	0.193	0.206
120	0.154	0.164	0.153	0.161
150	0.126	0.132	0.124	0.129
185	0.100	0.108	0.0991	0.106
240	0.0762	0.0817	0.0754	0.0801
300	0.0607	0.0654	0.0601	0.0641
400	0.0475		0.0470	
500	0.0369		0.0366	
630	0.0286		0.0283	
800	0.0224		0.0221	
1000	0.0177		0.0176	

Example conductor stranding (metric)

Cross-section in mm ²	Multi-wire conductor	Several-wire conductor	Fine-wire conductor	Extra-fine wire conductor			
0.14				~ 18 x 0.10	~ 18 x 0.1	~ 36 x 0.07	~ 72 x 0.05
0.25			~ 14 x 0.15	~ 32 x 0.10	~ 32 x 0.1	~ 65 x 0.07	~ 128 x 0.05
0.34		7 x 0.25	~ 19 x 0.15	~ 42 x 0.10	~ 42 x 0.1	~ 88 x 0.07	~ 174 x 0.05
0.38		7 x 0.27	~ 19 x 0.16	~ 19 x 0.16	~ 48 x 0.1	~ 100 x 0.07	~ 194 x 0.05
0.5	7 x 0.30	7 x 0.30	~ 16 x 0.20	~ 28 x 0.15	~ 64 x 0.1	~ 131 x 0.07	~ 256 x 0.05
0.75	7 x 0.37	7 x 0.37	~ 24 x 0.20	~ 42 x 0.15	~ 96 x 0.1	~ 195 x 0.07	~ 384 x 0.05
1.0	7 x 0.43	7 x 0.43	~ 32 x 0.20	~ 56 x 0.15	~ 128 x 0.1	~ 260 x 0.07	~ 512 x 0.05
1.5	7 x 0.52	7 x 0.52	~ 30 x 0.25	~ 84 x 0.15	~ 192 x 0.1	~ 392 x 0.07	~ 768 x 0.05
2.5	7 x 0.67	~ 19 x 0.41	~ 50 x 0.25	~ 140 x 0.15	~ 320 x 0.1	~ 651 x 0.07	~ 1280 x 0.05
4	7 x 0.85	~ 19 x 0.52	~ 56 x 0.30	~ 224 x 0.15	~ 512 x 0.1	~ 1040 x 0.07	
6	7 x 1.05	~ 19 x 0.64	~ 84 x 0.30	~ 192 x 0.20	~ 768 x 0.1	~ 1560 x 0.07	
10	7 x 1.35	~ 49 x 0.51	~ 80 x 0.40	~ 320 x 0.20	~ 1280 x 0.1	~ 2600 x 0.07	
16	7 x 1.70	~ 49 x 0.65	~ 128 x 0.40	~ 512 x 0.20	~ 2048 x 0.1		
25	7 x 2.13	~ 84 x 0.62	~ 200 x 0.40	~ 800 x 0.20	~ 3200 x 0.1		
35	7 x 2.52	~ 133 x 0.58	~ 280 x 0.40	~ 1120 x 0.20			
50	~ 19 x 1.83	~ 133 x 0.69	~ 400 x 0.40	~ 705 x 0.30			
70	~ 19 x 2.17	~ 189 x 0.69	~ 356 x 0.50	~ 990 x 0.30			
95	~ 19 x 2.52	~ 259 x 0.69	~ 485 x 0.50	~ 1340 x 0.30			
120	~ 37 x 2.03	~ 336 x 0.67	~ 614 x 0.50	~ 1690 x 0.30			
150	~ 37 x 2.27	~ 392 x 0.69	~ 765 x 0.50	~ 2123 x 0.30			
185	~ 37 x 2.52	~ 494 x 0.69	~ 944 x 0.50	~ 1470 x 0.40			
240	~ 37 x 2.87	~ 627 x 0.70	~ 1225 x 0.50	~ 1905 x 0.40			
300	~ 61 x 2.50	~ 790 x 0.70	~ 1530 x 0.50	~ 2385 x 0.40			
400	~ 61 x 2.89		~ 2035 x 0.50				
500	~ 61 x 3.23		~ 1768 x 0.60				
630	~ 91 x 2.97		~ 2286 x 0.60				

NOTE ON STANDARDS:

- For single-wire conductors... (class 1), please see DIN EN 60228 (VDE 0295), table 1
- For multi-wire conductors... (class 2), please see DIN EN 60228 (VDE 0295), table 2
- For fine-wire conductors... (class 5), please see DIN EN 60228 (VDE 0295), table 3
- For extra-fine wire conductors... (class 6), please see DIN EN 60228 (VDE 0295), table 4



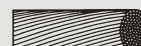
single-wire



multi-/several-wire



fine-wire



extra-fine wire

Table 12-1: current rating

For cables with a nominal voltage of up to 1000 V and for heat-resistant cables at an ambient temperature of +30 °C.

Cable category					
	A Single-core cables • Rubber insulation • PVC insulation • TPE insulation • Heat-resistant	B Multi-core cables for domestic/handheld equipment • Rubber insulation • PVC insulation • TPE insulation		C Multi-core cables excl. domestic/handheld equipment • Rubber insulation • PVC insulation • TPE insulation • Heat-resistant	D Multi-core rubber-sheathed cables min. 0.6/1 kV Single-core Special rubber core cables 0.6/1 or 1.8/3 kV
Installation type					
Number of cores under load	1 ³⁾	2	3	2 or 3	3 1 ³⁾
Nominal cross-section in mm ²	Current rating in A	Current rating in A		Current rating in A	Current rating in A
0.08 ¹⁾	1.5	-	-	1	- -
0.14 ¹⁾	3	-	-	2	- -
0.25 ¹⁾	5	-	-	4	- -
0.34 ¹⁾	8	-	-	6	- -
0.5	12 ²⁾	3	3	9 ²⁾	- -
0.75	15	6	6	12	- -
1.0	19	10	10	15	- -
1.5	24	16	16	18	23 30
2.5	32	25	20	26	30 41
4	42	32	25	34	41 55
6	54	40	-	44	53 70
10	73	63	-	61	74 98
16	98	-	-	82	99 132
25	129	-	-	108	131 176
35	158	-	-	135	162 218
50	198	-	-	168	202 276
70	245	-	-	207	250 347
95	292	-	-	250	301 416
120	344	-	-	292	- 488
150	391	-	-	335	- 566
185	448	-	-	382	- 644
240	528	-	-	453	- 775
300	608	-	-	523	- 898
400	726	-	-	-	- -
500	830	-	-	-	- -
Current rating from:	DIN VDE 0298-4, 2003-08 Table 11/column 2	DIN VDE 0298-4, 2003-08 Table 11/columns 3 + 4		DIN VDE 0298-4, 2003-08 Table 11/column 5	DIN VDE 0298-4, 2003-08 Table 15/columns 4 + 2

IMPORTANT:

The information portrayed in this table differs from that in VDE 0298-4. As such, in the event of any uncertainty the current version of DIN VDE 0298-4 always applies. Please also observe all applicable conversion factors going beyond table 12-1 for:

- differing ambient temperatures: table T12-2
- several-core cables up to 10 mm² with more than 3 cores under load: table 12-3
- heat-resistant cables for ambient temperatures exceeding 50 °C: table T12-4
- for wound cables: table 12-5
- bundling of single-core or multi-core cables in pipes, ducts, walls or flooring: T 12-6
- bundling of multi-core cables on troughs or conduits: table 12-7
- bundling of single-core cables on troughs or conduits: table 12-8

Cable designs as per table 12-1 category

- A: Single-core cables: LiY, LiYCY- EA, H05V-K, H07V-K, H07V2-K, H07Z-K, multi-standard single-core cable, ÖLFLEX® HEAT, ÖLFLEX® HEAT 180 single cores, ÖLFLEX® HEAT 205/260 single cores
- B: Multi-core connecting cables for domestic/handheld devices: all ÖLFLEX® connecting cables, H05VV-F, H05RR-F, H05RN-F, H05BQ-F, H07BO-F
- C: Multi-core and several-core connecting and/or control cables for all other applications except domestic/household equipment: all ÖLFLEX®, ÖLFLEX® CRANE, ÖLFLEX® HEAT, ÖLFLEX® HEAT 180, ÖLFLEX® HEAT 205/260 cables
- D: Multi-core rubber-sheathed cables V_c/V min. 0.6/1 kV: ÖLFLEX® CRANE PUR, ÖLFLEX® CRANE VS, NSHTÖU, NSSHÖU; ÖLFLEX® HEAT 145 multi-core cables. Single-core special rubber core cables V_c/V 0.6/1 kV or 1.8/3 kV: NSGAFÖU, NSHXAFÖU; ÖLFLEX® HEAT 145 single-core cables.

Current rating of other cables:

ESUY earthing cable: see VDE 0105, part 1
H07RN-F/A 07RN-F/H07BQ-F for industrial applications: see catalogue table T12-9.
Welding cable H01N2-D: see catalogue table T12-10.
Cables for fixed installation in buildings (NYM, NHXMH, NYY, NYCY, NYCWY, NHXHX): see VDE 0298-4, 2003-08, tables 3 + 4.
Cables in machinery: DIN EN 60204-1/VDE 0113-1
Current rating for cables in the USA: see NEC excerpt table 13

¹⁾ Current rating values for small conductor cross-sections taken from VDE 0891-1 (0.08 mm² – 0.34 mm²)

²⁾ Extended range for 0.5 mm² in line with VDE 0298-4, 2003-08, table 11 column 2

³⁾ When bundling single-core, touching or bundled cables:

- When installed on surfaces, the following calculations must be performed on the current rating values in table 12-1 column A or D prior to applying the conversion factors as per table 12-6
 - Multiplied by a factor of 0.76 for single-phase AC or DC circuits or
 - Multiplied by a factor of 0.67 for three-phase circuits.
- When installed in the open air or on cable conduits, the following calculations must be performed on the current rating values in table 12-1 column A or D prior to applying conversion table 12-8
 - Multiplied by a factor of 0.8 for single-phase AC and DC circuits or
 - Multiplied by a factor of 0.7 for three-phase circuits.
- **ATTENTION:** For the current rating of core cables in pipes for electrical installations fitted on and in buildings (installation type A1 or B1), the values from VDE 0298 tables 3 or 5, columns 2, 3, 6 or 7 respectively, must be multiplied with the conversion factors stated in VDE 0298 table 21.

T12 Technical tables

T12: current ratings – reduction tables

**Table 12-2: conversion factors**

For ambient temperatures other than 30 °C in line with DIN VDE 0298-4, 2003-08, table 17.

Table 12-4 of this appendix applies to heat-resistant cables.

Permissible/recommended operating temperature at the conductor (Details of the maximum value in °C can be found in the field "Technical data, temperature range for fixed or flexible installation" on the relevant product page in the catalogue)					
	60 °C	70 °C	80 °C	85 °C	90 °C
Ambient temperature in °C	Conversion factors to be applied to the current rating values in T12-1				
10	1.29	1.22	1.18	1.17	1.15
15	1.22	1.17	1.14	1.13	1.12
20	1.15	1.12	1.10	1.09	1.08
25	1.08	1.06	1.05	1.04	1.04
30	1.00	1.00	1.00	1.00	1.00
35	0.91	0.94	0.95	0.95	0.96
40	0.82	0.87	0.89	0.90	0.91
45	0.71	0.79	0.84	0.85	0.87
50	0.58	0.71	0.77	-	0.82
55	0.41	0.61	0.71	-	0.76
60	-	0.50	0.63	-	0.71
65	-	0.35	0.55	-	0.65
70	-	-	0.45	-	0.58
75	-	-	0.32	-	0.50
80	-	-	-	-	0.41
85	-	-	-	-	0.29

**Table 12-3: conversion factors**For several-core cables with conductor cross-sections up to 10 mm² (DIN VDE 0298-4, 2003-08, table 26).

Number of cores under load	Conversion factor for installation in the open air	Conversion factor for installation underground
5	0.75	0.70
7	0.65	0.60
10	0.55	0.50
14	0.50	0.45
19	0.45	0.40
24	0.40	0.35
40	0.35	0.30
61	0.30	0.25



Table 12-4: conversion factors for heat-resistant cables

Permissible/recommended operating temperature at the conductor <small>(Details of the maximum value in °C can be found in the field "Technical data, temperature range for fixed or flexible installation" on the relevant product page in the catalogue)</small>				
	ÖLFLEX® HEAT 105 H07V2-K ÖLFLEX®-FD ROBUST H07Z-K 90 °C	Halogen-free single core H07Z-K 110 °C	ÖLFLEX® HEAT 145	ÖLFLEX® HEAT 180 Silicone
Ambient temperature in °C	Conversion factors to be applied to the current rating values for heat-resistant cables in T 12-1, column A, C or D. <small>(Source: DIN VDE 0298-4, 2003-08, table 18)</small>			
up to 50	1.00	1.00	1.00	1.00
55	0.94	1.00	1.00	1.00
60	0.87	1.00	1.00	1.00
65	0.79	1.00	1.00	1.00
70	0.71	1.00	1.00	1.00
75	0.61	1.00	1.00	1.00
80	0.50	1.00	1.00	1.00
85	0.35	0.91	1.00	1.00
90	-	0.82	1.00	1.00
95	-	0.71	1.00	1.00
100	-	0.58	0.94	1.00
105	-	0.41	0.87	1.00
110	-	-	0.79	1.00
115	-	-	0.71	1.00
120	-	-	0.61	1.00
125	-	-	0.50	1.00
130	-	-	0.35	1.00
135	-	-	-	1.00
140	-	-	-	1.00
150	-	-	-	1.00
155	-	-	-	0.91
160	-	-	-	0.82
165	-	-	-	0.71
170	-	-	-	0.58
175	-	-	-	0.41



Table 12-5: conversion factors

For wound cables (DIN VDE 0298-4, 2003-8, table 27).

Number of layers on the coil, drum, reel	1	2	3	4	5
Conversion factor	0.80	0.61	0.49	0.42	0.38

A conversion factor of 0.8 applies to spiral winding (in one layer).

T12 Technical tables

T12: current ratings – reduction tables



Table 12-6: conversion factors

For bundling on walls, in pipes and ducts, on flooring and under ceilings (in line with DIN VDE 0298-4, 2003-08, table 21).

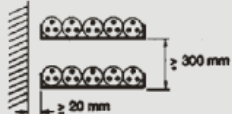
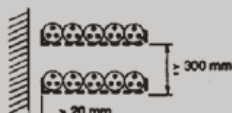
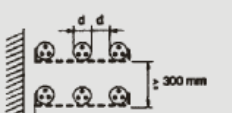




Configuration for installation	Number of multi-core cables or number of AC or three-phase circuits formed by single-core cables (2 or 3 live conductors)															
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	20	
Bundled directly on the wall, on the floor, in pipes or ducts for electrical installations. 	1.00	0.80	0.70	0.65	0.60	0.57	0.54	0.52	0.50	0.48	0.45	0.43	0.41	0.39	0.38	
In a single layer on the wall or floor, touching. 	1.00	0.85	0.79	0.75	0.73	0.72	0.72	0.71	0.70	0.70	0.70	0.70	0.70	0.70	0.70	
In a single layer on the wall or floor, with a gap equal to outer diameter d. 	1.00	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
In a single layer under the ceiling, touching. 	0.95	0.81	0.72	0.68	0.66	0.64	0.63	0.62	0.61	0.61	0.61	0.61	0.61	0.61	0.61	
In a single layer under the ceiling, with a gap equal to outer diameter d. 	0.95	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	

○ = Symbol for single-core or multi-core cable

IMPORTANT: The conversion factors must be applied in order to determine the current rating for cables of the same type and under the same load, when bundled in the same installation type. In the process, the nominal conductor cross-sections must not vary by more than one cross-section classification.

Table 12-7: conversion factors

For bundling multi-core cables on troughs and conduits (in line with DIN VDE 0298-4, 2003-08, table 22).

Configuration for installation		Number of troughs or conduits	Number of multi-core cables					
			1	2	3	4	6	9
Conversion factors								
Non-perforated cable troughs	touching 	1	0.97	0.84	0.78	0.75	0.71	0.68
		2	0.97	0.83	0.76	0.72	0.68	0.63
		3	0.97	0.82	0.75	0.71	0.66	0.61
		6	0.97	0.81	0.73	0.69	0.63	0.58
Perforated cable troughs	touching 	1	1.00	0.88	0.82	0.79	0.76	0.73
		2	1.00	0.87	0.80	0.77	0.73	0.68
		3	1.00	0.86	0.79	0.76	0.71	0.66
		6	1.00	0.84	0.77	0.73	0.68	0.64
	with gap 	1	1.00	1.00	0.98	0.95	0.91	-
		2	1.00	0.99	0.96	0.92	0.87	-
		3	1.00	0.98	0.95	0.91	0.85	-
		6	1.00	0.98	0.95	0.91	0.85	-
Cable conduits	touching 	1	1.00	0.88	0.82	0.78	0.73	0.72
		2	1.00	0.88	0.81	0.76	0.71	0.70
	with gap 	1	1.00	0.91	0.89	0.88	0.87	-
		2	1.00	0.91	0.88	0.87	0.85	-
Cable conduits	touching 	1	1.00	0.87	0.82	0.80	0.79	0.78
		2	1.00	0.86	0.81	0.78	0.76	0.73
		3	1.00	0.85	0.79	0.76	0.73	0.70
		6	1.00	0.83	0.76	0.73	0.69	0.66
	with gap 	1	1.00	1.00	1.00	1.00	1.00	-
		2	1.00	0.99	0.98	0.97	0.96	-
		3	1.00	0.98	0.97	0.96	0.93	-

IMPORTANT: The factors stated in this table apply only to groups of cables installed in a single layer in configurations as specified above. However, they do not apply if the cables are touching and installed over one another, or if the actual gap dimensions between the cable troughs or cable conduits fall short of the specified gaps. If this is the case, reduce the conversion factors (e.g. as per table 12-6).

T12 Technical tables

T12: current ratings – reduction tables



Table 12-8: conversion factors

For bundling single-core cables on troughs and conduits. Applicable to the rating values as per table 12-1 (T 12-8 corresponds to DIN VDE 0298-4 2003-08, table 23).

Configuration for installation	Number of troughs or conduits	Number of 3-pin circuits formed by single-core cables			To be used as the multiplier for the measurement value of:
		1	2	3	
Conversion factors					
Perforated cable troughs touching 	1	0.98	0.91	0.87	Three cables arranged horizontally and level
	2	0.96	0.87	0.81	
	3	0.95	0.85	0.78	
touching 	1	0.96	0.86	–	Three cables arranged vertically and level
	2	0.95	0.84	–	
Cable conduits touching 	1	1.00	0.97	0.96	Three cables arranged horizontally and level
	2	0.98	0.93	0.89	
	3	0.97	0.90	0.86	
Perforated cable troughs 	1	1.00	0.98	0.96	Three cables arranged in a horizontal, triangular configuration
	2	0.97	0.93	0.89	
	3	0.96	0.92	0.86	
		1	1.00	0.91	0.89
2		1.00	0.90	0.86	
Cable conduits 	1	1.00	1.00	1.00	Three cables arranged in a horizontal, triangular configuration
	2	0.97	0.95	0.93	
	3	0.96	0.94	0.90	

IMPORTANT: The factors stated in this table apply only to groups of single-core cables installed in a single layer in configurations as specified above. However, they do not apply if the cables are touching and installed over one another, or if the actual gap dimensions between the cable troughs or cable conduits fall short of the specified gaps. If this is the case, reduce the conversion factors (e.g. as per table 12-6). If circuits are connected in parallel, each three-conductor bundle of the parallel connection is to be considered as one circuit.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

Table 12-9: current rating of rubber-sheathed cables

H07RN-F and A07RN-F for industrial applications (in line with DIN VDE 0298-4 Aug. 2003, table 13).

Permissible operating temperature at the conductor		60 °C						
Ambient temperature		30 °C						
Installation type: in the open air								
Number of cores under load	2	3	2	2	3	3	3	
Nominal cross-section of copper cond. in mm ²	Rating A							
1	-	-	15	15.5	12.5	13	13.5	
1.5	19	16.5	18.5	19.5	15.5	16	16.5	
2.5	26	22	25	26	21	22	23	
4	34	30	34	35	29	30	30	
6	43	38	43	44	36	37	38	
10	60	53	60	62	51	52	54	
16	79	71	79	82	67	69	71	
25	104	94	105	109	89	92	94	
35	129	117	-	135	110	114	-	
50	162	148	-	169	138	143	-	
70	202	185	-	211	172	178	-	
95	240	222	-	250	204	210	-	
120	280	260	-	292	238	246	-	
150	321	300	-	335	273	282	-	
185	363	341	-	378	309	319	-	
240	433	407	-	447	365	377	-	
300	497	468	-	509	415	430	-	
400	586	553	-	-	-	-	-	
500	670	634	-	-	-	-	-	
630	784	742	-	-	-	-	-	
Conversion factors for:								
Differing ambient temperature	see table T 12-2							
Bundling	-	T 12-8				T 12-7		
Wound cables	-	-				T 12-5		
Several-core cables					T 12-3			

T12 Technical tables

T12: current ratings – reduction tables



Table 12-10: operating conditions and ratings for welding cables

H01N2-D and H01N2-E (in line with DIN VDE 0298-4, 2003-08, table 16)

Permissible operating temperature at the conductor		85 °C					
Ambient temperature		30 °C					
Installation type: in the open air							
Number of cores under load		1					
Mode of operation	Continuous operation	Intermittent operation					
Run time	-	5 minutes					
Switch-on duration (ED)	100 %	85 %	80 %	60 %	35 %	20 %	8 %
Nominal cross-section of copper cond. in mm ²		Rating A					
10	96	97	98	102	114	137	198
16	130	132	134	142	166	204	301
25	173	179	181	196	234	293	442
35	216	226	229	250	304	384	584
50	274	287	293	323	398	508	779
70	341	360	368	409	510	655	1011
95	413	438	448	502	632	816	1266
120	480	511	523	588	745	966	1502
150	557	594	609	687	875	1137	1771
185	638	683	700	793	1012	1319	2059
Mode of operation	Continuous operation	Intermittent operation					
Run time	-	10 minutes					
Switch-on duration (ED)	100 %	85 %	80 %	60 %	35 %	20 %	8 %
Nominal cross-section of copper cond. in mm ²		Rating A					
10	96	96	96	97	102	113	152
16	130	131	131	133	144	167	233
25	173	175	176	182	204	244	351
35	216	220	222	233	268	324	477
50	274	281	284	303	356	439	654
70	341	352	358	387	463	578	872
95	413	430	438	478	582	734	1117
120	480	503	513	564	692	880	1348
150	557	586	597	661	819	1046	1609
185	638	674	688	765	955	1226	1892
Conversion factors for differing ambient temperature		Table T 12-2					

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX



Table 13-1: current rating of cables in the USA

Excerpt from NEC table T310.15 (B)(16) page 336

Permissible current rating of insulated copper conductors with a nominal voltage of 0 to 2000 V, 60 °C to 90 °C (140 °F to 194 °F). No more than three current-carrying conductors in any one cable duct, pipe, hose, or in one (multi-core) cable, or installed underground (direct routing underground), based on an ambient temperature of 30 °C (86 °F).

Excerpt from NEC T310.15 (B)(17) page 337

Permissible current rating of single-core cables with copper conductor with a nominal voltage of 0 to 2000 V, installed in the open air, based on an ambient temperature of 30 °C.

(NEC edition 2011)

Conductor cross-section			Rating in A with a permissible continuous temperature at the conductor			Conductor cross-section			Rating in A with a permissible continuous temperature at the conductor		
AWG or kcmil (MCM)	60 °C (140 °F)	75 °C (167 °F)	90 °C (194 °F)	AWG or kcmil (MCM)	60 °C (140 °F)	75 °C (167 °F)	90 °C (194 °F)	AWG or kcmil (MCM)	60 °C (140 °F)	75 °C (167 °F)	90 °C (194 °F)
18	-	-	14	18	-	-	18	18	-	-	18
16	-	-	18	16	-	-	24	16	-	-	24
14	20*	20*	25*	14	25*	30*	35*	14	25*	30*	35*
12	25*	25*	30*	12	30*	35*	40*	12	30*	35*	40*
10	30	35*	40*	10	40*	50*	55*	10	40*	50*	55*
8	40	50	55	8	60	70	80	8	60	70	80
6	55	65	75	6	80	95	105	6	80	95	105
4	70	85	95	4	105	125	140	4	105	125	140
3	85	100	110	3	120	145	165	3	120	145	165
2	95	115	130	2	140	170	190	2	140	170	190
1	110	130	150	1	165	195	220	1	165	195	220
1/0	125	150	170	1/0	195	230	260	1/0	195	230	260
2/0	145	175	195	2/0	225	265	300	2/0	225	265	300
3/0	165	200	225	3/0	260	310	350	3/0	260	310	350
4/0	195	230	260	4/0	300	360	405	4/0	300	360	405
250	215	255	290	250	340	405	455	250	340	405	455
300	240	285	320	300	375	445	505	300	375	445	505
350	260	310	350	350	420	505	570	350	420	505	570
400	280	355	380	400	455	545	615	400	455	545	615
500	320	380	430	500	515	620	700	500	515	620	700
600	355	420	475	600	575	690	780	600	575	690	780

Correction factors for ambient temperatures other than 30 °C				Correction factors for more than 3 current-carrying conductors in any one cable duct, pipe or in a multi-core cable	
Ambient temperature in °C	60 °C	75 °C	90 °C	Number of current-carrying conductors	Correction factor
21 - 25	1.08	1.05	1.04	4 to 6	0.80
26 - 30	1.00	1.00	1.00	7 to 9	0.70
31 - 35	0.91	0.94	0.96	10 to 20	0.50
36 - 40	0.82	0.88	0.91	21 to 30	0.45
41 - 45	0.71	0.82	0.87	31 to 40	0.40
46 - 50	0.58	0.75	0.82	41 and over	0.35
51 - 55	0.41	0.67	0.76		
56 - 60	-	0.58	0.71		
61 - 70	-	0.33	0.58		
71 - 80	-	-	0.41		

*IMPORTANT: Unless explicitly approved elsewhere in the NEC, the overload protection of the values marked with an * (including consideration of the correction values for a different ambient temperature and, if necessary, a different number of current-carrying conductors) must not exceed 15 amps for AWG 14 conductors, or 20 amps for AWG 12 and 30 amps for AWG 10.


NOTE: The current rating of cables in industrial machinery and equipment can be found in section 12, NFPA 79 Edition 2012.


ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

T15 Technical tables

T15: properties of cable insulation and sheathing

Applies only to the base materials. Deviations are possible depending on the use/design. Please refer to the relevant page in the catalogue.

Usage criteria		Material									
		Material resistant to org. oils	Polyvinylchloride	Heat-resistant polyvinylchloride	High-pressure polyethylene	Low-pressure polyethylene	Polyurethane	Polyamide	Polybutylene terephthalate	Polytetrafluoroethylene	Tetrafluoroethylene Hexafluoropropylene copolymer
		Parameter									
Abbreviations	Lapp type: P4/11	PVC	PVC	LDPE	HDPE	PUR	PA	PBTP	PTFE	FEP	
Code as per VDE	–	Y	Y	2Y	2Y	11Y	4Y	–	5Y	6Y	
Operating temperature	-40 +120	-30 +70	-20 +90	-50 +70	-50 +100	-40 +90/100	-40 +80	-60 +110	-190 +260	-100 +200	
Dielectric constant (10 ⁻³)	2.4	4.0	3.5	2.3	2.3	4.0 – 6.0	3.5 – 7.0	3.0 – 4.0	2.1	2.1	
Spec. contact resistance (Ω x cm)	10 ¹⁵	10 ¹² – 10 ¹⁵	10 ¹² – 10 ¹⁵	10 ¹⁷	10 ¹⁷	10 ¹²	10 ¹⁴	10 ¹⁶	10 ¹⁸	10 ¹⁸	
Tensile strength in N/mm ² MPa	10 – 20	10 – 25	10 – 25	20 – 30	30	30 – 45	50 – 180	50 – 100	14 – 40	20 – 25	
Elongation at break in %	450 – 550	150 – 300	150 – 300	500	800	300 – 600	200 – 300	50 – 300	240 – 400	250 – 350	
Water absorption (20 °C) in %	1 – 2	0.4	0.4	0.1	0.1	1.5	1 – 2	0.5	0.01	0.01	
Weather resistance	very good	moderate	moderate	good	moderate	very good	good	good	very good	very good	
Fuel resistance	good	moderate	moderate	low	low	good	moderate	good	very good	very good	
Oil resistance	Resistance to org. oil: very good	good	good	moderate	moderate	good	good	good	very good	very good	
Flammability	flammable	self-extinguishing	self-extinguishing	flammable	flammable	self-extinguishing*	flammable	flammable	non-flammable	non-flammable	

Usage criteria		Material								
		Ethylene tetrafluoroethylene	Perfluoroalkoxy polymer	Chloroprene rubber	Silicone rubber	Ethylene vinyl acetate	Ethylene propylene rubber	Thermoplastic polyolefin elastomer	Thermoplastic polyester elastomer	Styrene three-block copolymer
		Parameter								
Abbreviations	ETFE	PFA	CR	SI	EVA	EPM/EPDM	TPE-O	TPE-E	TPE-S	
Code as per VDE	7Y	–	5G	2G	4G	3G	–	12Y	–	
Operating temperature	-100 +150	-190 +260	-40 +100	-60 +180	-30 +125	-30 +120	-40 +120	-70 +125	-75 +105/140	
Dielectric constant (10 ⁻³)	2.6	2.1	6.0 – 8.0	2.8 – 3.2	5 – 7	3.2	2.7 – 3.6	3.7 – 5.1	2.2 – 2.6	
Spec. contact resistance (Ω x cm)	10 ¹⁶	10 ¹⁵	10 ¹³	10 ¹⁵	10 ¹³	10 ¹⁴	5 x 10 ¹⁴	10 ¹²	10 ¹⁶	
Tensile strength in N/mm ² MPa	40 – 50	30	25	5 – 10	5	5 – 25	≥ 6	3 – 25	9 – 25	
Elongation at break in %	100 – 300	300	450	200 – 350	200	200 – 450	≥ 400	280 – 650	500 – 700	
Water absorption (20 °C) in %	0.01	0.01	1	1.0	0.01	0.02	1.5	0.3 – 0.6	1 – 2	
Weather resistance	very good	very good	very good	very good	good	good	very good	very good	moderate	
Fuel resistance	very good	very good	low	low	low	low	moderate	good	good	
Oil resistance	very good	good	good	moderate	low	low	moderate	very good	low	
Flammability	non-flammable	non-flammable	self-extinguishing	hardly flammable	flammable	flammable	flammable	flammable	flammable	

* only with additional flame retardant

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

US dimension units for cables – comparison with metric dimensions

In North American markets, cable cross-sections are usually stated as AWG (American Wire Gauge) sizes or, for large cable cross-sections (above AWG 4/0), using the unit “kcmil”. You will find these units in the relevant standards for designing cables by current rating.

Multi-standard cables must comply with both the specifications of the metric system (in which the cross-section in mm² is stated as the nominal size) as well the requirements of the AWG system. For this reason, both systems are compared below based on the nominal size.

Please note that exact correspondences between the two systems do not exist as the specifications of the two systems differ in terms of the cross-section and conductor resistance. The following table can be used to help you when selecting the correct nominal cross-section.

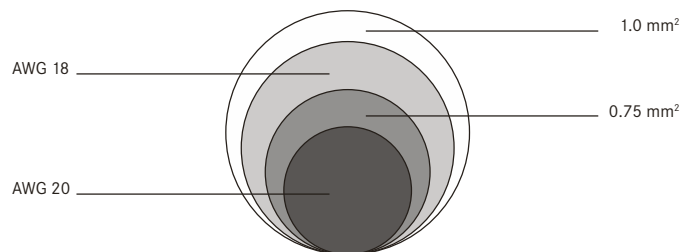
Standards required as part of project planning, such as UL1581 or IEC 60228 (VDE 0295), must be applied accordingly.

Please note that when selecting appropriate connecting elements such as conductor end sleeves, the **actual** conductor cross-section is decisive. This is stated on the relevant product page.

Column 1a	Column 1b	Column 2	Column 3	Column 4	Column 5a	Column 5b
North American cross-section required	Geometric conversion	Metric nominal cross-section that meets the electrical requirements	Metric nominal cross-section required	North American size that meets the electrical requirements		
AWG	kcmil	mm ²	mm ²	mm ²	AWG	kcmil
750	380.03	400	400			800
500	253.35	300	300			750
450	228.02	240	240			500
400	202.68					450
350	177.35	185	185			400
300	152.01					350
250	126.68	150	150			300
4/0	107.22	120	120			250
3/0	85.01	95	95	4/0		
2/0	67.43	70	70	3/0		
1/0	53.49			2/0		
1	42.41	50	50	1/0		
2	33.62	35	35	1		
3	26.67			2		
4	21.15	25	25	3		
5	16.77			4		
6	13.30	16	16	5		
7	10.55			6		
8	8.37	10	10	7		

Column 1a	Column 1b	Column 2	Column 3	Column 4	Column 5a	Column 5b
North American cross-section required	Geometric conversion	Metric nominal cross-section that meets the electrical requirements	Metric nominal cross-section required	North American size that meets the electrical requirements		
AWG	kcmil	mm ²	mm ²	mm ²	AWG	kcmil
9		6.63			8	
10		5.26	6	6	9	
11		4.17			10	
12		3.31	4	4	11	
13		2.62			12	
14		2.08	2.5	2.5	13	
15		1.65			14	
16		1.31	1.5	1.5	15	
17		1.04			16	
18		0.82	1	1	17	
19		0.65	0.75	0.75	18	
20		0.52			19	
21		0.41	0.5	0.5	20	
22		0.33	0.34	0.34	21	
23		0.26			22	
24		0.20	0.25	0.25	23	
25		0.16			24	
26		0.13	0.14	0.14	25	

Principle of cross-section figures



EXAMPLE 1:

The electro-technical project planning requirements as per North-American standards stipulate that you require a cable of AWG 20.

The relevant product page in the catalogue does not list any cables with this AWG size. A size of AWG 20 is listed in the above table in column 1a. Column 3 lists the metric nominal cross-section that, as a minimum, meets the electrical requirements of size AWG 20. Thus, you will require a cable with a nominal cross-section of 0.75 mm².

EXAMPLE 2:

The electro-technical project planning requirements as per European standards stipulate that you require a cable of 0.75 mm².

The product page in the catalogue lists only AWG figures or large metric cross-sections. Nominal cross-section 0.75 mm² is listed in the above table in column 4. Column 5a lists the AWG size that, at a minimum, meets the electrical requirements of a nominal cross-section of 0.75 mm². Thus, you will require a cable with size AWG 18.

T16 Technical tables

T16: Anglo-American dimensions



General dimensions*:

The base units are as follows:

In the British gravitational system:

Length (ft) – force (lbf = Lb) – time (s)

In the British absolute system:

Length (ft) – mass (lb) – time (s)

1. Measures of length

1 mil	=	0.0254 mm
1 inch (in;")	=	25.4 mm
1 foot (ft;')	=	0.305 m
1 yard (yd)	=	0.914 m
1 chain (ch)	=	20.1 m
1 statute mile	=	1.61 km
1 nautical mile	=	1.835 km
1 statute mile	=	1760 yards

2. Measures of volume

1 cubic inch	=	16.39 cm ³
1 cubic foot	=	0.0283 m ³
1 cubic yard	=	0.765 m ³
1 US liquid gallon	=	3.79 l
1 pint	=	0.473 l
1 quart	=	0.946 l
1 brit gallon	=	4.53 l
1 barrel	=	119.2 l

3. Measures of area

1 circ. mil (CM)	=	0.507 · 10 ⁻³ mm ²
1 kcmil (MCM)	=	0.5067 mm ²
1 square inch (sq. in.)	=	645.16 mm ²
1 square foot (sq.ft.)	=	0.0929 m ²
1 square yard	=	0.836 m ²
1 acre	=	0.00405 km ²
1 square mile	=	2.59 km ²
1 m ²	=	10.764 sq. ft.

4. Units of mass

British gravitational system:

1 slug = 1 lbs · s²/ft

British absolute system:

1 pound = 1 lb

1 slug = 32.174 lb, with 32.174 ft/s²

as the standard value of gravitational acceleration

1 grain	=	64.80 mg
1 dram	=	1.770 g
1 ounce (oz)	=	16 drams = 28.35 g
1 pound (lb)	=	16 oz = 453.59 g
1 stone	=	14 lbs = 6.35 kg
1 US ton (short ton)	=	0.907 t
1 Brit. ton (long ton)	=	0.016 t

5. Units of force

British gravitational system:

pound-force 1 lbf = 1 Lb

British absolute system:

poundal 1 pdl = 1 lb · ft/s²

1 lbf = 32.174 pdl – 9.80665 lb · m/s²

6. Conversion to metric units

1 pound-force (lbf)	=	0.454 kp
1 Brit. ton-force	=	1016 kp
1 poundal (pdl)	=	0.1383 N
1 lbf	=	4.445 N

7. Electrical units per unit of length

1µf per mile	=	0.62 µF/km
1 megohm per mile	=	1.61 MΩ · km
1 megohm per 1000 ft	=	3.28 Ω · km
1 ohm per 1000 yd	=	1.0936 Ω/km

8. Weights per unit of length

1 lb per foot	=	1.488 kg/m
1 lb per yard	=	0.469 kg/m
1 lb per mile	=	0.282 kg/m

9. Density

1 lb/ft³ = 16.02 kg/m³

10. Specific weight

1 lbf/ft³ = 16.02 kp/m³

11. Copper wire weight per mile

lb/mile	=	Ø mm
5	=	0.404
6.5	=	0.51
7.5	=	0.55
10	=	0.64
20	=	0.90
40	=	1.27

12. Units of energy

1 horsepower	=	0.746 kW (H.P.)
1 Brit. therm. unit	=	0.252 kcal

Insulation wall thickness is often expressed in n/64 inches with n/64 inch equalling approx. 0.4 mm.

13. Further dimensions for wire weights

and electrical field strengths:

lbf pr. MFeet	=	1.488 kg/km
lbf pr. Mile	=	0.282 kg/km
40 V/mil	=	1.6 kV/mm
80 V/mil	=	3.2 kV/mm
100 V/mil	=	4.0 kV/mm
250 V/mil	=	10.0 kV/mm

* Most of these units are no longer in use and are provided purely for information purposes.



Table 17-1: example using "copper"

Copper prices

Cables, wires and piece goods are sold at daily copper prices (DEL). DEL is the stock exchange listing for German electrolytic copper for conducting purposes, i. e. 99.5% pure copper. The DEL is expressed in euros per 100 kg and can usually be found in the business section of daily newspapers under "Commodity markets".

FOR EXAMPLE: DEL 576.93 means: 100 kg copper (Cu) costs EUR 576.93. Currently a 1% procurement surcharge is added to the daily quotation for cables, wires and piece goods. Further information, particularly concerning the DEL quote, can be obtained from the ZVEI professional association for cables and insulated wires: www.zvei.org

Copper price basis

A proportion of the copper price is already included in the list price for many cables and almost all wires and piece goods. This is also expressed in euros per 100 kg

- EUR 150.00 / 100 kg for most flexible cables (e. g. ÖLFLEX® CLASSIC 100) and piece goods (e. g. ÖLFLEX® SPIRAL 540 P)
- EUR 100.00 / 100 kg for telephone cables (e. g. J -Y(St)Y)
- EUR 0.00 / 100 kg for underground cables (e. g. power cable NYY), i. e. hollow price.

Exact details can be found on each page of the catalogue beneath the article table.

Copper index

The copper index is the calculated copper weight of a cable, wire (kg/km) or piece good (kg/ 1000 pc) and is specified for each catalogue item.

Other metals

This same method is also used for other metals, e. g. "aluminium". In this case, replace "copper" with "aluminium". General term: "metal".

Example I: Calculating the copper surcharge for goods sold by the metre:

Cable ÖLFLEX® CLASSIC 100, 3G1.5 mm²
Copper index as per catalogue 43 kg/km
The calculated copper weight of the cable is 43 kg per 1 km.

$$\text{Copper index (kg/km)} \times \frac{(\text{DEL} + 1\% \text{ procurement costs}) - \text{copper price basis}}{1000} = \text{Copper surcharge in EUR/100 m}$$

ÖLFLEX® CLASSIC 110, 3G1.5 mm².
DEL: EUR 576.93/ 100 kg. Cu basis EUR 150.00/ 100 kg.
Cu index: 43 kg/km

$$43 \text{ kg/km} \times \frac{(576.93 + 5.77) - 150.00}{1000} = \text{EUR } 18.61 / 100 \text{ m}$$

Assuming a DEL quotation of EUR 576.93/ 100 kg, this figure represents the copper surcharge for 100 m ÖLFLEX® CLASSIC 110 3G1.5 mm².

Example II: Calculating the copper surcharge for piece goods:

ÖLFLEX® SPIRAL 540P 3G1.5 mm² (item no.: 73220150).
Copper index as per catalogue: 605.5 kg/ 1000 pc.
Copper price basis as per catalogue: EUR 150.00/ 100 kg
The calculated copper weight (copper index) of the piece good spiral cable is 605.5 kg/ 1000 pc.
Formula for calculating the copper surcharge for piece goods:

$$\text{Copper index (kg/ 1000 pc)} \times \frac{(\text{DEL} + 1\% \text{ procurement costs}) - \text{copper price basis}}{1000} = \text{Copper surcharge in EUR/ 100 pc}$$

$$605.5 \text{ kg / 1000 pc} \times \frac{(576.93 + 5.77) - 150.00}{1000} = \text{EUR } 261.78 / 100 \text{ pc}$$

Price including copper:

The net price is calculated as follows:
Gross price - % discount + copper surcharge = net price including copper.
The copper surcharge is shown separately on the invoice.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

T17 Technical tables

T17: calculating metal surcharges



Table 17-2: background information on cables

For the majority of our product range, the construction of conductors for cables and insulated wires is governed by the international standard DIN EN 60228 (VDE 0295)/IEC 60228. Normative threshold values are defined for the nominal cross sections and the conductor materials copper/aluminium/aluminium alloy listed in the standard. The application of these threshold values varies for the different conductor classes, however, they all exhibit a maximum conductor resistance at 20 °C.

Conductor resistance at 20 °C is an important normative compliance value. Other geometric requirements in DIN EN 60228 et seqq. and in product standards that reference DIN EN 60228 et seqq., serve to ensure the compatibility of conductors and connectors and do not contain any requirements concerning the weight of the conductor materials used in the wire or cable.

For example, the density of copper used in the manufacture of cables and wires is specified as 8.89 g/cm³ in accordance with DIN EN 13602. Therefore, a single-core cable with a nominal cross section of 1 mm² has a copper content of 8.89 kg/km. This simple formula for calculating the copper content provides an indication. However, the actual value may be lower than this, as it is the maximum conductor resistance at 20 °C that is important. The extent of the (+/-) deviation from this calculation value depends on the production process employed by individual manufacturers and the semifinished conductors they use.

When it comes to invoicing, e.g. for copper surcharges, the copper index is used. You may also see the term “calculated copper weight” being used instead of “copper index”. This typical industry value* is 9.6 kg/km** – based on the nominal cross section of 1 mm² – and factors in the necessary increased use of material/copper.

This increase generalises individual (manufacturer-dependent) additional expenditure during the manufacturing process. In particular, this includes irreversible losses resulting from lead-in lengths and abrasion on the drawing dies as well as from the widening (wearing) of the dies during wire production. It also includes additional expenditure due to twisting of the conductors and the resulting enlargement of the stretched length. There are also surcharges to ensure the conductor resistance at unavoidable manufacturing tolerances – e.g. cross section reduction due to the tensile load during extrusion and twisting. It should also be mentioned that the copper index calculated in this manner is the only way to enable standardisation across manufacturers – particularly in the case of unshielded cables – and therefore serves as the basis for price comparisons, particularly when calculating copper surcharges.

The aim of this customer information is to explain the technical and commercial background for determining and using the copper index and to demonstrate the benefits and efficiency of its use for manufacturers, traders and customers alike.

*U.I. Lapp GmbH is a member of the professional association for cables and insulated wires of ZVEI

**The corresponding figure to be used for aluminium is 2.9 kg/km

 **Trademark approvals**

Thanks to their outstanding characteristics, many of our products have been tested and approved by the following approval associations. You will find the certification marks on the individual product pages, if applicable.



UNDERWRITERS LABORATORIES INC.



LISTED COMPONENT MARK FOR CANADA AND UNITED STATES



LLOYD'S REGISTER OF SHIPPING



CANADIAN STANDARDS ASSOCIATION



GERMANISCHER LLOYD CERTIFICATION



VERBAND DEUTSCHER ELEKTROTECHNIKER
 (Association for Electrical, Electronic & Information Technologies)



SCHWEIZERISCHER ELEKTROTECHNISCHER VEREIN (Swiss Association for Electrical Engineering, Power and Information Technologies)



GGVS / Gefahr-Gut-Verordnung-Straße (German regulation for the transportation of dangerous goods on road) / EN 220500 et seqq.



ISTITUTO ITALIANO DEL MARCHIO DI QUALITÀ
 (Italian Institute for the Quality Mark)

Entered

 in the Design Register at
 the local court in Stuttgart



PHYSIKALISCH-TECHNISCHE BUNDESANSTALT



"Gost R" certification for Russia

T19 Technical tables

T19: laying guidelines for cables and wires



Laying guidelines for cables and wires

Cables must be selected in accordance with the laying and operating conditions. They must be protected against mechanical, thermal and chemical effects as well against moisture penetrating through the cable ends.

Insulated power cables must not be laid underground. Temporary covering of NSSHÖU rubber-sheathed cables or trailing cables with soil, sand or a similar material, e.g. on building sites, does not constitute underground installation.

Fasteners and fixtures must not cause any damage to fixed wires and cables. Where cables or wires running horizontally along walls or ceilings are fixed using clips, the following guidelines regarding clip spacing must be observed:

For non-reinforced cables and wires, 20 x outside diameter.

These spacing guidelines also apply when laying cables in conduits and racks. When laying cables vertically, the spacing between clips can be increased depending on the type of cable or clip.

When connecting flexible cables (e.g. ÖLFLEX® cables, UNITRONIC® cables) to portable power consumers, there must be no strain or thrust at the insertion points and the cables must be secured against twisting and kinking. Outer cable sheaths must not be damaged at the insertion points or by the strain relief devices. Standard version flexible PVC cables are not designed for outdoor use.

Flexible rubber-sheathed cables (e.g. ÖLFLEX® CRANE cables) are only suitable for permanent outdoor use if their outer sheath is made of a compound, generally based on polychloroprene (NEOPRENE®). Special cables must be deployed for permanent underwater use.

Thermal stress

The temperature limits for the respective cable designs can be found in the technical data. The upper temperature limits must not be exceeded as a result of the cable heating up due to current heat and thermal environmental factors.

The lower temperature limits denote the lowest permitted ambient temperature.

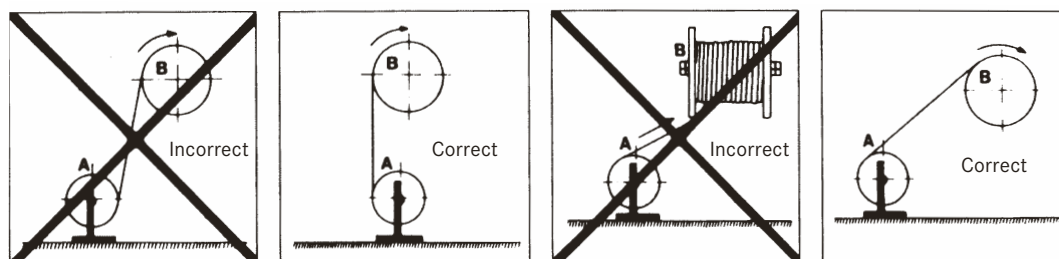
Tensile strain

Tensile strain on the conductor should be as low as possible.

The following tensile strains for conductors must not be exceeded for cables.

- When laying and operating cables for portable equipment: 15 N per mm² conductor cross-section; this does not include screening, concentric conductors and divided protective conductors. In the case of cables that are subjected to dynamic stresses, e.g. in crane systems with high acceleration or power chains subject to frequent movement, appropriate measures must be taken, e.g. enlargement of the bending radius in individual cases. A shorter service life may be expected.
- Cables for static installation. When laying permanent cables, 50 N per mm² conductor cross-section.
- For fibre optic cables, BUS, LAN, industrial and Ethernet cables, the respective permitted strain must be observed. These values can be found in the product data sheets or are available on request.

For more information on this subject, see tables T3, T4 and T5.



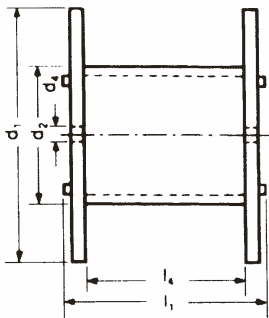
Winding and unwinding cables



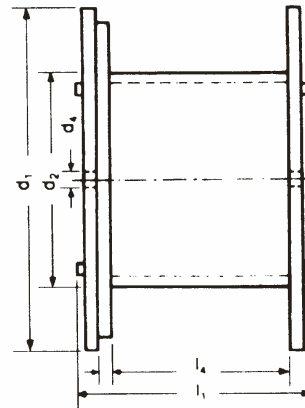
Wooden drums: holding capacity

Drum ID number	Cable Ø mm										
	6	9	12	15	20	25	30	40	50	60	80
71	2024	892	468	297	165	-	-	-	-	-	-
81	2755	1152	643	430	219	151	-	-	-	-	-
91	-	2202	1206	749	402	285	162	-	-	-	-
101	-	-	1540	1000	576	365	220	-	-	-	-
121	-	-	-	1991	1139	688	450	249	-	-	-
141	-	-	-	2479	1352	839	564	327	-	-	-
161	-	-	-	-	2435	1608	1028	549	319	-	-
181	-	-	-	-	-	1867	1197	640	373	256	-
201	-	-	-	-	-	2522	1583	812	558	296	163
221	-	-	-	-	-	-	2383	1328	678	566	278
250	-	-	-	-	-	-	-	1892	1107	699	363

Up to drum size 10 with cable bushing



From drum size 12 with spiral



Wooden drums: dimensions and load-bearing capacity

Drum ID number	Drum size	Diameter (mm)			Width (mm)		Load-bearing capacity kg	Weight kg
		d ₁	d ₂	d ₄	l ₁	l ₄		
071	07	710	355	80	520	400	250	25
081	08	800	400	80	520	400	400	31
091	09	900	450	80	690	560	750	47
101	10	1000	500	80	710	560	900	71
121	12	1250	630	80	890	670	1700	144
141	14	1400	710	80	890	670	2000	175
161	16/8	1600	800	80	1100	850	3000	280
181	18/10	1800	1000	100	1100	840	4000	380
201	20/12	2000	1250	100	1340	1045	5000	550
221	22/14	2240	1400	125	1450	1140	6000	710
250	25/14	2500	1400	125	1450	1140	7500	875
251	25/16	2500	1600	125	1450	1130	7500	900
281	28/18	2800	1800	140	1635	1280	10000	1175

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

T20 Technical tables

T20: cable drums – transport damage, losses, rental and handling



Transport damage

We take great care when selecting our transport service providers.

However, please inspect all delivered goods to make sure that:

- there are no external signs of damage
- you have received the correct goods and
- the delivery is complete.

If you find any of these faults, please ask the carrier to confirm this on your shipping documents before accepting the goods. You should also always record the fault on the carrier's delivery receipt.

If you fail to write down an obvious fault on the shipping documents, we shall not be legally held liable for any damage claims.

In the event of damage, please also contact your local sales representative at our company and provide us with the delivery note and/or invoice number.

If you find a concealed fault, please notify your sales representative straight away.



Information on our cable drums

Our cable drums. Free of charge to you!

We ship our cables on IPPC-compatible Lapp cable drums. We do not charge any rental for drums.

Returning drums. Please note the following.

Our partner responsible for all packaging and disposal matters is the disposal and recycling service provider INTERSEROH Dienstleistungs GmbH. Please address any queries regarding the new packaging regulation to:

Interseroh Dienstleistungs GmbH
 Telephone: 0049 2203 9147-1366
 Fax: 0049 2203 9147-1390
 E-mail: kabeltrommeln@interseroh.com

Of course, you can also contact us directly:
 Tel: 0049 711 7838-2233, fax: 0049 711 7838-6620 or by
 e-mail: lo-service@lappkabel.de

KTG drums. Only at your request.

If you wish, we can also supply our cables on KTG drums subject to charge. These drums are subject to the terms & conditions for hiring cable and rope drums from Kabeltrommel GmbH Co. KG (KTG) in Troisdorf.

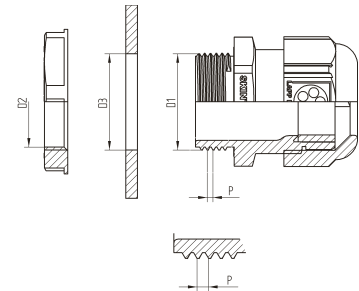
You can view these on the Internet at <http://www.kabeltrommel.de>. Your contractual partner for hiring these drums is not the Lapp Group, but rather KTG in Troisdorf.



Thread and hole dimensions – technical data for installation

Metric thread to EN 60423 (for screw connections to EN 50 262)

Nominal size	Ø D1	P	Ø D2	Hole Ø D3
M12 x 1.5	12	1.5	10.6	12.3 - 0.2
M16 x 1.5	16	1.5	14.6	16.3 - 0.2
M20 x 1.5	20	1.5	18.6	20.3 - 0.2
M25 x 1.5	25	1.5	23.6	25.3 - 0.2
M32 x 1.5	32	1.5	30.6	32.3 - 0.2
M40 x 1.5	40	1.5	38.6	40.4 - 0.3
M50 x 1.5	50	1.5	48.6	50.4 - 0.3
M63 x 1.5	63	1.5	61.6	63.4 - 0.3
M75 x 1.5	75	1.5	73.6	75.4 - 0.3
M90 x 2	90	2	88.8	90.4 - 0.3
M110 x 2	110	2	108.8	110.4 - 0.3



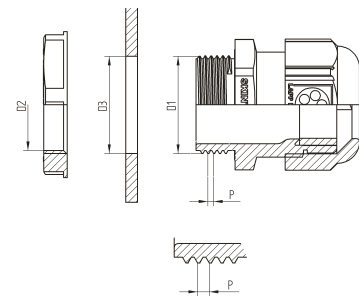
- D1 = External Ø
- D2 = Core Ø internal thread
- D3 = Hole Ø
- P = Pitch

Metric thread to DIN 13 part 6 and 7 (for screw connections to DIN 89 280)

Nominal size	Ø D1	P	Ø D2	Hole Ø D3
M18 x 1.5	18	1.5	16.4	18.3 - 0.2
M24 x 1.5	24	1.5	22.4	24.3 - 0.2
M30 x 2	30	2	27.8	30.3 - 0.2
M36 x 2	36	2	33.8	36.3 - 0.2
M45 x 2	45	2	42.8	45.4 - 0.3
M56 x 2	56	2	53.8	56.4 - 0.3
M72 x 2	72	2	69.8	72.5 - 0.4
M80 x 2	80	2	77.8	80.5 - 0.4
M105 x 2	105	2	102.8	105.5 - 0.4

PG thread to DIN 40430

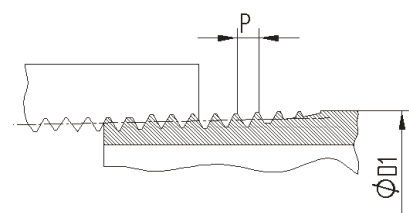
Nominal size	Ø D1	P	Ø D2	Hole Ø D3
PG 7	12.5	1.27	11.3	13.0 ± 0.2
PG 9	15.2	1.41	13.9	15.7 ± 0.2
PG 11	18.6	1.41	17.3	19.0 ± 0.2
PG 13.5	20.4	1.41	19.1	21.0 ± 0.2
PG 16	22.5	1.41	21.2	23.0 ± 0.2
PG 21	28.3	1.588	26.8	28.8 ± 0.2
PG 29	37.0	1.588	35.5	37.5 ± 0.3
PG 36	47.0	1.588	45.5	47.5 ± 0.3
PG 42	54.0	1.588	52.5	54.5 ± 0.3
PG 48	59.3	1.588	57.8	59.8 ± 0.3



- D1 = External Ø
- D2 = Core Ø internal thread
- D3 = Hole Ø
- P = Pitch

NPT thread to ANSI B1.20.2 – 1983

Nominal size	Ø D1	P	Hole Ø D3
NPT 1/4"	13.7	1.41	14.1 - 0.2
NPT 3/8"	17.1	1.41	17.4 - 0.2
NPT 1/2"	21.3	1.81	21.6 - 0.2
NPT 3/4"	26.7	1.81	27.0 - 0.2
NPT 1"	33.4	2.21	33.7 - 0.2
NPT 1 1/4"	42.2	2.21	42.5 - 0.2
NPT 1 1/2"	48.3	2.21	48.7 - 0.2
NPT 2"	60.3	2.21	60.7 - 0.2



- D1 = External Ø
- D3 = Hole Ø
- P = Pitch

T21 Technical tables

T21: tightening torques and installation dimensions for cable glands



Tightening torques* for SKINTOP® metric screw connections

Table of recommended tightening torques (domed cap nut, connection thread) for SKINTOP® metric design to achieve category A protection rating and strain relief to EN 50262. For more information regarding the protection rating, see the product page.

Nominal size	Tightening torque in Nm	
	Plastic	Metal
M12 x 1.5	1.5	8
M16 x 1.5	3.0	10
M20 x 1.5	6.0	12
M25 x 1.5	8.0	12
M32 x 1.5	10.0	18
M40 x 1.5	13.0	18
M50 x 1.5	15.0	20
M63 x 1.5	16.0	20
M63 x 1.5 plus	-	25
M75 x 1.5	-	30
M90 x 2	-	45
M110 x 2	-	55

*NOTE: For ATEX screw connections, see the corresponding operating instructions for the respective tightening torques (operating instructions can be found in the delivery bag).



Regulation tightening torques* to DIN/VDE 0619, point 7 for SKINTOP® PG screw connections

Nominal size	Tightening torques for fittings in Nm		Tightening torques for domed cap nuts in Nm
	Plastic	Metal	Plastic
PG 7	2.5	6.25	1.7
PG 9	3.75	6.25	2.5
PG 11	3.75	6.25	2.5
PG 13.5	3.75	6.25	2.5
PG 16	5.0	7.5	3.3
PG 21	7.5	10.0	5.0
PG 21	7.5	10.0	5.0
PG 29	7.5	10.0	5.0
PG 36	7.5	10.0	5.0
PG 42	7.5	10.0	5.0
PG 48	7.5	10.0	5.0

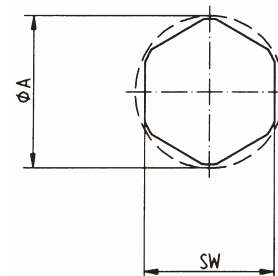
NOTE: The values in the table above constitute the tightening torques for fittings and the maximum tightening torques for domed cap nuts under normal climatic conditions. Note that lower torques must be used with different cable insulation materials; otherwise, the cable insulation may be damaged.



Installation dimensions and wrench sizes for cable glands

Diameter A indicates the installation space required for the relevant hexagon. This diameter corresponds to the width of the hexagon across corners plus an installation tolerance.

WS	Ø A	WS	Ø A	WS	Ø A	WS	Ø A
9	10.4	22	25.0	37	41.5	54	61.0
11	12.5	24	27.3	39	44.0	55	62.0
13	14.9	25	28.3	40	45.2	57	64.4
14	16.0	26	29.5	41	46.1	60	67.5
15	17.1	27	30.6	42	47.0	64	72.3
16	18.2	28	31.8	45	51.2	65	73.1
17	19.4	29	32.5	45	51.2	66	74.5
18	20.4	30	34.0	46	52.5	67	74.5
19	22.0	32	36.2	47	52.5	95	105.0
20	22.7	33	37.2	50	58.3	115	127.0
21	23.9	36	40.5	53	60.0	135	150.0





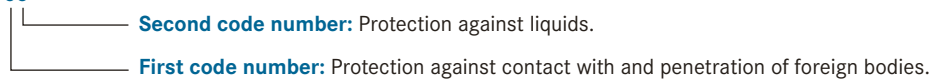
Definition of protection ratings to EN 60529 (DIN 0470) and DIN 40050

The protection ratings are indicated by a code that is always made up of the same two identification letters IP and the code numbers for the degree of protection, e.g. IP 54.

Degrees of protection against solid foreign bodies		
First code number	Short description	Definition
0	Not protected	
1	Protected against solid foreign bodies 50 mm diameter and above	The object probe, sphere of 50mm diameter, shall not fully penetrate.
2	Protected against solid foreign bodies 12.5 mm diameter and above	The object probe, sphere of 12.5 mm diameter, shall not fully penetrate.
3	Protected against solid foreign bodies 2.5 mm diameter and above	The object probe, sphere of 2.5 mm diameter, shall not penetrate at all.
4	Protected against solid foreign bodies 1.0 mm diameter and above	The object probe, sphere of 1.0 mm diameter, shall not penetrate at all.
5	Protected against dust	Intrusion of dust is not completely prevented but dust shall not penetrate in a quantity that would interfere with the satisfactory operation of the device or impair safety.
6	Dust-tight	No penetration of dust.

Degrees of protection against water		
Second code number	Short description	Definition
0	Not protected	
1	Protected against drops of water	Vertically falling drops shall have no harmful effects.
2	Protected against drops of water if the housing is tilted by up to 15°.	Vertically falling drops shall have no harmful effects if the housing is tilted by up to 15° on either side of the vertical.
3	Protected against spraying water	Water sprayed at an angle of up to 60° on either side of the vertical shall have no harmful effects.
4	Protected against splashing water	Water splashed against the housing from any direction shall have no harmful effects.
5	Protected against jets of water	Water projected in jets against the housing from any direction shall have no harmful effects.
6	Protected against powerful jets of water	Water projected in powerful jets against the housing from any direction shall have no harmful effects.
7	Protected against the effects of temporary immersion in water	Water must not penetrate in quantities causing harmful effects when the housing is temporarily immersed in water under standardised pressure and time conditions.
8	Protected against the effects of permanent immersion in water	Water must not penetrate in quantities causing harmful effects when the housing is continually immersed in water under conditions that must be agreed upon between the manufacturer and the user. However, the conditions must be more difficult than for number 7.
9K	High-pressure/steam-jet cleaning	Water projected against the housing from any direction under very high pressure shall have no harmful effects.

FOR EXAMPLE: Identification letters IP **65**



ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

T24 Technical tables

T24: chemical resistance of plastics

Reagent	Concentration	at + °C	Polyamide PA 6		Polyamide PA 6.6	Polyamide PA 12	Thermoplastic polyurethane PU	Polypropylene PP	Polyethylene HD-PE	Polyethylene LD-PE	Polystyrene PS	Nitrile butadiene rubber NBR
Exhaust gases containing carbon dioxide	all	60						☒	☒			
Exhaust gases, containing SO ₂	low	60						☒	☒			
Acetaldehyde	40%	20	✖	✖	☒		☒					20 °C ☒
Acetone	100%	20	☒	☒	☒	✖	☒	✖	✖			✖
Acrylic acid	100%	> 30	✖	✖	✖							✖
Alums, aqueous	diluted	40					☒	☒	☒	☒	☒	20 °C ☒
Allyl alcohol	96%	20	✖	✖	☒	☒	☒	☒	20% ☒			
Aluminium chloride, aqueous	diluted	40					☒	☒	☒	☒	☒	20 °C ☒
Aluminium sulphate, aqueous	diluted	40					☒	☒	☒	☒	☒	20 °C ☒
Formic acid, aqueous	10%	20	✖	✖	☒		☒	☒			☒	
Ammonia, aqueous	saturated	20	20% ☒	20% ☒	20% ☒		☒	☒	☒	☒	25% ☒	
Ammonium chloride, aqueous	saturated	60				3% ✖	☒	☒	☒	☒		20 °C ☒
Ammonium nitrate, aqueous	diluted	40					☒	☒	☒	☒	☒	20 °C ☒
Ammonium sulphate, aqueous	diluted	40					☒	☒	☒	☒		✖
Aniline, pure	100%	20	✖	✖	✖		☒	☒	☒	☒	✖	
Aniline hydrochloride, aqueous	saturated						☒	✖	✖			
Benzaldehyde, aqueous	saturated	20	pure ✖	pure ✖	pure ✖		☒				✖	✖
Benzene	100%	20	☒	☒	☒		✖	☒	✖	✖	✖	☒
Benzoic acid, aqueous	all	40	20% ✖	20% ✖			☒	☒	☒	☒	☒	✖
Benzole	100%	20	☒	☒	☒		✖	✖	✖	✖	✖	✖
Bleaching liquor	12.5 Cl	20	✖	✖	✖	3% ✖	☒	☒	☒	☒	☒	✖
Drilling oil	all	20	✖	✖	✖		✖	✖	✖	✖	✖	✖
Chrome alum, aqueous	diluted	40					☒	☒	☒			20 °C ☒
Cyclohexanol	-	20	☒	☒	☒		☒	☒	☒	☒	☒	☒
Diesel fuel		85	☒	☒	☒	20 °C ☒	20 °C ☒	20 °C ☒	20 °C ☒			
Ferric chloride, aqueous, neutral	10%	20	☒	☒	☒		☒	☒	☒	☒	☒	☒
Glacial acetic acid	100%	20					☒	☒	☒			✖
Acetic acid	10%	20	✖	✖	☒	3% ✖	☒	☒	☒	☒	✖	
Ethyl alcohol, aqueous	10%	20	40 vol% ☒	40 vol% ☒	40 vol% ☒			☒			☒	
Ethylene chloride	100%	20					✖	✖	✖			✖
Ethylene oxide	100%	20					✖					
Ethyl ether	100%	20					✖					✖
Potassium ferrocyanide, aqueous	saturated	60					☒	☒	☒			
Fluorine	50%	40	pure ✖	pure ✖	pure ✖	✖	✖	✖				
Formaldehyde, aqueous	diluted	40	pure ☒	pure ☒	pure ✖		40% ☒	40% ☒	40% ☒	30% ☒		20 °C ✖
Glucose, aqueous	all	50					☒	☒	☒			
Urea, aqueous	to 10%	40	20% ☒	20% ☒	20% ☒		☒	☒	☒	☒	☒	
Flame-retardant hydraulic fluid		80	☒	☒	☒							
Hydraulic oils H and HL (DIN 51524)		100	☒	☒	☒							
Hydroxylamine sulphate, aqueous	to 12%	30					☒					
Caustic potash, aqueous	50%	20	☒	☒	☒		☒	☒	☒	☒	☒	
Potassium bromide, aqueous	all	20	10% ☒	10% ☒	10% ☒		☒	☒	☒	☒	☒	
Potassium chloride, aqueous	10%	20	☒	☒	☒		☒	☒	☒	☒	☒	☒
Potassium dichromate, aqueous	40%	20	5% ✖	5% ✖	5% ✖		☒	☒	☒	☒	☒	☒
Potassium nitrate, aqueous	all	20	10% ☒	10% ☒	10% ☒		☒	☒	☒	☒	☒	☒
Potassium permanganate, aqueous	saturated	20					☒				☒	
Hydrosilicofluoric acid, aqueous	to 30%	20	✖	✖			☒	☒	☒			

☒ Highly resistant
 ✖ Limited resistance
 ✖ Not resistant

The information is given to the best of our knowledge and experience, however, it must be regarded as being for guidance purposes only. In many cases, a final judgement can only be made by performing tests under actual working conditions.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

Reagent	Concentration	at + °C %	Polyamide PA 6	Polyamide PA 6.6	Polyamide PA 12	Thermoplastic polyurethane PU	Polypropylene PP	Polyethylene HD-PE	Polyethylene LD-PE	Polystyrene PS	Nitrile butadiene rubber NBR
Carbon dioxide, dry	100%	60					⊗	⊗	⊗	50 °C ⊗	20 °C ⊗
Carbonic acid	100%	60	⊗	⊗	⊗						20 °C ⊗
Cresylic acid, aqueous	to 90%	20	pure ✗	pure ✗			⊗	⊗	✗	✗	✗
Coolant DIN 53521		120	✗	✗							
Copper chloride, aqueous	saturated	20					⊗	⊗	⊗		⊗
Copper sulphate, aqueous	saturated	60					⊗	⊗	⊗		20 °C ⊗
Magnesium carbonate, aqueous	saturated	100					⊗			50 °C ⊗	
Magnesium chloride, aqueous	saturated	20	10% ⊗	10% ⊗	10% ⊗		⊗	⊗	⊗	⊗	⊗
Methyl alcohol	100%	20	⊗	⊗	⊗		40 °C ⊗	⊗	⊗	⊗	⊗
Methylene chloride	100%	20	✗	✗	✗		✗	✗	✗		
Lactic acid, aqueous	to 90%	20	10% ⊗	10% ⊗	10% ⊗	3% ✗	⊗	⊗	⊗	80% ⊗	⊗
Mineral oil			⊗	⊗	⊗		20 °C ⊗	20 °C ⊗	20 °C ⊗		
Sodium chlorate, aqueous	saturated	20	10% ✗	10% ✗	10% ✗		⊗	⊗	⊗		
Sodium hydroxide, aqueous	10%	20	⊗	⊗	⊗	3% ✗	⊗	⊗	⊗	⊗	
Nickel chloride, aqueous	saturated	20	10% ✗	10% ✗	10% ✗		⊗		⊗	⊗	⊗
Nickel sulphate, aqueous	saturated	20	10% ✗	10% ✗	10% ✗		⊗	⊗	⊗		⊗
Nitroglycerin	diluted	20						✗	✗		
Oil and grease		20	⊗	⊗	⊗		✗				
Oleic acid	-	20	⊗	⊗	⊗		⊗	⊗	⊗	⊗	✗
Oxalic acid	all	20	10% ✗	10% ✗	10% ✗	3% ✗	⊗	⊗	⊗	⊗	✗
Ozone	pure		✗	✗	✗		✗	✗	✗		
Petroleum	100%	80	⊗	⊗	⊗		20 °C ⊗	20 °C ⊗	20 °C ✗	✗	
Phosgene, gaseous	100%	20					✗	✗	✗		
Phosphoric acid, aqueous	diluted	20	10% ✗	10% ✗	10% ✗	3% ✗	⊗	⊗	⊗	86% ⊗	✗
Phosphorus pentoxide	100%	20					⊗				
Mercury	pure	20	⊗	⊗	⊗		⊗	⊗	⊗	⊗	⊗
Nitric acid, aqueous	50%	20	✗	✗	✗	3% ✗	✗	✗	✗	30% ⊗	✗
Hydrochloric acid, aqueous	30%	20	20% ✗	20% ✗	20% ✗	3% ✗	⊗	⊗	⊗	15% ⊗	✗
Lubricating grease, ester oil base		110	✗	✗							
Polyphenyl ester base		110	⊗	⊗	⊗						
Lubricating grease, silicone oil base		110	⊗	⊗	⊗						
Carbon disulphide	100%	20	⊗	⊗	⊗		⊗	✗	✗	✗	✗
Sodium sulfide, aqueous	diluted	40					⊗	⊗	⊗		
Sulphuric acid, aqueous	10%	20	✗	✗	✗	3% ✗	50% ⊗	50% ⊗	50% ⊗	⊗	✗
Sea water		40	⊗	⊗	⊗	20 °C ⊗	⊗	⊗	⊗	⊗	20 °C ⊗
Soap solution, aqueous	all	20	diluted ⊗	diluted ⊗	diluted ⊗	⊗	⊗	⊗	⊗	⊗	⊗
Carbon tetrachloride	100%	20	⊗	⊗	⊗		✗	✗	✗	✗	
Toluene	100%	20	⊗	⊗	⊗	✗		✗	✗	✗	✗
Trichloroethylene	100%	20	✗	✗	✗		✗	✗	✗		
Vinyl acetate	100%	20					⊗				
Hydrogen	100%	60	20 °C ⊗	20 °C ⊗	20 °C ⊗		⊗	⊗	⊗		20 °C ⊗
Xylene	100%	20	⊗	⊗	⊗		✗	✗	✗	✗	✗
Zinc chloride, aqueous	diluted	60	10% ✗	10% ✗			⊗	⊗	⊗	50 °C ⊗	20 °C ⊗
Zinc sulphate, aqueous	diluted	60					⊗	⊗	⊗		20 °C ⊗
Zinc chloride, aqueous	diluted	40					⊗	⊗	⊗	✗	20 °C ⊗
Citric acid	to 10%	40	20 °C ⊗	20 °C ⊗	20 °C ⊗	3% ✗	⊗	⊗	⊗	⊗	20 °C ⊗

⊗ Highly resistant
✗ Limited resistance
✗ Not resistant

The information is given to the best of our knowledge and experience, however, it must be regarded as being for guidance purposes only. In many cases, a final judgement can only be made by performing tests under actual working conditions.

T25 Technical tables

T25: registered trademarks



Lapp Group trademarks registered in multiple countries

LAPP®	SKINTOP®
ÖLFLEX®	SKINMATIC®
HITRONIC®	UNITRONIC®
EPIC®	SILVYN®
FLEXIMARK®	ETHERLINE®
SKINDICHT®	



Registered trademarks of other companies

Temflex™ 1500	(3M)	Netware	(Novell)
Scotch™ 1183	(3M)	Novell	(Novell)
NEOPRENE®	(DuPont de Nemours)	Arcnet	(Datapoint)
TEFLON®	(DuPont de Nemours)	Apple	(Apple)
KEVLAR®	(DuPont de Nemours)	Macintosh	(Apple)
TERMI-POINT®	The Whitaker Corporation	HP	(Hewlett Packard)
INTERBUS®	(Phoenix Contact)	SIMATIC®	(SIEMENS)
VariNET®	(Pepperl + Fuchs)	CATAMOUNT®	(Thomas & Betts)
DEC®	(Digital Equipment Corporation)	Mille-Tie™	(Thomas & Betts)
LAT®	(Digital Equipment Corporation)	SHRINK-KON®	(Thomas & Betts)
Thinwire® (net)	(Digital Equipment Corporation)	SHIELD-KON®	(Thomas & Betts)
IBM	(International Business Machines)	TY-FAST™	(Thomas & Betts)
PS/2	(International Business Machines)	TY-GUN™	(Thomas & Betts)
Netview	(International Business Machines)	TY-RAP®	(Thomas & Betts)
AS/400	(International Business Machines)	Safe-Ty™	(Thomas & Betts)
DYMO®	(Sanford GmbH)	TWIST TAIL™	(Thomas & Betts)
VITON®	(DuPont Dow Elastomers)	CIBES®	(Inomec AB)
OS/2	(IBM)	SafetyBUS p	(Pilz)
DeviceNET™	(Open Device Vendors Association, ODVA)	QUICKON®	(PhoenixContact)
Microsoft®	(Microsoft)	Indramat	(Bosch Rexroth)
Microsoft® Windows	(Microsoft)	Ecofast	(Siemens)
SCO®	(Santa Cruz Operation)	DESINA®	VDW (Verein Deutscher Werkzeugmaschinenfabriken - German Machine Tool Builders Association)
Perbunan®	(Bayer AG)	NYLON®	(DuPont de Nemours)

Certificate type		
Product	Gost R	Fire protection
ÖLFLEX® CLASSIC 100	✓	✓
ÖLFLEX® CLASSIC 100 YELLOW	✓	✓
ÖLFLEX® CLASSIC 100 CY	✓	✓
ÖLFLEX® CLASSIC 100 SY	✓	✓
ÖLFLEX® CLASSIC 100 BK Power 0.6/1kV	✓	✓
ÖLFLEX® CLASSIC 110	✓	✓
ÖLFLEX® CLASSIC 110 COLD	✓	✓
ÖLFLEX® CLASSIC 110 ORANGE	✓	✓
ÖLFLEX® CLASSIC 110 CY	✓	✓
ÖLFLEX® CLASSIC 110 SY	✓	✓
ÖLFLEX® CLASSIC 110 BLACK 0.6/1kV	✓	✓
ÖLFLEX® CLASSIC 110 CY BLACK 0.6/1kV	✓	✓
ÖLFLEX® CLASSIC 115 CY	✓	✓
ÖLFLEX® EB	✓	✓
ÖLFLEX® EB CY	✓	✓
ÖLFLEX® 140 H05VV5-F	✓	✓
ÖLFLEX® 140 CY H05VVC4V5-K	✓	✓
ÖLFLEX® 150 QUATTRO	✓	✓
ÖLFLEX® 150 CY QUATTRO	✓	✓
ÖLFLEX® 191	✓	✓
ÖLFLEX® 191 CY	✓	✓
ÖLFLEX® CONTROL TM	✓	✓
ÖLFLEX® CONTROL TM CY	✓	✓
ÖLFLEX® TRAY II	✓	✓
ÖLFLEX® SF	✓	✓
ÖLFLEX® CLASSIC 100 H	✓	✓
ÖLFLEX® CLASSIC 110 H	✓	✓
ÖLFLEX® CLASSIC 110 CH	✓	✓
ÖLFLEX® 120 H	✓	✓
ÖLFLEX® 120 CH	✓	✓
ÖLFLEX® CLASSIC 130 H	✓	✓
ÖLFLEX® CLASSIC 135 CH	✓	✓
ÖLFLEX® CLASSIC 130 H BK 0.6/1 kV	✓	✓
ÖLFLEX® CLASSIC 135 CH BK 0.6/1 kV	✓	✓
ÖLFLEX® ROBUST 200	✓	✓
ÖLFLEX® ROBUST 210	✓	✓
ÖLFLEX® ROBUST 215 C	✓	✓
ÖLFLEX® CLASSIC 400 P	✓	✓
ÖLFLEX® CLASSIC 400 CP	✓	✓
ÖLFLEX® CLASSIC 415 CP	✓	✓
ÖLFLEX® 440 P	✓	✓
ÖLFLEX® 440 CP	✓	✓
ÖLFLEX® 491 P	✓	✓
ÖLFLEX® 491 CP	✓	✓
ÖLFLEX® CONTROL M	✓	✓
ÖLFLEX® 450 P	✓	✓
ÖLFLEX® 500 P	✓	✓
ÖLFLEX® 540 P	✓	✓
ÖLFLEX® 540 CP	✓	✓
ÖLFLEX® 550 P H05BQ-F (NGMH11YÖ-J)	✓	✓
H07RN8-F	✓	✓
H07BN4-F Wind	✓	✓
ÖLFLEX® SERVO 700	✓	✓
ÖLFLEX® SERVO 700 CY	✓	✓
ÖLFLEX® SERVO 710 CY	✓	✓
ÖLFLEX® SERVO 720 CY	✓	✓
ÖLFLEX® SERVO 730/730 CY	✓	✓
ÖLFLEX® SERVO 2YSLCY-JB	✓	✓
ÖLFLEX® SERVO 709 CY	✓	✓
ÖLFLEX® SERVO 9YSLCY-JB	✓	✓
SERVO cable acc. to SIEMENS® standard 6FX 5008	✓	✓
ÖLFLEX® SERVO FD 750 P	✓	✓
ÖLFLEX® SERVO FD 755 P	✓	✓
ÖLFLEX® SERVO FD 755 CP	✓	✓
ÖLFLEX® SERVO FD 755 CP DESINA®	✓	✓
ÖLFLEX® SERVO FD 760 CP	✓	✓
ÖLFLEX® SERVO FD 770 CP	✓	✓
ÖLFLEX® SERVO FD 770 CP DESINA®	✓	✓
ÖLFLEX® SERVO FD 781 CY	✓	✓
ÖLFLEX® SERVO FD 781 P	✓	✓
ÖLFLEX® SERVO FD 781 CP	✓	✓

Certificate type		
Product	Gost R	Fire protection
ÖLFLEX® SERVO FD 785 P	✓	✓
ÖLFLEX® SERVO FD 785 CP	✓	✓
ÖLFLEX® SERVO FD 790 CP	✓	✓
ÖLFLEX® SERVO FD 795 P	✓	✓
ÖLFLEX® SERVO FD 795 CP	✓	✓
SERVO cable acc. to SIEMENS® standard 6FX 7008	✓	✓
SERVO cable acc. to SIEMENS® standard 6FX 8008	✓	✓
SERVO cable acc. to INDRAMAT® standard INK	✓	✓
SERVO cable acc. to LENZE® standard	✓	✓
SPECIAL ENCODER & RESOLVER cables	✓	✓
ÖLFLEX® FD CLASSIC 810	✓	✓
ÖLFLEX® FD CLASSIC 810 CY	✓	✓
ÖLFLEX® FD 820 H	✓	✓
ÖLFLEX® FD 820 CH	✓	✓
ÖLFLEX® FD CLASSIC 810 P	✓	✓
ÖLFLEX® FD CLASSIC 810 CP	✓	✓
ÖLFLEX® FD 855 P	✓	✓
ÖLFLEX® FD 855 CP	✓	✓
ÖLFLEX® FD ROBUST	✓	✓
ÖLFLEX® FD ROBUST C	✓	✓
ÖLFLEX® FD 90	✓	✓
ÖLFLEX® FD 90 CY	✓	✓
ÖLFLEX® FD 891	✓	✓
ÖLFLEX® FD 891 CY	✓	✓
ÖLFLEX® FD 891 P	✓	✓
ÖLFLEX® FD 891 CP	✓	✓
ÖLFLEX® ROBOT 900 P/900 DP	✓	✓
ÖLFLEX® ROBOT F1	✓	✓
ÖLFLEX® TRAFFIC 3GKW	✓	✓
ÖLFLEX® TRAFFIC 3GKW flex	✓	✓
ÖLFLEX® TRAFFIC 3GKW C-flex	✓	✓
ÖLFLEX® TRAFFIC 4GKW-AX plus	✓	✓
ÖLFLEX® TRAFFIC 4GKW-AX plus C-flex	✓	✓
ÖLFLEX® SOLAR XL multi	✓	✓
ÖLFLEX® SOLAR XLS	✓	✓
ÖLFLEX® SOLAR XLV	✓	✓
ÖLFLEX® SOLAR V4A	✓	✓
ÖLFLEX® SOLAR plus	✓	✓
ÖLFLEX® SOLAR XL	✓	✓
ÖLFLEX® SOLAR XLR ST	✓	✓
ÖLFLEX® SOLAR SR	✓	✓
ÖLFLEX® SOLAR plus V4A	✓	✓
ÖLFLEX® PETRO 125 P plus	✓	✓
ÖLFLEX® PETRO 125 BP plus	✓	✓
ÖLFLEX® STAGE BK	✓	✓
ÖLFLEX® POWER REFLEX TR	✓	✓
ÖLFLEX® CRANE NSHTÖU	✓	✓
ÖLFLEX® CRANE VS NSHTÖU	✓	✓
ÖLFLEX® CRANE PUR	✓	✓
ÖLFLEX® CRANE	✓	✓
ÖLFLEX® CRANE 2S	✓	✓
ÖLFLEX® LIFT	✓	✓
ÖLFLEX® LIFT T	✓	✓
ÖLFLEX® LIFT S	✓	✓
ÖLFLEX® CRANE F	✓	✓
ÖLFLEX® LIFT F	✓	✓
ÖLFLEX® HEAT 105 SC	✓	✓
ÖLFLEX® HEAT 105 MC	✓	✓
ÖLFLEX® HEAT 145 SC	✓	✓
ÖLFLEX® HEAT 145 MC	✓	✓
ÖLFLEX® HEAT 145 C MC	✓	✓
ÖLFLEX® HEAT 180 SiF	✓	✓
ÖLFLEX® HEAT 180 SiF/GL (SILFLEX® SiF/GL)	✓	✓
ÖLFLEX® HEAT 180 SiD	✓	✓
ÖLFLEX® HEAT 180 SiZ (SILFLEX® SiZ)	✓	✓
ÖLFLEX® HEAT 180 FZLSi (SILFLEX® FZLSi)	✓	✓
ÖLFLEX® HEAT 180 SiHF (SILFLEX® SiHF)	✓	✓
ÖLFLEX® HEAT 180 H05SS-F EWKF (SILFLEX® H05SS-F EWKF)	✓	✓
ÖLFLEX® HEAT 180 MC (formerly ÖLFLEX® HEAT 180 UL/CSA or SILFLEX® UL/CSA)	✓	✓



ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX



T26 Technical tables

T26: products with certification for Russia

Certificate type		
Product	Gost R	Fire protection
ÖLFLEX® HEAT 180 EWKF (SILFLEX® EWKF)	✓	✓
ÖLFLEX® HEAT 180 EWKF + C (SILFLEX® EWKF + C)	✓	✓
ÖLFLEX® HEAT 180 GLS (ÖLFLON® SiHF/GLS)	✓	✓
ÖLFLEX® HEAT 205 SC (ÖLFLON® FEP)	✓	✓
ÖLFLEX® HEAT 205 MC (ÖLFLON® FEP)	✓	✓
ÖLFLEX® HEAT 205 PTFE/FEP (ÖLFLON® FEP/PTFE)	✓	✓
ÖLFLEX® HEAT 260 SC (ÖLFLON® PTFE)	✓	✓
ÖLFLEX® HEAT 260 MC (ÖLFLON® PTFE)	✓	✓
ÖLFLEX® HEAT 260 C MC (ÖLFLON® PTFE/C)	✓	✓
ÖLFLEX® HEAT 260 GLS (ÖLFLON® PTFE/GLS)	✓	✓
ÖLFLEX® HEAT 350 SC (Zero-Flame 350 SC)	✓	✓
ÖLFLEX® HEAT 350 MC (Zero-Flame 350 SC)	✓	✓
ÖLFLEX® HEAT 1565 SC (Zero-Flame SC 1565)	✓	✓
UNITRONIC® LiYY	✓	✓
UNITRONIC® LiYCY	✓	✓
UNITRONIC® LiYCY-CY	✓	✓
UNITRONIC® LiYY (TP)	✓	✓
UNITRONIC® LiYCY (TP)	✓	✓
UNITRONIC® LiYY A (formerly UNITRONIC® LiYY UL/CSA) DIN colour code	✓	✓
UNITRONIC® LiYCY A (formerly UNITRONIC® LiYCY UL/CSA) DIN colour code		✓
UNITRONIC® LiYCY A (formerly UNITRONIC® LiYCY (TP) UL/CSA) DIN colour code		✓
UNITRONIC® 300	✓	✓
UNITRONIC® 300 CY	✓	✓
UNITRONIC® PUR CP	✓	✓
UNITRONIC® PUR CP TP	✓	✓
UNITRONIC® LiFYCY (TP)		✓
UNITRONIC® LiHH	✓	✓
UNITRONIC® LiHCH	✓	✓
UNITRONIC® LiHCH (TP)	✓	✓
J-YY.....BD CU conductor indoor telephone cable	✓	✓
J-Y(ST)Y...x 2 x 0.6 LG indoor telephone cable	✓	✓
J-Y(ST)Y...x 2 x 0.8 LG indoor telephone cable	✓	✓
UNITRONIC® J-Y(ST)Y...x 2 x ... LG colour code	✓	✓
UNITRONIC® J-Y(ST)Y...x 2 x 0.6 LG fire alarm cable	✓	✓
UNITRONIC® J-Y(ST)Y...x 2 x 0.8 LG fire alarm cable	✓	✓
UNITRONIC® J-2Y(ST)YST III BD	✓	✓
UNITRONIC® JE-LiYCY	✓	✓
UNITRONIC® JE-Y(ST)Y...BD	✓	✓
UNITRONIC® J-H(ST)H...BD	✓	✓
UNITRONIC® J-H(ST)H...BD fire alarm cable	✓	✓
UNITRONIC® EB CY (TP) twisted pair	✓	✓
UNITRONIC® EB JE-Y(ST)Y...BD	✓	✓
UNITRONIC® EB JE-LiYCY...BD	✓	✓
UNITRONIC® 100	✓	✓
UNITRONIC® 100 CY	✓	✓
UNITRONIC® CY PiDY (TP)	✓	✓
UNITRONIC® LiYD11Y	✓	✓
UNITRONIC® ST	✓	✓
UNITRONIC® RE-2Y(ST)Yv	✓	✓
UNITRONIC® RE-2Y(ST)Yv PiMF	✓	✓
UNITRONIC® RD-Y(ST)Y	✓	✓
UNITRONIC® RD-Y(ST)Yv	✓	✓
UNITRONIC® FD	✓	✓
UNITRONIC® FD CY	✓	✓
UNITRONIC® FD P Profibus HYBRID	✓	✓
UNITRONIC® FD P plus A (formerly UNITRONIC® FD P plus UL/CSA)	✓	✓
UNITRONIC® FD CP plus A (formerly UNITRONIC® FD CP plus UL/CSA)	✓	✓
UNITRONIC® FD CP (TP) plus		✓
UNITRONIC® FD CP (TP) plus A (formerly UNITRONIC® FD CP (TP) plus UL/CSA)	✓	✓
UNITRONIC® Li2YCY (TP)	✓	✓
UNITRONIC® Li2YCYv (TP)	✓	✓
UNITRONIC® Li2YCY PiMF	✓	✓
UNITRONIC® Li2YCY (TP) fine-wire		✓
UNITRONIC® LAN type 1A 600 MHz	✓	
UNITRONIC® LAN Twinax	✓	

Certificate type		
Product	Gost R	Fire protection
UNITRONIC® LAN 10BASE 2 DEC		
UNITRONIC® LAN 10BASE 5 DEC		
UNITRONIC® LAN UTP 200 MHz CAT.5e 4 x 2 x AWG24	✓	✓
UNITRONIC® LAN FTP 200 MHz CAT.5e 4 x 2 x AWG24		✓
UNITRONIC® LAN FTP-H 200 MHz CAT.5e 4 x 2 x AWG24		✓
UNITRONIC® LAN FTP-H 200 MHz CAT.5e 4 x 2 x AWG26 flexible for patch cable		✓
UNITRONIC® LAN STP/S PiMF 500 MHz CAT.6e 4 x 2 x AWG23/1		✓
UNITRONIC® LAN STP/S PiMF 500 MHz CAT.6e 4 x 2 x AWG26/1		✓
UNITRONIC® LAN STP/S -H PiMF 500 MHz CAT.6e 4 x 2 x AWG23/1		✓
UNITRONIC® LAN STP/S-H PiMF 500 MHz CAT.6e 4 x 2 x AWG26/1 flexible for patch cable		✓
UNITRONIC® LAN STP/S-H PiMF 600 MHz CAT.7 4 x 2 x 23AWG		✓
UNITRONIC® LAN STP/S-H PiMF 600 MHz CAT. 7 DUPLEX		✓
UNITRONIC® LAN STP/S 1.2 GHz Cat.7 4 x 2 x 22AWG LANmark-7 CAT.7 halogen-free		✓
UNITRONIC® BUS LD		✓
UNITRONIC® BUS LD A (formerly UNITRONIC® BUS LD UL/CSA)		✓
UNITRONIC® BUS FD P LD		✓
UNITRONIC® BUS FD P LD A (formerly UNITRONIC® BUS FD P LD UL/CSA)		✓
UNITRONIC® BUS IBS	✓	✓
UNITRONIC® BUS P COMBI IBS	✓	✓
UNITRONIC® BUS IBS A (formerly UNITRONIC® BUS IBS UL/CSA)		✓
UNITRONIC® BUS P COMBI IBS A (formerly UNITRONIC® BUS P COMBI IBS UL/CSA)		✓
UNITRONIC® BUS FD P IBS	✓	✓
UNITRONIC® BUS FD P COMBI IBS	✓	✓
UNITRONIC® BUS FD P IBS A (formerly UNITRONIC® BUS FD P IBS UL/CSA (CMX))		✓
UNITRONIC® BUS FD P COMBI IBS A (formerly UNITRONIC® BUS FD P COMBI IBS UL/CSA (CMX))		✓
UNITRONIC® BUS Yv IBS	✓	✓
UNITRONIC® BUS Yv COMBI IBS	✓	✓
UNITRONIC® BUS Yv IBS A (formerly UNITRONIC® BUS Yv IBS UL/CSA (CMX))		✓
UNITRONIC® BUS Yv COMBI IBS A (formerly UNITRONIC® BUS Yv COMBI IBS UL/CSA (CMX))		✓
UNITRONIC® BUS PB A (formerly UNITRONIC® BUS L2/FIP UL/CSA)		✓
UNITRONIC® BUS PB A (formerly UNITRONIC® BUS L2/FIP UL/CSA)	✓	✓
UNITRONIC® BUS FD P L2/FIP	✓	✓
UNITRONIC® BUS PB FD P FC A (formerly UNITRONIC® BUS FD P L2/FIP FC UL/CSA (CMX))	✓	✓
UNITRONIC® BUS PB FD P COMBI	✓	✓
UNITRONIC® BUS PB Yv	✓	✓
UNITRONIC® BUS PB A 7-wire (formerly UNITRONIC® BUS L2/FIP UL/CSA 7-wire)		✓
UNITRONIC® BUS PB COMBI (formerly UNITRONIC® BUS COMBI L2/FIP)		✓
UNITRONIC® BUS PB 7-wire halogen-free (formerly UNITRONIC® BUS L2/FIP 7-wire halogen-free)		✓
UNITRONIC® BUS PB PE (formerly UNITRONIC® BUS L2/FIP PE)		✓
UNITRONIC® BUS PB YY (formerly UNITRONIC® BUS YY L2/FIP)		✓
UNITRONIC® BUS PB ARM (formerly UNITRONIC® BUS L2/FIP ARM)		✓
UNITRONIC® BUS PB FC A (formerly UNITRONIC® BUS L2/FIP FC UL/CSA (CMX))		✓
UNITRONIC® BUS PB Burial FC (formerly UNITRONIC® BUS L2/FIP Burial FC)		✓
UNITRONIC® BUS PB Festoon A (formerly UNITRONIC® BUS L2/FIP Festoon UL/CSA (CM))		✓
UNITRONIC® BUS PB H FC A (formerly UNITRONIC® BUS L2/FIP H FC UL/CSA (CM))		✓
UNITRONIC® BUS PB PE FC (FOOD) (formerly UNITRONIC® BUS L2/FIP PE FC (FOOD))		✓

Certificate type		
Product	Gost R	Fire protection
UNITRONIC® BUS PB PUR FC A (formerly UNITRONIC® BUS L2/FIP PUR FC UL/CSA)		✓
UNITRONIC® BUS PB FC TORSION A (formerly UNITRONIC® BUS L2/FIP FC TORSION UL/CSA (CM))		✓
UNITRONIC® BUS PB 105 (formerly UNITRONIC® BUS L2/FIP 105)		✓
UNITRONIC® BUS PB ROBUST FR (formerly UNITRONIC® BUS L2/FIP ROBUST)		✓
UNITRONIC® BUS PB FRNC FC (formerly UNITRONIC® BUS HFFR L2/FIP FC)		✓
UNITRONIC® BUS PB PA (BU) (BK) (formerly UNITRONIC® BUS PA (BU) (BK)) blue/black		✓
UNITRONIC® BUS PB PA ARM (BK) (formerly UNITRONIC® BUS PA ARM (BK))		✓
UNITRONIC® BUS PB PA FC (BK) A (formerly UNITRONIC® BUS PA FC (BK) UL/CSA (CMX))		✓
UNITRONIC® BUS FF		✓
UNITRONIC® BUS CCL		✓
UNITRONIC® BUS ASI PUR		✓
UNITRONIC® BUS ASI (G)		✓
UNITRONIC® BUS ASI (TPE)		✓
UNITRONIC® BUS ASI (TPE) A (formerly UNITRONIC® BUS ASI (TPE) UL/CSA)		✓
UNITRONIC® BUS ASI (PVC) A (formerly UNITRONIC® BUS ASI (PVC) UL/CSA CL2)		✓
UNITRONIC® BUS ASI PUR MARINE		✓
UNITRONIC® BUS DN THICK CABLE Y (formerly UNITRONIC® BUS DEVICENET THICK CABLE (PVC) UL/CSA (CMG))		✓
UNITRONIC® BUS DN THIN CABLE Y (formerly UNITRONIC® BUS DEVICENET THIN CABLE (PVC) UL/CSA (CMG))		✓
UNITRONIC® BUS DN THICK FD Y (formerly UNITRONIC® BUS FD Y DEVICENET THICK CABLE (PUR) UL/CSA (CMG))		✓
UNITRONIC® BUS DN THIN FD Y (formerly UNITRONIC® BUS FD Y DEVICENET THIN CABLE (PVC) UL/CSA (CMG))		✓
UNITRONIC® BUS DN THICK FD P (formerly UNITRONIC® BUS FD P DEVICENET THICK CABLE (PUR) UL/CSA (CMX))		✓
UNITRONIC® BUS DN THIN FD P (formerly UNITRONIC® BUS FD P DEVICENET THIN CABLE (PUR) UL/CSA (CMX))		✓
UNITRONIC® BUS DN THICK FRNC (formerly UNITRONIC® BUS DEVICENET THICK CABLE FRNC, UL/CSA (CMG) (halogen free))	✓	✓
UNITRONIC® BUS DN THIN FRNC (formerly UNITRONIC® BUS DEVICENET THIN CABLE FRNC, UL/CSA (CMG) (halogen free))	✓	✓
UNITRONIC® BUS CAN (formerly UNITRONIC® BUS CAN UL/CSA (CMX))	✓	✓
UNITRONIC® BUS CAN FD (formerly UNITRONIC® BUS FD P CAN UL/CSA (CMX))	✓	✓
UNITRONIC® BUS EIB 2 x 2 x 0.8		✓
UNITRONIC® BUS EIB COMBI 2 x 2 x 0.8 + 3 x 1.5 (formerly UNITRONIC® BUS COMBI EIB 2 x 2 x 0.8 + 3 x 1.5)		✓
UNITRONIC® BUS EIB H 2 x 2 x 0.8 (formerly UNITRONIC® BUS EIB-H 2 x 2 x 0.8)		✓
UNITRONIC® BUS EIB COMBI H 2 x 2 x 0.8 + 3 x 1.5 (formerly UNITRONIC® BUS COMBI EIB-H 2 x 2 x 0.8 + 3 x 1.5)		✓
UNITRONIC® BUS SAFETY 3 x 0.75		✓
UNITRONIC® BUS SAFETY A 3 x 0.75 (formerly UNITRONIC® BUS SAFETY UL/CSA 3 x 0.75)		✓
UNITRONIC® BUS SAFETY FD P 3 x 0.75 (formerly UNITRONIC® BUS FD P SAFETY 3 x 0.75)		✓
RG 58 C/U		✓
RG 174 A/U		✓
RG 178 B/U		✓
RG 188 A/U		✓
RG-213 /U		✓
RG-214 /U		✓
RG-223 /U		✓
RG -6 A/U		✓
RG 11 A/U		✓
RG 11 A/U outdoor		✓
RG 187 A/U		✓
RG 59 C/U		✓
RG 62 A/U		✓

Certificate type		
Product	Gost R	Fire protection
RG 71 B/U		✓
H 05 RR - F	✓	
H 05 RN - F	✓	✓
H 07 RN - F	✓	✓
NSSHÖU	✓	✓
H07ZZ-F	✓	✓
H01N2-D	✓	✓
LiFY measurement cores	✓	✓
LiFY highly flex. measurement cores	✓	✓
ESUY copper earthing cable	✓	✓
H00V3-D copper earthing cable	✓	✓
NSGAFÖU	✓	✓
NSHXAFÖ	✓	✓
NiCr/Ni PVC/PVC compensating cable	✓	✓
LiY stranded hook-up wire	✓	✓
H05 V - K single core	✓	✓
H07 V - K single core	✓	✓
Multi-Standard 1M	✓	✓
Multi-Standard 2.1M	✓	✓
Multi-Standard 2.2M	✓	✓
H05Z-K single core 90° / 110°	✓	✓
H07Z-K single core 90° / 110°	✓	✓
NYM -O/-J	✓	✓
NHXMH	✓	✓
NYN	✓	✓
NYCY	✓	✓
NYCWY	✓	✓
NAYY-J	✓	
ETHERLINE® H CAT.5e 2 x 2 x 24AWG		✓
ETHERLINE® P CAT.5e 2 x 2 x 24AWG		✓
ETHERLINE® Y UL/CSA CAT.5e 2 x 2 x 22AWG		✓
ETHERLINE® Y FC UL/CSA CAT.5e 2 x 2 x 22AWG		✓
ETHERLINE® YY UL/CSA CAT.5e 2 x 2 x 22AWG		✓
ETHERLINE® Y2Y ARM UL/CSA CAT.5e 2 x 2 x 22AWG		✓
ETHERLINE® H FLEX CAT.5e 2 x 2 x 26AWG		✓
ETHERLINE® P FLEX CAT.5e 2 x 2 x 26AWG		✓
ETHERLINE® FD P CAT.5 2 x 2 x 26AWG		✓
ETHERLINE® Y FLEX FC UL/CSA CAT.5e 2 x 2 x 22AWG		✓
ETHERLINE® FRNC HYBRID FLEX CAT.5 2 x 2 x 22AWG		✓
ETHERLINE® FD P FC CAT.5 2 x 2 x 22AWG		✓
ETHERLINE® TORSION CAT.5 2 x 2 x 22AWG		✓
ETHERLINE® H FLEX CAT.5e 4 x 2 x 26AWG		✓
ETHERLINE® P FLEX CAT.5e 4 x 2 x 26AWG		✓
ETHERLINE® FD P CAT.5 4 x 2 x 26AWG		✓
ETHERLINE® H CAT.5e 4 x 2 x 24AWG		✓
ETHERLINE® P CAT.5e 4 x 2 x 24AWG		✓
ETHERLINE® H-H CAT.5e 4 x 2 x 24AWG		✓
HITRONIC® POF SIMPLEX PE		✓
HITRONIC® POF SIMPLEX PA		✓
HITRONIC® POF SIMPLEX PA-PE		✓
HITRONIC® POF SIMPLEX PUR-PE		✓
HITRONIC® POF SIMPLEX S PUR-PE		✓
HITRONIC® POF SIMPLEX S PUR-PA		✓
HITRONIC® POF SIMPLEX S PVC-PE		✓
HITRONIC® POF SIMPLEX 115°C XPE		✓
HITRONIC® POF SIMPLEX FD PUR-PE		✓
HITRONIC® POF SIMPLEX PVC (formerly HITRONIC® POF SIMPLEX PVC UL)		✓
HITRONIC® POF DUPLEX PVC (formerly HITRONIC® POF DUPLEX PVC UL)		✓
HITRONIC® POF DUPLEX PE		✓
HITRONIC® POF DUPLEX PUR-PE		✓
HITRONIC® POF DUPLEX PVC-PE		✓
HITRONIC® POF DUPLEX PVC-PVC		✓
HITRONIC® POF DUPLEX HEAVY PUR-PE		✓
HITRONIC® HYBRID FD P DESINA _®		✓
HITRONIC® BUS PCF DUPLEX 200/230		✓
HITRONIC® BUS PCF P DUPLEX indoor 200/230		✓
HITRONIC® BUS PCF DUPLEX outdoor 200/230		✓
HITRONIC® HUN 1000		✓
HITRONIC® HUN 1500		✓

T27 Technical tables

T27: fire load calculations for cables



Fire load values of cables

Inclusion in the calculation of fire loads on and in buildings.

Current regulations and standards governing the assessment and restriction of consequential fire risks vary from country to country. In Germany, the valid state building regulations stipulate the inclusion of specific thresholds with regard to the accumulation of combustible parts of the building installation – which also includes cables – directly connected to the building. See supplement 1 to VDE 0108 Part 1.

Flexible cables are not intended for fixed installation in buildings. However, the approximate fire load of such cables can be calculated as follows:

- look up the “Approx. weight in kg/km” in the ordering table on the relevant product page of the catalogue and
- subtract the copper content (see column “Copper index in kg/km” in the catalogue) from this value. This results in the mass of the combustible insulation and sheathing material for the relevant article in kg/km.
- divide this value by a factor of 1000 to obtain the combustible mass in kg/m.
- multiply this value by the material-specific calorimetric value (in kWh/m or MJ/m) of the cable or wire as per table 27-1 below.

Result: Average fire load value of this cable in kWh/m or MJ/m:

Material type	Fire load value in kWh/kg Average	Fire load value in MJ/kg Average
PVC	5.8	21
PE	12.2	44
PS	11.5	42
PA	8.1	26
PP	12.8	46
PUR	6.4	23
TPE-E	6.3	23
TPE-O	7.1	26
NR	6.4	23
SIR	5.0	18
EPR	6.4	23
EVA	5.9	21
CR	4.6	17
CSM	5.9	21
PVDF	4.2	15
ETFE	3.9	14
FEP	1.4	5
PFA	1.4	5
PTFE	1.4	5
HFFR	4.8	17
HFFR cross-linked	4.2	15

NOTE: The above calculation can only be used for cables of which the combustible content is made up entirely of the same material type and which contain no additional metals other than the copper content. Specific fire load values for the following products are available in tabular format on request: ÖLFLEX® CLASSIC 100 H, ÖLFLEX® CLASSIC 110 H, ÖLFLEX® CLASSIC 110 CH, ÖLFLEX® 120 H, ÖLFLEX® 120 CH, ÖLFLEX® FD 820 H and ÖLFLEX® FD 820 CH. Conversions: 1 kWh/m = approx. 3.6 MJ/m; 1 MJ/m = approx. 0.277 kWh/m.

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX



Materials of cables and wires exposed to ionising radiation

As a rule, cables are only tested for radiation resistance if their intended usage actually includes exposure to ionising radiation. For all other cables, specifications as to radiation resistance can thus only be made for the materials normally employed for such cables. As a result, these values are not representative of the durability of a complete cable.

However, the values do provide a basic point of reference and are particularly useful for relative comparisons of different products.

The radiation resistance of materials is defined via the Radiation Index (RI) in IEC 544-4 as the base 10 logarithm of the absorbed dose in grays (rounded to two decimal places) at which the elongation at break is reduced to $\geq 50\%$ of the original value.

Lapp Kabel table T28 lists the typical maximum dose of the individual materials in grays (or rad) of a gamma radiation source at which the elongation at break of the test sample remains above 50% of its unaged value.

Conversions:
100 kGy = approx. 10 Mrad; 1 Gy = 1 J/kg; 1 Mrad = approx. 10 kGy

Material type	Radiation resistance in Gy approx.	Radiation resistance in rad approx.
PVC	8×10^5	8×10^7
PE LD	1×10^5	1×10^7
PE HD	7×10^4	7×10^6
VPE (XLPE)	1×10^5	1×10^7
PS	5×10^6	5×10^8
PA	1×10^5	1×10^7
PP	1×10^3	1×10^5
PETP	1×10^7	1×10^7
PUR	5×10^5	5×10^7
TPE-E	1×10^5	1×10^7
TPE-O	1×10^5	1×10^7
NR	8×10^5	8×10^7
SIR	2×10^5	2×10^7
EPR	1×10^6	1×10^8
EVA	1×10^5	1×10^7
CR	2×10^5	2×10^7
CSM	5×10^4	5×10^6
PVDF	1×10^5	1×10^7
ETFE	1×10^5	1×10^7
FEP	3×10^3	3×10^5
PFA	1×10^3	1×10^5
PTFE	1×10^3	1×10^5

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

T29 Technical tables

T29: using UL-approved cables



Table 29-1: UL mark on cables and wires and its significance with regard to intended usage

or (UL) UL Listing Mark for listed cables & wires

The intended use of cables and wires in this category is for fixed wiring in residential buildings as well as for commercial and industrial use. Listed cables and wires not only have to meet individual UL product standards, but must also comply with the relevant articles of the National Electrical Code (NEC). The NEC contains detailed specifications relating to the correct usage of listed cables and wires.

Such products can be used both for factory wiring of electrical equipment, devices, appliances and machines as well as for on-site or field wiring of industrial machinery and systems according to NFPA 79.

Typical codes for listed cables and wires:

MTW, TC, PLTC, CM, CL2, THHN, THWN; SO, SOO, ST, STO, SJT, SJTO.

A selection of Lapp Kabel products with multiple listings/approvals:

ÖLFLEX® CONTROL TM, ÖLFLEX® CONTROL M, ÖLFLEX® TRAY II, ÖLFLEX® CHAIN 879, ÖLFLEX® AUTO-X; UNITRONIC® BUS, UNITRONIC® 300. See table T29-4 for more details.

Approval mark on product:

(UL) = UL Listing Mark.

UL Recognition Mark for AWM cables and wires

Appliance Wiring Material (abbrev. "AWM") comprises cables and wires intended for fully factory-wired electrical equipment, devices, appliances, control cabinets and industrial machinery.

AWM is not intended for direct on-site wiring (field wiring). Cables and wires with UL AWM style labelling must be used for the applications stipulated by the relevant style designation.

Quick and simple: check Lapp UL approvals online

Any Internet user can visit <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm> to gain direct access to the Online Certification Directory of Underwriters Laboratories. Our UL approvals can be viewed by entering "U. I. Lapp" or "Lapp USA" in the "Company name" field; the individual File Numbers and Control Category Numbers (CCN) are also provided.

AWM-recognized cables and wires can only be used for the applications listed in their associated style description (www.ul.com).

If the manufacturer of an electrical device, appliance or machine wishes to obtain an officially recognised "UL listing" to release the relevant item as a series product or acquire a "field labelling" for a stand-alone machine or system, the body tasked with the certification (the National Recognized Testing Laboratory or NRTL) must be provided with all construction-relevant documentation.

The entire listing process will be significantly faster, simpler and cheaper if all installed cables and wires are already "listed" or "recognized", as any cables that do not meet these criteria will have to be tested for suitability.

NOTE:

Multi-standard cables and wires

Multi-standard cables with mm² and AWG/MCM conductor sizes generally have special conductor stranding, as a result of which one of the specified conductor cross-sections is always a little larger (oversized). In individual cases, this may cause problems when connecting terminals designed for AWG conductor sizes.

For further information on the topic of this appendix, see:

Table T11 "Conductor resistances and conductor stranding (metric)"
Table T16 "Anglo-American dimensions" Table T13 "Current rating of cables according to NFPA 70 (National Electrical Code) NFPA 79 Electrical Standard of Industrial Machinery".



Table 29-2: NFPA – using cables in industrial machinery in the USA (part 1)

NFPA 79 is the section of the National Electric Code (NEC®) which includes the requirements for electrical wiring of industrial machinery. NFPA 79 generally applies to electrical components used in individual machines and machine configurations operating together (machine groups).

Examples of industrial machinery include: Machine tools, injection moulding, woodworking, assembly and material handling machines – generally, any machines for material processing and transport in the broader sense, but with a clear distinction from “passenger transport”, for example.

The application area of NFPA 79 includes all electrical and electronic components of a machine with a maximum nominal voltage of 600 V.

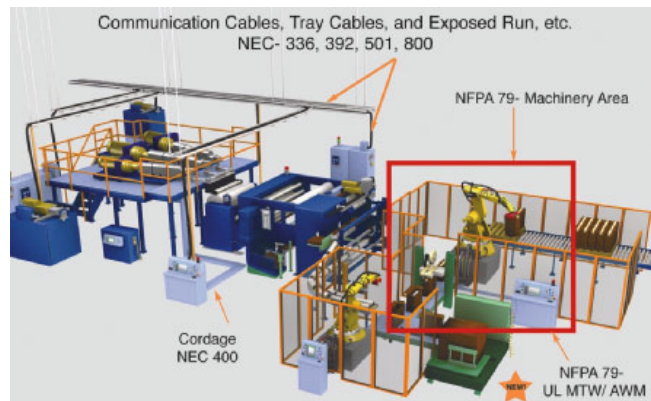
Important aspects of NFPA 79 were revised in 2006. One of the main objectives of this revision was the further harmonisation of NFPA 79 with its European “counterpart”, IEC/EN 60204. As a result, the chapter structure of NFPA 79 has been aligned with IEC/EN 60204 and safety standards adopted to represent the latest state of the art.

In NFPA 79 – Edition 2007 AWM, single cores or multi-core AWM cables were explicitly prohibited, with the exception of those with a discretionary provision. The new Edition 2012 greatly relaxes the strict restrictions regarding the use of AWM cables. In future, AWM cables will be permitted, provided that at least one of the following conditions is met:

- cable as part of a, for this purpose, “listed assembly”
- cable specified for use in listed system or machine and utilised according to the instructions of the component supplier
- cable meets all design requirements stipulated by NFPA 79 (sections 12.2 to 12.6) incl. modifications with regard to conductor stranding, flame retardancy, insulation wall thickness and insulation/sheath labelling

“Machine Tool Wire (MTW)” – as a single-core or multi-core cable is a permitted alternative. In the case of wiring between elements of a machine group, “Tray Cable” (TC) is often a standard-compliant and cost-effective solution.

In the newly revised version of NFPA 79, particular significance is attached to the selection of cables. This reflects the high demands placed on the reliability of industrial machines as well as the frequently draconian impact of liability claims. The global means of cable procurement also carry a certain amount of risk. It is therefore all the more important that the relevant technical standards are met.



This schematic of an industrial machine shows the main applications of cables and wires with reference to the relevant sections in NEC®/NFPA. “NEC®” is a trademark of the National Fire Protection Association (NFPA).

We are committed to informing our customers of any significant changes to important technical standards. For this purpose, we work closely together with our colleagues at the production and sales location in Florham Park, New Jersey (www.lappusa.com).

Lapp offers a range of products with the “UL – Recognition Mark” and “UL – Listing”, fully compliant with the specifications of NFPA 79, Edition 2012.

Examples are: ÖLFLEX® CONTROL M, ÖLFLEX® CONTROL TM, ÖLFLEX® TRAY II. Further information on this topic can be found at: www.lappkabel.de → SERVICE → Knowledge Centre → NFPA 79.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

T29 Technical tables

T29: using UL-approved cables



Table 29-3: NFPA – using cables in industrial machinery in the USA (part 2)

The following general rules apply to the construction and operation of machinery in the USA:

The machinery must comply with federal safety laws issued by the Occupational Safety and Health Administration (OSHA.: www.osha.gov) as well as the national or local codes (legal regulations) applicable at the installation location.

Machines are only deemed safe if they have been constructed and manufactured in accordance with the relevant standards (NFPA 70, NFPA 79, ...) and their safety both tested and confirmed by a Nationally Recognized Testing Laboratory (NRTL: www.osha.gov/dts/otpca/nrtl/). Meeting of the above conditions must be clearly indicated to the local inspector/safety officer/authority (Authority Having Jurisdiction, AHJ) by the attachment of an NRTL label (listing or field labelling) to the machine.

NFPA 79 Electrical Standard for Industrial Machinery – Edition 2012

This important standard is published by the National Fire Protection Association (www.nfpa.org).

It is basically the US counterpart of IEC 60204-1, which equates to the European standard EN 60204-1 for machine safety. Section 12 deals with the application of conductors, cables and flexible wires. As a rule, only “listed cables” must be used – although “UL AWM recognized cables & wires” can be used for “factory-wired equipment” if one of the conditions specified in table T29-2 is met.

Below are a few general rules:

- Motor cables must be configured for at least 115% of the nominal motor voltage.
- The minimum conductor cross-section for power circuits is 14 AWG, or 18 AWG in special cases.
- The minimum conductor cross-section for (mains voltage) control circuits is 18 AWG
- The minimum conductor cross-section for electronic circuits of programmable logic controllers (I/O) is 24 AWG.
- Maximum fill level of 50% for cables in cable ducts.
- Cables must be installed such that they are protected against mechanical, chemical and thermal influences.

Outside of control cabinets, distribution boxes or other closed electrical installations/equipment, this is assured if the lines are installed in closed cable channels (raceways/wireways/ducts), pipes (conduits) or flexible hoses (flexible conduits), which must be made of metal or flame-resistant plastic and lead all the way up to the equipment. Any lines laid on (open) cable conduits or cable trays must be approved for this purpose (cable tray rating).

In the case of industrial installations, in which permanent maintenance and repair by qualified electricians is assured, cables with the addition “open wiring” or “ER” (which stands for “exposed run” and replaces the previous designation “open wiring”) can also be laid directly up to the equipment without the need for additional mechanical protection [NEC® < NFPA 70 > 2011, Article 336.10 (7)].

The use of cables with such ratings – such as the Lapp Kabel types: ÖLFLEX® CONTROL M + TM, ÖLFLEX® TRAY II, ÖLFLEX® AUTO X, ÖLFLEX® AUTO I, UNITRONIC® 300 – enables significant material and time savings during installation.

In many sections, NFPA 79 refers to the US National Electrical Code (NEC®). This applies particularly to wiring between machines or machine groups where the cable routing utilises the building structures. In such cases, the wiring must comply with the appropriate wiring method specified by the NEC®.

NEC (National Electrical Code) Handbook Edition NEC® < NFPA 70 > 2011

This code contains the standard NFPA 70. As well as the normative content, the handbook also provides many useful explanations, tables, graphics, photos and comments. Both the NEC® and the NFPA 79 standard can be ordered via the website at www.nfpa.org.

UL 508-A

In addition to the aforementioned basic and technical standards, there are also special standards such as UL 508-A, according to which control cabinets for machines can also be configured and labelled on the basis of this separate standard for industrial control panels (www.ul.com).



Table 29-4: overview of corresponding products in this catalogue – type "Listed"

Lapp cable type with UL listing	Listed type	Voltage in V	Temperature in °C	Material	Compliant with NFPA 79 Ed. 2012
Multi-Standard SC 2.1	MTW	600	90	PVC	✓
Multi-Standard SC 2.2	MTW	600	90	PVC	✓
ÖLFLEX® SOLAR XLR 4703 600 V	PV	600	90	XLPE	✓
ÖLFLEX® CONTROL M	MTW, TC-ER, WTTTC	600, 1000	90	Special TPE compound	✓
ÖLFLEX® FORTIS	MTW, TC-ER, WTTTC	600, 1000	90	Special PVC compound	✓
ÖLFLEX® CONTROL TM	MTW, TC-ER, WTTTC	600, 1000	90	Special PVC compound	✓
ÖLFLEX® CONTROL TM CY	MTW, TC-ER, WTTTC	600, 1000	90	Special PVC compound	✓
ÖLFLEX® Tray II	MTW, TC-ER or DP-1, WTTTC	600, 1000	90	Special PVC compound	✓
ÖLFLEX® Tray II CY	MTW, TC-ER or DP-1, WTTTC	600, 1000	90	Special PVC compound	✓
ÖLFLEX® CHAIN 879	MTW	600	90	PVC Oil Res II	✓
ÖLFLEX® CHAIN 879 CY	MTW	600	90	PVC Oil Res II	✓
UNITRONIC® 300	CMG, PLTC, Open Wiring, Oil Res 1	300	105	PVC	✓
UNITRONIC® 300 CY	CMG, PLTC, Open Wiring, Oil Res 1	300	105	PVC	✓
UNITRONIC® FD CP plus	CMX	250	75	PUR	✓
UNITRONIC® FD CP (TP) plus	CMX	250	75	PUR	✓
UNITRONIC® BUS IBS A	CMX	250	70	PVC	✓
UNITRONIC® BUS IBS P COMBI	CMX	250	75	PUR	✓
UNITRONIC® BUS IBS FD P	CMX	250	70	PUR	✓
UNITRONIC® BUS IBS FD P COMBI	CMX	450	70	PUR	✓
UNITRONIC® BUS IBS Yv	CMX	250	75	PVC	✓
UNITRONIC® BUS IBS Yv COMBI	CMX	250	75	PVC	✓
UNITRONIC® BUS LD	CMX	250	70	PVC	✓
UNITRONIC® BUS LD FD P	CMX	250	75	PUR	✓
UNITRONIC® BUS PB A	CMX	250	75	PVC	✓
UNITRONIC® BUS PB FC	CMG	100	60	PVC	✓
UNITRONIC® BUS PB 7-W FC	CMX	250	75	PVC	✓
UNITRONIC® BUS PB H FC	CMX	100	75	FRNC	✓
UNITRONIC® BUS PB P FC	CMX	100	75	PUR	✓
UNITRONIC® BUS PB FD P	CMX	250	70	PUR	✓
UNITRONIC® BUS PB TORSION	CMX	300	75	PUR	✓
UNITRONIC® BUS PB FESTOON	CMG	600	75	PVC	✓
UNITRONIC® BUS PB FRNC FC	CMG	250	60	PUR	✓
UNITRONIC® BUS PB FD FRNC FC	CMG	250	60	PUR	✓
UNITRONIC® BUS PA (BU)	CMX	100	75	PVC	✓
UNITRONIC® BUS PA (BK)	CMX	100	75	PVC	✓
UNITRONIC® BUS PA FC	CMG	100	75	PVC	✓
UNITRONIC® BUS FF 3 (YE)	CMG/PLTC	300	105	PVC	✓
UNITRONIC® BUS FF 3 ARM	CMG/PLTC	300	105	PVC	✓
UNITRONIC® BUS FF 2	CMG	300	105	PVC	✓
UNITRONIC® BUS CC	CM/PLTC	300	75	PVC	✓
UNITRONIC® BUS CAN	CMX	250	75	PVC	✓
UNITRONIC® BUS CAN FD P	CMX	250	70	PUR	✓
UNITRONIC® BUS ASI (PVC)	CMG	300	80	PVC	✓
UNITRONIC® BUS SAFETY	CMX	250	75	Compound	✓
UNITRONIC® BUS DN THICK FRNC	CMG	300	80	FPE FRNC	✓
UNITRONIC® BUS DN THIN FRNC	CMG	300	80	FPE FRNC	✓
UNITRONIC® BUS DN THICK Y	CMG	300	80	PVC	✓
UNITRONIC® BUS DN THIN Y	CMG	300	80	PVC	✓
UNITRONIC® BUS DN THICK Y ECO	CMG	300	80	PVC	✓
UNITRONIC® BUS DN ECO THIN Y ECO	CMG	300	80	PVC	✓
UNITRONIC® BUS DN THICK FD P	CMX	300	80	PUR	✓
UNITRONIC® BUS DN THIN FD Y	CMX	300	80	PUR	✓
UNITRONIC® BUS DN THICK FD Y	CMG	300	80	PVC	✓
UNITRONIC® BUS DN THIN FD P	CMG	300	80	PVC	✓
ETHERLINE® Y UL/CSA CAT.5e	CMX	125	75	PVC	✓
ETHERLINE® Y FC UL/CSA CAT	CMG	600	75	PVC	✓
ETHERLINE® YY CAT.5e UL/CSA	CMG	125	70	PVC	✓
ETHERLINE® Y FLEX FC UL/CSA CAT.5	CMG	600	70	PVC	✓
ETHERLINE® FD P FC UL/CSA CAT.5	CMX	300	75	PUR	✓

ÖLFLEX®
 UNITRONIC®
 ETHERLINE®
 HITRONIC®
 EPIC®
 SKINTOP®
 SILVYN®
 FLEXIMARK®
 ACCESSORIES
 APPENDIX

T29 Technical tables

T29: using UL-approved cables


Table 29-5: overview of corresponding products in this catalogue – type AWM

Lapp cable type with AWM style	Style number	Voltage in V	Temperature in °C	Material	Compliant with NFPA 79 Ed. 2012
Multi-Standard SC 2.1	1015	600	105	PVC	✓
Multi-Standard SC 2.2	10269	1000	105	PVC	✓
Multi-Standard SC 1	1007, 1569	300	105	PVC	✓
ÖLFLEX® 150 CY QUATTRO	2587, 21098	600	90	PVC	✓
ÖLFLEX® 150 QUATTRO	2587, 21098	600	90	PVC	✓
ÖLFLEX® 191	2587, 21098	600	90	PVC	✓
ÖLFLEX® 191 CY	2587, 21098	600	90	PVC	✓
ÖLFLEX® 491 CP	20234	600	80	PUR	✓
ÖLFLEX® 491 P	20234	600	80	PUR	✓
ÖLFLEX® CONTROL M	20886	1000	105	Special TPE compound	✓
ÖLFLEX® FORTIS	20886	1000	105	Special TPE compound	✓
ÖLFLEX® CONTROL TM	20886	1000	105	Special PVC compound	✓
ÖLFLEX® CONTROL TM CY	20886	1000	105	Special PVC compound	✓
ÖLFLEX® CHAIN 809	20886	1000	80	PVC	✓
ÖLFLEX® CHAIN 809 CY	20886	1000	80	PVC	✓
ÖLFLEX® CHAIN 879	20886	1000	90	PVC Oil Res II	✓
ÖLFLEX® CHAIN 879 CY	20886	1000	90	PVC Oil Res II	✓
ÖLFLEX® FD 891	2587, 21098	600	90	PVC	✓
ÖLFLEX® FD 891 CP	20234	600	80	PUR	✓
ÖLFLEX® FD 891 CY	2587, 21098	600	90	PVC	✓
ÖLFLEX® FD 891 P	20234	600	80	PUR	✓
ÖLFLEX® FD 90	10107	600	90	PVC	✓
ÖLFLEX® FD 90 CY	10107	600	90	PVC, DESINA ₉₀ -compliant	✓
ÖLFLEX® TORSION	10012, 20886	1000	90	Cold-resistant 90 °C, PVC compound	✓
ÖLFLEX® TORSION FRNC	21288	1000	80	Special compound, halogen-free	✓
ÖLFLEX® TORSION D FRNC	21288	1000	80	Special compound, halogen-free	✓
ÖLFLEX® HEAT 180 MS	4476/3529	600	150	Silicone compound	✓
ÖLFLEX® HEAT 180 C MS	4476/3529	600	150	Silicone compound	✓
ÖLFLEX® PETRO C HFFR	10587/20234	1000	80	PUR	✓
ÖLFLEX® ROBOT F1	20940	Up to 1.5 mm ² : From 2.5 mm ² : 600 1000	80	PUR	✓
ÖLFLEX® SERVO 709 CY	20886	1000	90	PVC	✓
ÖLFLEX® SERVO 9YSLCY-JB	2570, 20886	1000	80	PVC	✓
ÖLFLEX® SERVO FD 795 P	W/o control pairs: 20234 With control pairs: 20235	Power cores: Control cores: 600 300	80	PUR, DESINA ₉₀ -compliant	✓
ÖLFLEX® SERVO FD 796 CP	20234	1000	80	PUR	✓
SERVO cables acc. to INDRAMAT standard INK	Power cables: 20234 Signalling cables: 20236	Power cables: 600/1000 Signalling cables: 300	80	PUR	✓
SERVO cables acc. to Lenze standard	Resolver + encoder cable: 2464, 21165 Motor cable: 2570, 20940	Resolver + encoder cable: 300 Motor cable: 600	80	PUR	✓
SERVO cables acc. to Siemens standard 6FX 5008	Power cables: 2570 Signalling cables: 2502	Power cables: 1000 Signalling cables: 30	80	Special PVC compound, DESINA ₉₀ -compliant	✓
SERVO cables acc. to Siemens standard FX 8PLUS	Power cables: 21223 Signalling cables: 20236	Power cables: 1000 Signalling cables: 30	80	PUR	✓
UNITRONIC® 300	2464	300	105	PVC	✓
UNITRONIC® 300 CY	2464	300	105	PVC	✓
UNITRONIC® LiYCY A	2464	300	80	Special PVC	✓
UNITRONIC® LiYCY(TP) A	2464	300	80	Special PVC	✓
UNITRONIC® LiYY A	2464	300	80	Special PVC	✓
UNITRONIC® BUS CC FD P FRNC	20233	300	80	PUR	✓
UNITRONIC® BUS ASI (TPE)	2103	300	105	TPE	✓
UNITRONIC® BUS ASI FD FRNC	20549	300	80	PUR	✓
UNITRONIC® SENSOR FD	20549	300	80	PUR	✓
UNITRONIC® SENSOR COMBI	21198	300	80	PUR	✓



Table 30: our products – contained substances and legislation

The use of hazardous substances in products is subject to ever stricter international laws and restrictions. All products in this catalogue meet the following legal requirements (among others):

- REACH directive 1907/2006/EC
- RoHS directive 2011/65/EU, or 2002/95/EC
- Directive 1005/2009/EC on substances that deplete the ozone layer

REACH:

Directive 1907/2006/EC represents the EU's standard system for the Registration, Evaluation, Authorisation and Restriction of Chemicals, or REACH for short. The purpose of the directive is to ensure a high level of protection for human health and the environment.

REACH came into force on 1 June 2007 and replaced a number of former specifications relating to the material composition of products, as previously governed, for example, by directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations. All LAPP GROUP products fall within the meaning of REACH. The following requirements of the REACH directive are therefore particularly significant:

1. Information requirement for manufacturers and importers of products containing a material on the “candidate list” at a concentration in excess of 0.1% of the mass of the product.
2. Observance of substances requiring authorisation in accordance with REACH Annex XIV.
3. Observance of the manufacturing, marketing and use restrictions specified in REACH Annex XVII.

No duty of substance registration applies to the LAPP GROUP. The duty of registration is linked to specific conditions, such as the manufacture of substances or preparations, or the release of substances from products. The LAPP GROUP does not meet any of these conditions.

The LAPP GROUP has attributed great importance to the subject of safety and the environment from a very early stage. Our aim is to implement the REACH directive by keeping our products free from substances of very high concern (SVHC) or to replace such substances with non-hazardous materials. We therefore keep a very close eye

on the “candidate list”, in which the European Chemicals Agency lists these dangerous substances, continuously evaluate our products and implement any necessary substitution measures.

We observe all registration requirements for materials in accordance with REACH Annex XIV as well as the manufacturing, marketing and use restrictions specified in REACH Annex XVII.

For further information on the subject of REACH, visit www.lappkabel.com or contact our competent REACH experts regarding specific substances.

RoHS:

The full title of the RoHS directive is as follows: “DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment”. The “new” RoHS directive 2011/65/EC was published on 1 July 2011 and replaces the previous RoHS directive 2002/95/EC. Different transitional periods apply for the amendments introduced by the new RoHS directive.

In addition to the extended scope of the directive, which now also comprises “other” electrical and electronic equipment (EEE), one significant new feature is the obligation to assure compliance with the requirements of the RoHS directive by means of a conformity assessment procedure. LAPP certifies the “RoHS conformity” of EEE covered by the directive with a product-specific EC declaration of conformity and the application of the CE mark.

Irrespective of the scope of the RoHS directive, all products in this catalogue meet the substance-specific requirements of the RoHS. The exceptions detailed in the RoHS directive notwithstanding, our products do not contain any of the restricted substances specified in the RoHS directive or exceed the maximum concentrations stipulated therein.

As a general rule: All information is provided to the best of our knowledge and belief. The information given represents the current state of the art. This is supported through continuous random testing of our products.

Given the vast number of our products, complete verification without exception is not possible. Therefore, the specifications above do not constitute a generally applicable guarantee in a legal or warranty sense.



WEEE directive

The WEEE directive governs the disposal and recycling of electrical and electronic goods. A list of products from our range falling under the category of electrical and electronic tools and equipment is provided below, along with the relevant registration numbers:

The above article/registration numbers are subject to change as a result of any modifications to the scope of the WEEE directive after printing of this catalogue.

Article number	Registration number
61806430	54158606
61800360, 6180335, 61800336, 61800409, 61800318	44866937
61801245	39896667
83259601, 83259602	42488170
21700002, 21700012	39257114



Directive 2006/66/EC on batteries and accumulators as well as waste batteries and accumulators (“Batteries Act” in Germany)

This directive and the resulting national laws (e.g. the German Batteries Act – BattG) stipulate obligations for the registration and return of batteries. The products listed in this catalogue do not constitute or contain batteries, nor are any batteries provided with these products.

Therefore, the articles in this catalogue do not fall within the scope of this directive or its associated national laws.

Exception: EPIC® M23 Tool, article 11148001 EPIC® CIRCON CRIMPTOOL DIGITAL is supplied with a standard 3V lithium battery (button cell CR2025) which can be recycled at the designated collection points for waste batteries.

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
EPIC®
SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page		
00008746	611	00101203	23	0011175	45	0012466	75	0012846	68	0015112	43	0019706	32
00008747	611	00101213	23	0011176	45	0012467	75	0012850	68	0015118	43	0019708	32
00008749	611	00101224	22	0011178	45	0012468	75	0012851	68	0015125	43	0019709	32
00008779	611	00101234	22	0011179	45	0012469	75	0012852	68	0015134	43	0019710	32
00008822	611	00101244	22	0011180	46	0012470	75	0012853	68	0015141	43	0019711	32
00008825	611	00101254	22	0011181	46	0012471	75	0012854	68	0015202	43	0019718	32
00008829	611	00101264	22	0011182	46	0012474	75	0012901	69	0015203	43	0019720	32
00008854	611	00101274	22	0011183	46	0012475	75	0012902	69	0015204	43	0021800	62
00008867	611	00101284	22	0011184	46	0012476	75	0012903	69	0015205	43	0021801	62
00008899	611	00101294	23	0011185	46	0012478	75	0012904	69	0015206	43	0021802	62
00008939	612	00101304	23	0011186	46	0012479	75	0012906	69	0015207	43	0021803	62
00008978	612	00102034	22	0011187	46	0012481	75	0012907	69	0015212	43	0021805	62
00008979	611	00102044	22	0011188	46	0012482	75	0012908	69	0015218	43	0021806	62
00009005	612	00102054	22	0011189	46	0012501	39	0012911	69	0015225	43	0021807	62
00009045	611	0010210	23	0011190	46	0012502	39	0012912	69	0015234	43	0021808	62
00009057	612	0010301	23	0011191	46	0012503	39	0012913	69	0015241	43	0021809	62
00009082	612	0010302	23	0011192	46	0012504	39	0012914	69	0015250	43	0021810	62
00009135	612	0010303	23	0011193	46	0012505	39	0012915	69	0015302	43	0021811	62
00009371	612	0010304	23	0011194	46	0012506	39	0012917	69	0015303	43	0021812	62
00009470	612	0010305	23	0011195	46	0012507	39	0012919	69	0015304	43	0021813	62
00009894	612	0010306	23	0011196	46	0012620	278	0012925	69	0015305	43	0021814	62
00010108	601	0010307	23	0011197	46	0012621	278	0012926	69	0015307	43	0021816	62
00010521	601	0010308	23	0011202	46	0012622	278	0012927	69	0015312	43	0021817	62
00100004	22	0010309	23	0011204	41	0012624	278	0012928	69	0015318	43	0021818	62
00100014	22	0010312	23	0011205	45	0012626	278	0012929	69	0015325	43	0021822	62
00100024	22	0010313	23	0011206	45	0012640	40	0012931	69	0015334	43	0021823	62
00100034	22	0010314	23	0011207	45	0012641	40	0012932	69	0015341	43	0021825	62
0010004	22	0010315	23	0011208	45	0012642	40	0012933	69	0015402	43	0021826	62
0010005	22	0010400	24	0011218	45	0012643	40	0012934	69	0015403	43	0021828	62
0010006	22	0010401	24	0011219	45	0012644	40	0012940	69	0015404	43	0021829	62
0010007	22	0010402	24	0011220	45	0012645	40	0012941	69	0015405	43	0021831	62
0010008	22	0010403	24	0011221	45	0012646	40	0012942	69	0015407	43	0021833	62
0010009	22	0010404	24	0011222	45	0012647	40	0012943	69	0015412	43	0021836	62
0010010	22	0010405	24	0011223	45	0012650	40	0012944	69	0015418	43	0021880	63
0010011	22	0011000	41	0011224	45	0012651	40	0012945	69	0015425	43	0021881	63
0010012	22	0011001	41	0011225	45	0012652	40	0012946	69	0015602	44	0021882	63
0010016	22	0011002	41	0011226	45	0012653	40	0012947	69	0015603	44	0021883	63
00100214	22	0011003	41	0011230	46	0012654	40	0012949	69	0015604	44	0021884	63
00100224	22	0011004	41	0011231	46	0012655	40	0012950	69	0015605	44	0021885	63
00100234	22	0011005	41	0011232	46	0012656	40	0012951	69	0015607	44	0021886	63
00100244	22	0011006	41	0011233	46	0012660	40	0012952	69	0015612	44	0021888	63
0010025	22	0011009	41	0011234	46	0012661	40	0012953	69	0015702	44	0021889	63
0010026	22	0011010	41	0011235	46	0012662	40	0012954	69	0015703	44	0021890	63
0010027	22	0011011	41	0011236	46	0012663	40	0013009	70	0015704	44	0021891	63
0010028	22	0011012	41	0011237	46	0012664	40	0013017	70	0015705	44	0021892	63
0010029	22	0011013	41	0011241	41	0012666	40	0013018	70	0015707	44	0021893	63
0010030	22	0011014	41	0011302	46	0012752	76	0013019	70	0015712	44	0021897	63
0010031	22	0011015	41	0011304	41	0012753	76	0013020	70	0015802	44	0021898	63
0010032	22	0011018	41	0011341	41	0012755	76	0013021	70	0015803	44	0021899	63
0010033	22	0011019	41	0011404	41	0012757	76	0013023	70	0015804	44	0021900	63
0010034	22	0011020	41	0011504	41	0012758	76	0013024	70	0015805	44	0021901	63
0010036	22	0011021	41	0012101	73	0012760	76	0013025	70	0015807	44	0021902	63
0010037	22	0011022	41	0012102	73	0012761	76	0013208	70	0015812	44	0021903	63
00100414	22	0011023	41	0012202	73	0012762	76	0013210	70	0015903	44	0021904	63
00100424	22	0011024	41	0012203	73	0012763	76	0013212	70	0015904	44	0021905	63
00100434	22	0011027	41	0012204	73	0012764	76	0013213	70	0015905	44	0021907	63
00100444	22	0011028	41	0012302	73	0012765	76	0013214	70	0015907	44	0021908	63
0010045	22	0011029	41	0012304	73	0012766	76	0013215	70	0016022	26	0021909	63
0010046	22	0011030	41	0012345	74	0012767	76	0013220	70	0016023	26	0021910	63
0010047	22	0011031	41	0012346	74	0012768	76	0013222	70	0016024	26	0021911	63
0010049	22	0011032	41	0012347	74	0012769	76	0013223	70	0016025	26	0021912	63
0010050	22	0011033	41	0012348	74	0012770	76	0013225	70	0016027	26	0021913	63
0010052	22	0011036	41	0012351	74	0012775	76	0013226	70	0016031	26	0021914	63
0010053	22	0011037	41	0012352	74	0012778	76	0013227	70	0016042	26	0021915	63
0010054	22	0011038	41	0012353	74	0012779	76	0013600	77	0016043	26	0021916	63
0010056	22	0011039	41	0012354	74	0012781	76	0013601	77	0016044	26	0021917	63
00100634	22	0011040	41	0012355	74	0012782	76	0013602	77	0016045	26	0021918	63
00100644	22	0011041	41	0012365	74	0012800	68	0013603	77	0016047	26	0021919	63
00100654	23	0011045	41	0012366	74	0012801	68	0013610	77	0016057	26	0021920	63
00100664	23	0011104	41	0012401	39	0012802	68	0013611	77	0016064	26	0021921	63
0010068	23	0011106	45	0012402	39	0012803	68	0013612	77	0016065	26	0021922	63
0010069	23	0011113	45	0012403	39	0012804	68	0013613	77	0016066	26	0021923	63
0010071	23	0011114	45	0012404	39	0012805	68	0013620	77	0016067	26	0021924	63
0010072	23	0011115	45	0012420	39	0012806	68	0013621	77	0016069	26	0021925	63
0010074	23	0011116	45	0012421	39	0012807	68	0013622	77	0016072	26	0021926	63
0010076	23	0011117	45	0012422	39	0012813	68	0013623	77	0016075	26	0021927	63
0010086	23	0011118	45	0012423	39	0012814	68	0013630	77	0016077	26	0021928	63
0010087	23	0011119	45	0012425	39	0012815	68	0013631	77	0016078	26	0021929	63
00100883	23	0011125	45	0012427	39	0012816	68	0013632	77	0016087	26	0021930	63
00100893	23	0011136	45	0012429	39	0012817	68	0013633	77	0016088	26	0021931	63
0010091	23	0011137	45	0012430	39	0012818	68	0014117	52	0016089	26	0021932	63
0010092	23	0011138	45	0012440	39	0012819	68	0014118	52	0016090	26	0021933	63
00100933	23	0011139	45	0012441	39	0012820	68	0014119	52	0016092	26	0021934	63
0010100	23	0011140	45	0012443	39	0012825	68	0014120	52	0016101	26	0021936	63
0010101	23	0011142	45	0012444	39	0012826	68	0014121	52	0016102	26	0021937	63
0010102	23	0011143	45	0012446	39	0012827	68	0014122	52	0016103	26	0021938	63
0010103	23	0011144	45	0012448	39	0012828	68	0015002	43	0016106	26	0021940	63
0010105													

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page		
0021967	63	0023139	148	0023333	118	0026109	108	0026285	109	0026507	119	0026838	173
0021968	63	0023141	148	0023334	118	0026110	108	0026287	109	0026509	119	0026839	173
0021969	63	0023142	148	0023335	118	0026119	108	0026300	113	0026510	119	0026840	173
0021970	63	0023143	148	0023336	118	0026120	108	0026301	113	0026511	119	0026841	173
0021971	63	0023144	148	0023337	118	0026121	108	0026302	113	0026516	119	0026842	173
0021972	63	0023175	145	0023338	118	0026122	108	0026303	113	0026517	119	0026850	173
0021973	63	0023176	145	0023339	118	0026123	108	0026304	113	0026518	119	0026851	173
0022403	260	0023177	145	0023340	118	0026124	108	0026305	113	0026521	119	0026856	173
0022404	260	0023178	145	0023341	118	0026125	108	0026306	113	0026522	119	0026908	174
0022405	260	0023179	145	0023342	118	0026126	108	0026319	113	0026523	119	0026909	174
0022408	260	0023180	145	0023343	118	0026127	108	0026320	113	0026524	119	0026910	174
0022412	260	0023186	145	0023344	118	0026130	108	0026321	113	0026525	119	0026911	174
0022416	260	0023187	145	0023345	118	0026131	108	0026322	113	0026526	119	0026912	174
0022421	260	0023188	145	0023346	118	0026132	108	0026323	113	0026527	119	0026916	174
0022502	260	0023189	145	0023347	118	0026133	108	0026324	113	0026531	119	0026917	174
0022505	260	0023190	145	0023348	118	0026134	108	0026326	113	0026532	119	0026918	174
0022508	260	0023191	145	0023349	118	0026135	108	0026327	113	0026533	119	0026919	174
0022512	260	0023192	145	0023350	118	0026136	108	0026330	113	0026534	119	0026920	174
0022602	260	0023193	145	0023351	118	0026137	108	0026331	113	0026541	119	0026924	174
0022603	260	0023194	145	0023352	118	0026138	108	0026332	113	0026551	119	0026925	174
0022604	260	0023195	145	0023353	118	0026139	108	0026333	113	0026561	119	0026926	174
0022605	260	0023196	145	0023354	118	0026140	108	0026334	113	0026571	119	0026927	174
0022607	260	0023197	145	0023355	118	0026141	108	0026335	113	0026600	121	0026928	174
0022608	260	0023233	61	0023356	118	0026142	108	0026338	113	0026601	121	0026932	174
0022612	260	0023234	61	0023357	118	0026143	108	0026339	113	0026603	121	0026933	174
0022616	260	0023237	61	0023358	118	0026144	108	0026341	113	0026604	121	0026934	174
0022624	260	0023238	61	0023982	152	0026149	108	0026342	113	0026607	121	0026935	174
0022632	260	0023239	61	0023983	152	0026150	108	0026343	113	0026608	121	0026938	174
0022642	260	0023240	61	0023984	152	0026151	108	0026344	113	0026610	121	0026939	174
0022700	64	0023242	61	0023985	152	0026152	108	0026349	113	0026611	121	0027001	167
0022701	64	0023244	61	0023986	152	0026153	108	0026350	113	0026613	121	0027002	167
0022702	64	0023245	61	0023987	152	0026154	108	0026351	113	0026614	121	0027004	167
0022703	64	0023246	61	0023988	152	0026156	108	0026352	113	0026616	121	0027005	167
0022704	64	0023248	61	0023989	152	0026157	108	0026353	113	0026617	121	0027006	167
0022705	64	0023249	61	00257001	93	0026158	108	0026354	113	0026619	121	0027007	167
0022706	64	0023250	61	00257011	93	0026159	108	0026355	113	0026620	121	0027008	167
0022708	64	0023251	61	00257021	93	0026160	108	0026356	113	0026622	121	0027009	168
0022709	64	0023252	61	00257031	93	0026161	108	0026357	113	0026623	121	0027010	168
0022711	64	0023253	61	0025704	93	0026162	108	0026359	113	0026625	121	0027020	166
0022712	64	0023254	61	0025705	93	0026170	108	0026361	113	0026626	121	0027022	166
0022713	64	0023255	61	0025706	93	0026171	108	0026362	113	0026628	121	0027024	166
0022717	64	0023256	61	0025707	93	0026172	108	0026370	113	0026629	121	0027027	166
0022718	64	0023257	61	0025708	93	0026173	108	0026371	113	0026634	121	0027029	166
0022719	64	0023258	61	00257151	93	0026174	108	0026372	113	0026635	121	0027110	150
0022720	64	0023260	61	00257161	93	0026175	108	0026373	113	0026640	121	0027111	150
0022721	64	0023261	61	00257171	93	0026180	108	0026374	113	0026641	121	0027112	150
0022722	64	0023262	61	00257181	93	0026181	108	0026375	113	0026651	122	0027113	150
0022723	64	0023263	61	0025719	93	0026182	108	0026381	113	0026653	122	0027114	150
0022724	64	0023264	61	0025724	93	0026183	108	0026382	113	0026655	122	0027115	150
0022725	64	0023265	61	0025725	93	0026184	108	0026383	113	0026657	122	0027116	150
0022727	64	0023266	61	0025726	93	0026185	108	0026385	113	0026659	122	0027117	150
0022728	64	0023267	61	0025905	147	0026186	108	0026386	113	0026661	122	0027130	149
0022729	64	0023268	61	0025906	146	0026187	108	0026387	113	0026663	122	0027133	149
0022730	64	0023269	61	0025907	146	0026188	108	0026400	114	0026665	122	0027136	149
0022733	64	0023270	61	0025908	146	0026200	109	0026401	114	0026667	122	0027139	149
0022734	64	0023271	61	0025909	146	0026201	109	0026402	114	0026669	122	0027142	149
0022735	64	0023272	61	0025910	146	0026202	109	0026403	114	0026671	122	0027370	116
0022736	64	0023273	61	0025911	147	0026203	109	0026404	114	0026673	122	0027371	116
0022737	64	0023274	61	0025912	146	0026204	109	0026405	114	0026701	120	0027372	116
0022738	64	0023275	61	0025913	146	0026205	109	0026419	114	0026702	120	0027373	116
0022739	64	0023276	61	0025914	146	0026206	109	0026420	114	0026703	120	0027374	116
0022740	64	0023278	61	0025915	146	0026207	109	0026421	114	0026704	120	0027375	116
0022742	64	0023279	61	0025916	146	0026208	109	0026422	114	0026705	120	0027376	116
0022743	64	0023280	61	0025917	147	0026219	109	0026423	114	0026706	120	0027380	117
0022744	64	0023281	61	0025918	146	0026220	109	0026424	114	0026707	120	0027381	117
0022748	64	0023282	61	0025919	146	0026221	109	0026425	114	0026709	120	0027382	117
0022749	64	0023283	61	0025920	146	0026222	109	0026426	114	0026716	120	0027383	117
0022750	64	0023284	61	0025921	146	0026223	109	0026427	114	0026717	120	0027384	117
0022751	64	0023300	118	0025922	146	0026224	109	0026430	114	0026721	120	0027385	117
0022752	64	0023301	118	0025923	147	0026226	109	0026431	114	0026722	120	0027386	117
0022753	64	0023302	118	0025926	147	0026227	109	0026432	114	0026723	120	0027411	274
0022754	64	0023303	118	0025927	147	0026229	109	0026433	114	0026724	120	0027412	274
0022756	64	0023304	118	0025943	147	0026230	109	0026434	114	0026725	120	0027413	274
0022757	64	0023305	118	0025946	147	0026231	109	0026435	114	0026726	120	0027414	274
0022760	64	0023306	118	0025947	147	0026232	109	0026438	114	0026727	120	0027416	274
0022761	64	0023307	118	0025960	153	0026233	109	0026439	114	0026731	120	0027418	274
0022762	64	0023308	118	0025961	153	0026234	109	0026449	114	0026732	120	0027420	274
0022763	64	0023309	118	0026001	172	0026235	109	0026450	114	0026733	120	0027422	274
0022767	64	0023310	118	0026002	172	0026238	109	0026451	114	0026734	120	0027425	274
0022768	64	0023311	118	0026003	172	0026239	109	0026452	114	0026741	120	0027426	274
0022769	64	0023312	118	0026004	172	0026240	109	0026453	114	0026751	120	0027427	274
0022770	64	0023313	118	0026005	172	0026241	109	0026454	114	0026761	120	0027428	274
0022771	64	0023314	118	0026006	172	0026242	109	0026456	114	0026771	120	0027429	274
0022774	64	0023315	118	0026007	172	0026243	109	0026457	114	0026805	173	0027431	274
0022776	64	0023316											

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
0034315	261	0034955	25	0035734	42	0036435	90	0037163	269	0038606	271	00420113	171
0034316	261	0034956	25	0035735	42	0036436	90	0037164	269	0038608	271	0042012	171
0034318	261	0035000	25	0035736	42	0036437	90	0037165	269	0038612	271	00420133	171
0034320	261	0035001	25	0035740	42	0036438	90	0037171	269	0038616	271	00420143	171
0034321	261	0035002	25	0035741	42	0036439	90	0037172	269	0038702	271	00420153	171
0034325	261	00350033	25	0035742	42	0036440	90	0037181	269	0038703	271	00420163	171
0034328	261	0035004	25	0035743	42	0036441	90	0037182	269	0038704	271	0042020	171
0034330	261	0035005	25	0035744	42	0036442	90	0037302	270	0038708	271	0042021	171
0034332	261	00350063	25	0035800	265	0036443	90	0037303	270	0038802	271	0042022	171
0034336	261	0035011	25	0035801	265	0036444	90	0037304	270	0038803	271	0042023	171
0034340	261	00350123	25	0035802	265	0036445	90	0037306	270	0038804	271	0042050	171
0034344	261	00350133	25	0035803	265	0036446	90	0037307	270	0038805	271	00430003	161
0034350	261	00350143	25	0035804	265	0036447	90	0037308	270	0039001	164	00430053	161
0034402	261	00350153	25	0035805	265	0036448	90	0037312	270	0039002	164	0043006	161
0034403	261	00350163	25	0035806	265	0036449	90	0037316	270	00390033	164	00430073	161
0034404	261	00350173	25	0035807	265	0036450	90	0037325	270	00390043	164	0043008	161
0034405	261	00350183	25	0035808	265	0036451	90	0037402	270	0039017	164	0043009	161
0034406	261	00350193	25	0035810	265	0036479	90	0037403	270	0039018	164	0043010	161
0034407	261	00350213	25	0035811	265	0036511	96	0037404	270	00390193	164	0043011	161
0034408	261	00350223	25	0035812	265	0036602	96	0037406	270	00390203	164	0043012	161
0034410	261	00350233	25	0035813	265	0036603	96	0037407	270	0039034	164	0043013	161
0034412	261	00350243	25	0035814	265	0036604	96	0037408	270	0039035	164	00430143	161
0034414	261	00350253	25	0035816	265	0036605	96	0037410	270	00390363	164	0043015	161
0034415	261	00350263	25	0035817	265	0036606	96	0037425	270	00390373	164	0043016	161
0034416	261	00350273	25	0035820	265	0036608	96	0037502	270	00390463	164	0043017	161
0034418	261	00350283	25	0035821	265	0036640	99	0037503	270	00390473	164	0043018	161
0034420	261	00350293	25	0035822	265	0036641	99	0037504	270	00390483	164	0043019	161
0034421	261	0035101	264	0035823	265	0036642	99	0037505	270	00390493	164	00430203	161
0034425	261	0035102	264	0035824	265	0036650	101	0037507	270	00390503	164	00430213	161
0034428	261	0035103	264	0035825	265	0036651	101	0037508	270	00390513	164	00430223	161
0034430	261	0035104	264	0035827	265	0036652	101	0037510	270	00390523	164	00430233	161
0034432	261	0035105	264	0035830	265	0036653	101	0037516	270	00390533	164	00430243	161
0034436	261	0035108	264	0035831	265	0036655	101	0037525	270	0039054	164	00430253	161
0034440	261	0035110	264	0035832	265	0036656	101	0037602	270	0039055	164	00430263	161
0034450	262	0035113	264	0035836	265	0036760	97	0037603	270	0039056	164	00430283	161
0034461	262	0035131	265	0036001	87	0036901	99	0037604	270	0039057	164	00430293	161
0034502	262	0035132	265	0036015	87	0037000	92	0037605	270	0039058	164	00430303	161
0034503	262	0035133	265	0036020	87	0037001	92	0037606	270	0039059	164	00430323	161
0034504	262	0035134	265	0036025	87	0037002	92	0037607	270	0039060	164	00430333	161
0034505	262	0035135	265	0036026	87	0037003	92	0037608	270	0039061	164	00430343	161
0034506	262	0035136	265	0036140	87	0037004	92	0037610	270	0039107	164	0044008	162
0034507	262	0035137	265	0036145	87	0037005	92	0037612	270	0039109	164	0044009	162
0034508	262	0035141	265	0036150	87	0037006	92	0037618	270	0039116	164	0044010	162
0034510	262	0035142	265	0036151	87	0037007	92	0037625	270	0039120	164	0044011	162
0034512	262	0035150	265	0036152	87	0037008	92	0037702	270	0039148	164	0044015	162
0034514	262	0035160	264	0036154	87	0037009	92	0037703	270	0039208	164	0044016	162
0034515	262	0035161	264	0036156	88	0037010	92	0037704	270	0039209	164	00440223	162
0034516	262	0035162	264	0036157	88	0037011	92	0037705	270	0039210	164	00440233	162
0034518	262	0035163	264	0036158	88	0037012	92	0037707	270	0039307	164	00440243	162
0034520	262	0035164	264	0036159	88	0037013	92	0037802	270	0039309	164	00440253	162
0034521	262	0035165	264	0036161	88	0037014	92	0037803	270	0039312	164	00440263	162
0034525	262	0035170	264	0036162	88	0037015	92	0037804	270	0039316	164	00440283	162
0034528	262	0035171	264	0036163	88	0037016	92	0037807	270	0039318	164	00440293	162
0034530	262	0035172	264	0036164	88	0037017	92	0037902	270	0039324	164	00440323	162
0034532	262	0035174	264	0036168	89	0037018	92	0037903	270	0039336	164	00440333	162
0034536	262	0035175	264	0036170	89	0037019	92	0037905	270	0040434	379	0044036	162
0034540	262	00352013	25	0036175	89	0037020	92	0038010	91	0041041	169	0044602	263
0034550	262	0035202	25	0036177	89	0037021	92	0038011	91	0041042	169	0044604	263
0034602	262	0035203	25	0036178	89	0037022	92	0038012	91	0041043	169	0044652	263
0034603	262	0035204	25	0036181	89	0037023	92	0038013	91	0041044	169	0044655	263
0034604	262	0035220	25	0036240	95	0037024	92	0038014	91	0041045	169	0044658	263
0034605	262	0035221	25	0036245	95	0037025	92	0038015	91	0041046	169	0044662	263
0034606	262	00352223	25	0036250	95	0037026	92	0038016	91	0041047	169	0044702	263
0034607	262	00352233	25	0036251	95	0037027	92	0038017	91	0041048	169	0044703	263
0034608	262	0035289	25	0036252	95	0037028	95	0038018	91	0041049	169	0044704	263
0034610	262	00352903	25	0036253	95	0037100	269	0038019	91	0041050	169	0044705	263
0034612	262	0035388	54	0036260	97	0037101	269	0038020	91	0041051	169	0044707	263
0034618	262	0035390	54	0036268	98	0037102	269	0038021	91	0041052	169	0044712	263
0034620	262	0035392	54	0036269	98	0037103	269	0038022	91	0041053	169	0044716	263
0034625	262	00354303	25	0036270	98	0037104	269	0038023	91	0041054	169	0044721	263
0034630	262	00354313	25	0036275	98	0037105	269	0038024	91	0041055	169	0044732	263
0034702	262	00354323	25	0036277	98	0037106	269	0038025	91	0041056	169	0044733	263
0034703	262	0035458	25	0036278	98	0037107	269	0038026	91	0041057	169	0044735	263
0034704	262	00354593	25	0036280	98	0037108	269	0038027	91	0041058	169	0044738	263
0034705	262	00354603	25	0036281	98	0037109	269	0038028	91	0041059	169	0044850	263
0034707	262	0035461	25	0036320	100	0037110	269	0038029	91	0041060	169	0044851	263
0034710	262	0035700	42	0036321	100	0037120	269	0038060	94	0041061	169	0044912	263
0034712	262	0035701	42	0036322	100	0037121	269	0038061	94	0041062	169	0045207	163
0034718	262	0035702	42	0036324	100	0037122	269	0038062	94	0041063	169	0045209	163
0034725	262	0035703	42	0036325	100	0037123	269	0038063	94	0041075	170	0045210	163
0034730	262	0035704	42	0036327	100	0037124	269	0038064	94	0041076	170	0045211	163
0034802	262	0035710	42	0036328	100	0037125	269	0038302	271	0041077	170	0045212	163
0034803	262	0035711	42	0036350	96	0037126	269	0038303	271	0041078	170	0045213	163
0034804	262	0035712	42	0036351	96	0037127	269	0038304	271	0041079	170	0045214	163
0034805	262	0035713											

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page		
0045235	163	00463283	180	0047008	188	0058000	188	0082009	191	0091310	183	0102002	192
0045237	163	0046330	180	0047009	188	0058001	188	0082010	191	0091311	183	0102003	192
0045238	163	00463313	180	0047104	188	0058002	188	0082104	191	0091312	183	0102005	192
0045240	163	00463323	180	0047105	188	0058104	188	0082105	191	0091315	183	0102006	192
0045241	163	0046500	179	0047106	188	0059000	188	0082106	191	0091316	183	0102007	192
0045242	163	0046501	179	0048000	188	0059001	188	0083000	191	0091317	183	0102009	192
0046001	175	00465023	179	0048001	188	0059104	188	0083001	191	0091320	183	0102104	192
0046002	175	00465033	179	0048002	188	0060000	188	0083002	191	0091321	183	0102105	192
00460033	175	0046506	179	0048003	188	0060001	188	0083003	191	0091322	183	0102106	192
00460043	175	0046507	179	0048005	188	0060002	188	0083005	191	0091330	183	0103001	192
0046005	175	00465083	179	0048006	188	0061000	188	0083006	191	0091331	183	0104000	192
0046006	175	00465093	179	0048007	188	0061001	188	0083008	191	0091332	183	0104001	192
0046007	175	0046511	179	0048008	188	0061105	188	0083010	191	0091333	183	0104002	192
0046008	175	0046512	179	0048009	188	0062000	188	0083104	191	0091334	183	0104003	192
00460093	175	00465133	179	0048104	188	0062001	188	0083105	191	0091335	183	0104005	192
00460103	175	00465143	179	0048105	188	0063001	188	0084000	191	0091336	183	0104006	192
0046012	175	0046520	179	0048106	188	0064001	188	0084001	191	0091337	183	0104007	192
0046013	175	0046521	179	0049000	188	0065102	190	0084002	191	0091338	183	0104009	192
0046014	175	00465223	179	0049001	188	0065103	190	0084003	191	0091339	183	0104010	192
00460153	175	00465233	179	0049002	188	0065104	190	0084005	191	0091350	193	0104104	192
00460163	175	0046600	177	0049003	188	0065105	190	0084006	191	0091351	193	0104105	192
0046018	175	0046601	177	0049005	188	0065106	190	0084007	191	0091352	193	0105000	192
0046019	175	00466023	177	0049006	188	0065107	190	0084010	191	0091353	193	0105001	192
0046020	175	00466033	177	0049007	188	0065108	190	0084104	191	0091354	193	0105002	192
00460213	175	0046604	177	0049008	188	0065109	190	0084105	191	0091355	193	0105003	192
00460223	175	0046612	177	0049009	188	0065110	190	0084106	191	0091356	193	0105005	192
0046024	175	0046613	177	0049104	188	0065111	190	0085000	191	0091357	193	0105006	192
0046025	175	00466143	177	0049105	188	0065112	190	0085001	191	0091358	193	0105007	192
0046026	175	00466153	177	0049106	188	0065113	190	0085002	191	0091359	193	0105008	192
00460273	175	0046616	177	0050000	188	0065201	190	0085003	191	0091360	193	0105009	192
00460283	175	0046617	177	0050001	188	0065202	190	0085005	191	0091361	193	0105104	192
0046030	175	0046618	177	0050002	188	0066202	266	0085010	191	0091375	185	0105105	192
0046031	175	0046619	177	0050003	188	0066204	266	0085104	191	0091376	185	0106000	192
0046032	175	00466203	177	0050004	188	0066205	266	0085105	191	0091377	185	0106001	192
00460333	175	00466213	177	0050005	188	0066208	266	0086000	191	0091380	185	0106002	192
00460343	175	0046622	177	0050006	188	0066210	266	0086001	191	0091381	185	0106003	192
0046036	175	0046623	177	0050007	188	0066212	266	0086002	191	0091382	185	0106005	192
00460373	175	0046625	177	0050008	188	0066216	266	0086003	191	0091383	185	0106006	192
00460383	175	0046626	177	0050009	188	0066232	266	0086007	191	0091390	185	0106104	192
0046039	175	0046628	177	0050104	188	0066233	266	0086010	191	0091391	185	0106105	192
0046040	175	0046629	177	0050105	188	0066234	266	0086104	191	0091392	185	0106106	192
0046041	175	00466303	177	0050106	188	0066235	266	0086105	191	0094000	192	0107000	192
0046042	175	00466313	177	0051000	188	0066238	266	0086106	191	0094001	192	0107001	192
00460453	175	0046633	177	0051001	188	0066239	266	0087000	191	0094002	192	0107002	192
0046110	179	00466343	177	0051002	188	0066240	266	0087001	191	0094003	192	0107003	192
0046115	179	00466353	177	0051003	188	0066242	266	0087002	191	0094005	192	0107005	192
0046116	179	0046636	177	0051005	188	0066243	266	0087003	191	0094006	192	0107006	192
0046117	179	00466373	177	0051006	188	0066244	266	0087005	191	0094007	192	0107105	192
0046119	179	00466383	177	0051007	188	0066262	266	0087010	191	0094008	192	0108000	192
0046131	179	0046701	178	0051008	188	0068001	189	0087104	191	0094009	192	0108001	192
00461323	179	0046702	178	0051009	188	0068105	189	0087105	191	0094010	192	0108002	192
00461333	179	0046703	178	0051104	188	0069000	189	0088000	191	0094104	192	0108104	192
0046141	179	0046708	178	0051105	188	0069001	189	0088001	191	0094105	192	0108105	192
00461423	179	0046709	178	0051106	188	0069002	189	0088002	191	0094106	192	0151001	158
00461433	179	0046710	178	0052000	188	0069003	189	0088003	191	0095001	192	0151003	158
0046201	181	0046711	178	0052001	188	0069006	189	0088010	191	0095002	192	0151005	158
0046202	181	0046712	178	0052002	188	0069007	189	0088104	191	0095005	192	0151006	158
00462033	181	0046716	178	0052003	188	0069104	189	0089000	191	0095006	192	0151007	158
00462043	181	0046717	178	0052005	188	0069105	189	0089001	191	0095007	192	0151010	158
0046205	181	0046718	178	0052006	188	0070000	189	0089002	191	0095009	192	0151011	158
0046206	181	0046719	178	0052007	188	0070001	189	0089003	191	0095104	192	0151015	158
0046207	181	0046720	178	0052104	188	0070002	189	0089010	191	0095105	192	0151017	158
0046208	181	0046721	178	0052105	188	0070003	189	0089104	191	0095106	192	0151019	158
00462093	181	0046723	178	0052106	188	0070007	189	0089105	191	0095600	192	0151022	158
00462103	181	0046724	178	0053000	188	0070104	189	0089106	191	0096001	192	0151023	158
0046212	181	0046728	178	0053001	188	0070105	189	0090000	191	0096006	192	0151030	157
0046213	181	0046729	178	0053002	188	0071000	189	0090001	191	0096104	192	0151035	158
0046214	181	0046730	178	0053003	188	0071001	189	0090002	191	0097001	192	0151040	158
00462153	181	0046734	178	0053005	188	0071002	189	0090104	191	0097002	192	0151050	158
00462163	181	0046735	178	0053006	188	0071003	189	0091100	182	0097003	192	0151051	157
0046218	181	0046736	178	0053009	188	0071004	189	00911013	182	0097104	192	0151052	157
0046219	181	0046740	178	0053104	188	0071105	189	0091102	182	0097105	192	0152001	158
0046220	181	0046741	178	0053105	188	0072001	189	00911033	182	0098000	192	0152003	158
00462213	181	0046742	178	0053106	188	0072002	189	0091120	184	0098001	192	0152005	158
00462223	181	0046900	176	0054000	188	0073001	189	0091121	184	0098002	192	0152006	158
0046224	181	0046901	176	0054001	188	0074001	188	00911223	184	0098003	192	0152007	158
0046226	181	00469023	176	0054002	188	0074002	189	00911233	184	0098006	192	0152010	158
00462273	181	00469033	176	0054003	188	0080001	191	0091124	184	0098104	192	0152011	158
00462283	181	0046904	176	0054004	188	0080002	191	0091200	182	0098105	192	0152015	158
00462313	181	0046905	176	0054005	188	0080005	191	0091201	182	0098106	192	0152017	158
00462343	181	00469063	176	0054006	188	0080006	191	00912023	182	0099001	192	0152019	158
00462353	181	00469073	176	0054104	188	0080010	191	0091210	182	0099002	192	0152022	158
0046237	181	0046908	176	0054105	188	0080104	191	0091211	182	0099003	192	0152023	158
0													

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
0154012	158	0166001	159	0188005	187	10019968	53	10042800	532	10166100	578	1022403	56
0154013	158	0166002	159	0188104	187	10019969	53	10042900	532	10167000	578	1022404	56
0154014	158	0166003	159	0188105	187	10019970	53	10045000	535	10167100	578	1022405	56
0155001	159	0166007	159	0188114	187	10019971	53	10046000	543	10168000	578	1022407	56
0155002	159	0166010	159	0189000	187	10019972	53	10046900	543	10168100	578	1022504	56
0155003	159	0166501	159	0189001	187	10019973	53	10047000	581	10170000	474	1022604	56
0155005	159	0166502	159	0189002	187	10019975	53	10047100	581	10170000	474	1022902	56
0155007	159	0166503	160	0189104	187	10019980	53	10048500	581	10170600	474	10239010	475
0155010	159	0166505	160	0189114	187	10019981	53	10048600	581	10171000	474	10239110	475
0155501	159	0167001	159	0190000	187	10019982	53	10048700	581	10171000	474	10240010	475
0155502	159	0167002	159	0190001	187	10021000	526	10049000	582	10171600	474	10240110	475
0155503	159	0167501	159	0190002	187	10022000	526	10049100	582	10180000	465	1026012	125
0155505	160	0167502	159	0191000	187	10024000	531	10051000	580	10180400	471	1026103	125
0155507	160	0167513	158	0191001	187	10027000	579	10051200	580	10181000	465	1026104	125
0155510	160	0167514	158	0192000	187	10027100	579	10051400	580	10181400	471	1026105	125
0156001	159	0167515	158	0192001	187	10027200	579	10051600	580	10182000	466	1026107	125
0156002	159	0168500	160	0193000	187	10027300	579	10052000	580	10182400	471	1026112	125
0156003	159	0168501	160	0193001	187	10027410	579	10052200	580	10183000	466	1026118	125
0156007	159	0168503	160	0194000	187	10027510	579	10072000	550	10183400	471	1026125	125
0156010	159	0168504	160	0194001	187	10027610	579	10072900	550	10184000	467	1026303	125
0156501	159	0168506	160	0195001	187	10027710	579	10073000	551	10184000	469	1026304	125
0156502	159	0168507	160	0196001	187	10027810	579	10073900	550	10184200	469	1026305	125
0156503	160	0168509	160	0197000	187	10028000	579	10074000	554	10184400	472	1026307	125
0156505	160	0168510	160	0197001	187	10028100	579	10074900	551	10184400	473	1026312	125
0157001	159	0181001	187	0198001	187	10032000	536	10075000	554	10184500	473	1026318	125
0157002	159	0181002	187	0199001	187	10032900	536	10075900	551	10185000	467	1026325	125
0157501	159	0181005	187	10003000	527	10033000	536	10076000	555	10185000	469	1026334	125
0157502	159	0181006	187	10004000	527	10033900	536	10076900	552	10185200	469	1026403	125
0157513	158	0181104	187	10005000	528	10034000	540	10078900	553	10185400	472	1026404	125
0157514	158	0181105	187	10006000	528	10034700	537	10080000	546	10185400	473	1026405	125
0157515	158	0181106	187	10007000	529	10034900	537	10080900	545	10185500	473	1026407	125
0158500	160	0182000	187	10009000	529	10035000	540	10081000	548	10186000	468	1026412	125
0158501	160	0182001	187	10011000	526	10035030	54	10082000	548	10186000	470	1026504	125
0158503	160	0182002	187	10012000	526	10035031	54	10082900	545	10186200	470	1026505	125
0158504	160	0182003	187	10014000	531	10035032	54	10083000	549	10186400	472	1026507	125
0158506	160	0182005	187	10015000	581	10035033	54	10086000	557	10186400	473	1026604	125
0158507	160	0182006	187	10015100	581	10035034	54	10086900	557	10186500	473	1026614	125
0158509	160	0182007	187	10016500	581	10035035	54	10087000	581	10187000	468	1026624	125
0158510	160	0182009	187	10017000	582	10035036	54	10087100	581	10187000	470	1026634	125
0161001	158	0182104	187	10017100	582	10035037	54	10088500	581	10187200	470	1026644	125
0161003	158	0182105	187	10018920	582	10035040	54	10088600	581	10187400	472	1026700	123
0161005	158	0182106	187	10018921	582	10035041	54	10088700	581	10187400	473	1026701	123
0161006	158	0183000	187	10018922	582	10035042	54	10090000	546	10187500	473	1026702	123
0161007	158	0183001	187	10018923	582	10035043	54	10092000	548	10190000	465	1026703	123
0161010	158	0183002	187	10019000	580	10035044	54	10092900	545	10190100	465	1026704	123
0161011	158	0183003	187	10019849	53	10035045	54	10102000	564	10191000	465	1026705	123
0161015	158	0183005	187	10019851	53	10035046	54	10102900	564	10191100	465	1026706	123
0161017	158	0183006	187	10019852	53	10035047	54	10103000	564	10192000	466	1026707	123
0161019	158	0183007	187	10019853	53	10035048	54	10103900	564	10192100	466	1026708	123
0161022	158	0183009	187	10019854	53	10035050	54	10104000	568	10193000	466	1026709	123
0161023	158	0183104	187	10019855	53	10035051	54	10104900	565	10193100	466	1026710	123
0161030	157	0183105	187	10019856	53	10035052	54	10105000	568	10194000	467	1026711	123
0161035	158	0183106	187	10019900	53	10035055	54	10105900	565	10194000	469	1026712	123
0161040	158	0183114	187	10019901	53	10035056	54	10107000	569	10194100	467	1026713	123
0161050	158	0184000	187	10019902	53	10035057	54	10107900	566	10194100	469	1026714	123
0161051	157	0184001	187	10019903	53	10035058	54	10109000	569	10195000	467	1026715	123
0161052	157	0184002	187	10019904	53	10035059	54	10109900	567	10195000	469	1026716	123
0162001	158	0184003	187	10019905	53	10035060	54	10111000	560	10195100	467	1026717	123
0162003	158	0184005	187	10019906	53	10035061	54	10111900	559	10195100	469	1026718	123
0162005	158	0184006	187	10019907	53	10035062	54	10112000	562	10196000	468	1026719	123
0162006	158	0184104	187	10019910	53	10035063	54	10113000	562	10196000	470	1026720	123
0162007	158	0184105	187	10019911	53	10035064	54	10113900	559	10196100	468	1026721	123
0162010	158	0184106	187	10019912	53	10035065	54	10114000	563	10196100	470	1026722	123
0162011	158	0184114	187	10019913	53	10035067	54	10117000	571	10197000	468	1026723	123
0162015	158	0185000	187	10019914	53	10035068	54	10117900	571	10197000	470	1026724	123
0162017	158	0185001	187	10019915	53	10035069	54	10118000	581	10197100	468	1026725	123
0162019	158	0185002	187	10019916	53	10035070	54	10118020	581	10197100	470	1026726	123
0162022	158	0185003	187	10019917	53	10035071	54	10118100	581	10202000	469	1026727	123
0162023	158	0185005	187	10019918	53	10035072	54	10118600	581	10202100	469	1026728	123
0162030	158	0185006	187	10019919	53	10035073	54	10118700	581	10203000	469	1026729	123
0162035	158	0185007	187	10019920	53	10035074	54	10119500	581	10203100	469	1026730	123
0162040	158	0185009	187	10019921	53	10035075	54	10121000	560	10204000	470	1026731	123
0162045	158	0185104	187	10019922	53	10035089	54	10121900	559	10204100	470	1026732	123
0162051	157	0185105	187	10019927	53	10035090	54	10122000	562	10205000	470	1026733	123
0162052	157	0185106	187	10019930	53	10035091	54	10123000	562	10205100	470	1026734	123
0163005	158	0185114	187	10019931	53	10035092	54	10123900	559	10210010	475	1026737	123
0163006	158	0186000	187	10019932	53	10035093	54	10124000	563	10210110	475	1026751	124
0163007	158	0186001	187	10019933	53	10035094	54	10127000	571	10211010	475	1026752	124
0163010	158	0186002	187	10019934	53	10035095	54	10127900	571	10211110	475	1026753	124
0163015	158	0186003	187	10019935	53	10035096	54	10132000	574	1021303	55	1026754	124
0163022	158	0186005	187	10019936	53	10035097	54	10133000	573	1021304	55	1026755	124
0163023	158	0186006	187	10019937	53	10035098	54	10134000	573	1021305	55	1026756	124
0163													

From partnumber 1026776 to 1120342

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page		
1026776	124	1027604	126	1028507	129	10430400	581	10631800	519	1119165	29	1119671	31
1026777	124	1027624	126	1028604	129	10431000	450	10631900	519	1119180	29	1119672	31
1026778	124	1027634	126	1028614	129	10431500	456	10633800	520	1119200	30	1119673	31
1026779	124	1027644	126	1028624	129	10432000	450	11132500	486	11192000	490	1119674	31
1026780	124	1027700	111	1028634	129	10432500	456	11147000	487	1119203	30	1119675	31
1026781	124	1027701	111	1028752	129	10439000	507	11147000	488	1119204	30	1119676	31
1026782	124	1027702	111	1028952	129	10440000	451	11147000	490	1119205	30	1119677	31
1026783	124	1027703	111	1029012	130	10440100	451	11147000	491	1119206	30	1119678	31
1026784	124	1027704	111	1029025	130	10441000	451	11147000	492	1119207	30	1119679	31
1026785	124	1027705	111	1029103	130	10441100	451	11147000	494	1119208	30	1119680	31
1026788	124	1027706	111	1029104	130	10442000	504	11147000	495	1119209	30	1119681	31
1026801	110	1027707	111	1029107	130	10445000	503	11147001	487	1119210	30	1119682	31
1026803	110	1027708	111	1029125	130	10445500	503	11147001	488	11192100	490	1119683	31
1026805	110	1027709	111	1029134	130	10446000	502	11147001	490	1119212	30	1119684	31
1026807	110	1027710	111	1029312	130	10446100	502	11147001	491	1119214	30	1119685	31
1026808	110	1027711	111	1029318	130	10448000	505	11147001	492	1119216	30	1119686	31
1026809	110	1027712	111	1029405	130	10448100	505	11147001	494	1119218	30	1119687	31
1026812	110	1027713	111	1029507	130	10450100	505	11147001	495	1119220	30	1119688	31
1026814	110	1027714	111	10344100	477	10451400	580	11147100	487	11192200	490	1119689	31
1026815	110	1027715	111	10344300	482	10457500	581	11147100	490	1119225	30	1119690	31
1026816	110	1027716	111	10344600	477	10457600	581	11147100	491	1119226	30	1119691	31
1026817	110	1027717	111	10345100	477	10457700	581	11147110	494	1119234	30	1119692	31
1026818	110	1027718	111	10345300	482	10457800	581	11147120	494	1119236	30	1119693	31
1026821	110	1027719	111	10345600	477	10458000	582	11147130	495	1119241	30	1119694	31
1026823	110	1027720	111	10381000	485	10462000	510	11147170	488	1119250	30	1119695	31
1026825	110	1027721	111	10381100	485	10468000	582	11147180	488	1119256	30	1119696	31
1026826	110	1027722	111	10381200	485	10469500	581	11147180	492	1119261	30	1119698	31
1026827	110	1027723	111	10381300	485	10469600	581	11147190	488	1119265	30	1119700	31
1026828	110	1027724	111	10381400	485	10469700	581	11147190	492	1119280	30	11197000	490
1026831	110	1027725	111	10381500	485	10469800	581	11147200	487	1119300	30	1119702	31
1026833	110	1027726	111	10381600	485	10472000	516	11147200	490	1119303	30	1119704	31
1026835	110	1027727	111	10381700	485	10474000	517	11147200	491	1119304	30	1119710	31
1026836	110	1027728	111	10382000	478	10474100	517	11147210	494	1119305	30	11197100	490
1026837	110	1027729	111	10382100	478	10481500	581	11147300	488	1119306	30	1119711	31
1026838	110	1027730	111	10382200	479	10481600	581	11147300	492	1119307	30	1119715	31
1026841	110	1027731	111	10382300	479	10481700	581	11147500	932	1119308	30	1119716	31
1026842	110	1027732	111	10382400	479	10481800	581	11148000	608	1119309	30	11197200	490
1026843	110	1027733	111	10382500	479	10482000	517	11148000	622	1119310	30	1119752	29
1026844	110	1027734	111	10383200	478	10485200	453	11148001	608	1119311	30	1119753	29
1026845	110	1027737	111	10383300	478	10486100	453	11148001	622	1119312	30	1119754	29
1026854	115	1027751	112	10383400	480	10487200	453	11148002	608	1119313	30	1119755	29
1026855	115	1027752	112	10383500	480	10488100	453	11148002	622	1119314	30	1119757	29
1026856	115	1027753	112	10383600	480	10490200	454	11148300	608	1119316	30	1119802	29
1026857	115	1027754	112	10383700	480	10491100	454	11148300	622	1119318	30	1119803	29
1026858	115	1027755	112	10390400	481	10492200	454	11153500	493	1119321	30	1119804	29
1026861	115	1027756	112	10390500	481	10493100	454	11153600	489	1119325	30	1119805	29
1026862	115	1027757	112	10390600	481	10500200	455	11153700	493	1119326	30	1119807	29
1026863	115	1027758	112	10390700	481	10501100	455	11153800	493	1119332	30	1119812	29
1026864	115	1027759	112	10399000	478	10502200	455	11158400	486	1119334	30	1119852	30
1026865	115	1027760	112	10399100	478	10503100	455	11160000	492	1119341	30	1119853	30
1026866	115	1027761	112	10399200	481	10512100	497	11160000	493	1119350	30	1119854	30
1026869	115	1027762	112	10399300	481	10512300	498	11161000	487	1119361	30	1119855	30
1026870	115	1027763	112	10399400	480	10512700	500	11161000	488	1119365	30	1119857	30
1026871	115	1027764	112	10399500	480	10512900	501	11161000	489	1119403	30	1119862	30
1026872	115	1027765	112	10399600	479	10513000	581	11171000	491	1119404	30	1119868	30
1026873	115	1027766	112	10399700	479	10513100	581	11171100	494	1119405	30	1119870	30
1026874	115	1027767	112	10399800	477	10530000	451	11171100	495	1119407	30	1119902	30
1026876	115	1027768	112	10399900	477	10530000	452	11171200	484	1119412	30	1119903	30
1026877	115	1027769	112	10400000	465	10531000	451	11182500	490	1119414	30	1119904	30
1026878	115	1027770	112	10400100	466	10531000	452	11190000	490	1119418	30	1119905	30
1026879	115	1027771	112	10400200	467	10532000	451	1119003	29	1119425	30	1119907	30
1026880	115	1027772	112	10400200	469	10532000	452	1119004	29	1119434	30	1119912	30
1026881	115	1027773	112	10400300	468	10533000	451	1119005	29	1119450	30	1119952	30
1026882	115	1027774	112	10400300	470	10533000	452	1119007	29	11195000	490	11201000	492
1026883	115	1027775	112	10400400	469	10540000	452	1119010	29	1119503	30	11202000	492
1026884	115	1027776	112	10400500	470	10540100	452	11190100	490	1119504	30	1120232	35
1026885	115	1027777	112	10401000	465	10541000	452	1119012	29	1119505	30	1120233	35
1026886	115	1027778	112	10401100	466	10541100	452	1119014	29	1119507	30	1120234	35
1026887	115	1027779	112	10401200	467	10542000	452	1119018	29	11195100	490	1120235	35
10270010	475	1027780	112	10401200	469	10542100	452	11190200	490	1119511	30	1120237	35
1027003	126	1027781	112	10401300	468	10543000	452	1119021	29	1119512	30	1120241	35
1027004	126	1027782	112	10401300	470	10543100	452	1119025	29	11195200	490	1120248	35
1027005	126	1027783	112	10401400	469	10563000	513	1119030	29	11195300	490	1120251	35
1027007	126	1027784	112	10401500	470	10564000	509	11190300	490	11195400	490	1120259	35
10270110	475	1027785	112	10420000	450	10564500	509	1119035	29	1119603	30	1120266	35
1027012	126	1027788	112	10421000	450	10565000	508	1119040	29	1119604	30	1120267	35
1027018	126	1028007	129	10422000	499	10565300	508	11190400	490	1119605	30	1120268	35
1027025	126	1028103	129	10422200	499	10567000	511	1119052	29	1119607	30	1120269	35
10271010	475	1028104	129	10422500	499	10567100	511	1119061	29	1119613	30	1120270	35
1027103	126	1028105	129	10423000	499	10568000	511	1119065	29	1119614	30	1120271	35
1027104	126	1028107	129	10423100	499	10568100	511	1119080	29	1119615	30	1120274	35
1027105	126	1028112	129	10423500	499	10576000	515	1119100	29	1119617	30	1120280	35
1027107	126	1028118	129	10424000	500	10576200	515	1119103	29	1119624	30	1120284	35
10271110</													

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page		
1120343	35	1121367	36	1123118	57	1123385	58	1125107	34	1135007	33	1136212	38
1120344	35	1121368	36	1123120	57	1123410	59	1125109	34	1135012	33	1136218	38
1120346	35	1121369	36	1123124	57	1123411	59	1125112	34	1135018	33	1136225	38
1120349	35	1121372	36	1123128	57	1123412	59	1125115	34	1135025	33	1136303	38
1120350	35	1121373	36	1123130	57	1123413	59	1125118	34	1135030	33	1136304	38
1120351	35	1121377	36	1123139	57	1123414	59	1125125	34	1135040	33	1136305	38
1120353	35	1121378	36	1123140	57	1123415	59	1125134	34	1135103	33	1136307	38
1120360	35	1121381	36	1123142	57	1123416	59	1125150	34	1135104	33	1136312	38
1120361	35	1121382	36	1123144	57	1123417	59	11251500	457	1135105	33	1136318	38
1120362	35	1121385	36	1123146	57	1123418	59	1125203	34	1135107	33	1136325	38
1120366	35	1121388	36	1123149	57	1123419	59	1125204	34	1135112	33	1136334	38
1120367	35	1121391	36	1123151	57	1123420	59	1125205	34	1135118	33	1136403	38
1120368	35	1121394	36	1123153	57	1123421	59	1125207	34	1135125	33	1136404	38
1120370	35	1121397	36	1123159	57	1123422	59	1125208	34	1135134	33	1136405	38
1120371	35	11214200	495	1123160	57	1123423	59	1125209	34	1135141	33	1136407	38
1120374	35	1121500C	494	1123161	57	1123424	59	1125212	34	1135203	33	1136412	38
1120375	35	1121510C	494	1123162	57	1123425	59	1125214	34	1135204	33	1136418	38
1120376	35	1121520C	494	1123166	57	1123426	59	1125218	34	1135205	33	1136425	38
1120378	35	1121560C	494	1123167	57	1123427	59	1125220	34	1135207	33	1136504	38
1120379	35	1121570C	494	1123168	57	1123428	59	1125225	34	1135212	33	1136507	38
1120382	35	1121800C	491	1123169	57	1123429	59	1125234	34	1135216	33	1136604	38
1120383	35	1121810C	491	1123172	57	1123430	59	1125241	34	1135218	33	1136607	38
1120385	35	1121820C	491	1123173	57	1123431	59	1125250	34	1135225	33	1136614	38
1120387	35	1121830C	491	1123177	57	1123432	59	11252500	456	1135234	33	1136615	38
1120389	35	1121840C	491	1123178	57	1123433	59	1125265	34	1135241	33	1136624	38
1120390	35	11219200	495	1123181	57	1123434	59	1125303	34	1135250	33	1136625	38
1120456	27	11220000	489	1123182	57	1123435	59	1125304	34	1135303	33	1136634	38
1120457	27	11220100	489	1123185	57	1123436	59	1125305	34	1135304	33	1136635	38
1120458	27	11220700	489	1123200	58	1123437	59	1125307	34	1135305	33	1136638	38
1120459	27	11221000	488	1123201	58	1123438	59	1125308	34	1135307	33	1136752	38
1120462	27	11221300	488	1123202	58	1123439	59	1125312	34	1135312	33	1136753	38
1120463	27	11222700	489	1123203	58	1123440	59	1125314	34	1135318	33	1136754	38
1120464	27	11223000	489	1123204	58	1123441	59	1125318	34	1135325	33	1136755	38
1120465	27	11223500	488	1123205	58	1123442	59	1125325	34	1135334	33	1136757	38
1120468	27	11226000	489	1123206	58	1123443	59	1125332	34	1135341	33	1136762	38
1120469	27	11226500	489	1123208	58	1123444	59	1125341	34	1135350	33	1136768	38
1120470	27	11227700	489	1123209	58	1123460	60	1125350	34	1135402	33	1136775	38
1120471	27	11228000	489	1123213	58	1123461	60	11253500	456	1135403	33	1136802	38
1120474	27	11228500	488	1123217	58	1123462	60	1125403	34	1135404	33	1136803	38
1120475	27	1123000	57	1123220	58	1123463	60	1125404	34	1135405	33	1136804	38
1120476	27	11230000	489	1123232	58	1123464	60	1125405	34	1135407	33	1136805	38
1120477	27	1123001	57	1123233	58	1123465	60	1125407	34	1135412	33	1136807	38
1120478	27	1123002	57	1123234	58	1123466	60	1125412	34	1135502	33	1136825	38
1120479	27	1123003	57	1123235	58	1123467	60	1125418	34	1135504	33	1136852	38
1120480	27	1123004	57	1123236	58	1123468	60	1125425	34	1135505	33	1136853	38
1120481	27	1123005	57	1123237	58	1123469	60	11255000	458	1135602	33	1136854	38
1120482	27	1123006	57	1123238	58	1123470	60	1125503	34	1135604	33	1136855	38
1120483	27	1123008	57	1123241	58	1123471	60	1125504	34	1135605	33	1136857	38
11205000	492	1123009	57	1123242	58	1123472	60	1125505	34	1135607	33	1136902	38
11206000	492	1123010	57	1123247	58	1123473	60	1125507	34	1135614	33	1136903	38
11208000	493	1123012	57	1123248	58	1123474	60	11256000	458	1135615	33	1136904	38
11208500	493	1123013	57	1123251	58	1123475	60	1125604	34	1135616	33	1136905	38
11209000	493	1123017	57	1123254	58	1123476	60	1125605	34	1135617	33	1136907	38
11209500	493	1123020	57	1123266	58	1123477	60	1125607	34	1135622	33	1150111	156
1121000C	494	1123021	57	1123267	58	1123478	60	1125614	34	1135623	33	1150115	156
1121010C	494	1123032	57	1123268	58	1123479	60	1125615	34	1135624	33	1150121	156
1121020C	494	1123033	57	1123269	58	1123480	60	1125617	34	1135625	33	1150125	156
1121060C	494	1123034	57	1123270	58	1123481	60	1125624	34	1135626	33	1150199	155
1121070C	494	1123035	57	1123271	58	1123482	60	1125625	34	1135627	33	1150201	155
1121232	36	1123036	57	1123272	58	1123483	60	1125626	34	1135628	33	1150204	155
1121233	36	1123037	57	1123274	58	1123484	60	1125629	34	1135702	33	1150208	155
1121235	36	1123038	57	1123275	58	1123485	60	1125630	34	1135752	33	1150221	156
1121236	36	11230400	489	1123280	58	1123486	60	1125752	34	1135753	33	1150228	156
1121237	36	1123041	57	1123281	58	1123487	60	1125802	34	1135754	33	1150271	155
1121241	36	1123042	57	1123284	58	1123488	60	1125852	34	1135755	33	1150272	155
1121247	36	1123046	57	1123290	58	1123489	60	1125902	34	1135757	33	1150273	155
1121251	36	1123047	57	1123291	58	1123490	60	11260000	459	1135762	33	1150275	155
1121254	36	1123048	57	1123306	58	1123491	60	11261000	459	1135802	33	1150279	155
1121266	36	11230500	489	1123307	58	1123492	60	11265000	460	1135803	33	1150280	156
1121267	36	1123051	57	1123308	58	1123493	60	11265200	460	1135804	33	1150311	156
1121268	36	1123054	57	1123309	58	1123494	60	11266000	460	1135805	33	1150312	156
1121269	36	1123056	57	1123310	58	11235000	489	11266200	460	1135807	33	1150313	156
1121270	36	1123066	57	11233100	488	11235200	489	11270000	461	1135812	33	1150315	156
1121271	36	1123067	57	1123311	58	11235700	489	11271000	461	1135818	33	1150319	156
1121274	36	1123068	57	1123312	58	11236100	488	11272000	461	1135840	33	1150322	156
1121280	36	1123069	57	1123314	58	11238100	488	11273000	461	1135852	33	1150350	156
1121284	36	1123070	57	1123315	58	11240000	489	11280000	580	1135853	33	1150351	156
1121290	36	11230700	489	1123320	58	11240400	489	11281000	580	1135854	33	1150352	156
1121300C	491	1123071	57	1123324	58	11240500	489	11282200	458	1135902	33	1150355	156
1121306	36	1123072	57	1123328	58	11240700	489	11282300	459	1135903	33	1150356	156
1121307	36	1123074	57	1123339	58	11241100	488	11283200	458	1135904	33	1150357	156
1121308	36	1123075	57	1123340	58	11243100	488	11283300	459	1135905	33	1150360	156
1121309	36	1123076	57	1123342	58	11250000	457	11285000	462	1135907	33	1150361	156
1121310	36	1123078	57	1123344	58	1125003	34	11285100	462	1136003	33	1150362	156
1121310C	491	1123080	57	1123346	58	1125004	34	11285200	463	1136004	38	1150366	156
1121311	36	1123081	57	1123349	58	1125005	34	11285200	464	1136005	38	1150367	156
1121314	36	1123083											

From partnumber 1150470 to 19082900

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
1150470	154	1312407	65	1314012	67	15500263	218	1591035	299	16001153	80	16005373	83
1150479	154	1312412	65	1314013	67	15500273	218	1591037	299	16001163	80	16005383	83
1150480	154	1312504	65	1314014	67	15500300	217	1591050	299	1600117	80	1600541	83
1150485	154	1312505	65	1314015	67	1550032	217	1591051	299	1600118	80	1600544	83
1150486	154	1312507	65	1314017	67	1550033	217	1591052	299	1600119	80	1600600	86
1150487	154	1312604	65	1314018	67	1550037	217	1591053	299	1600120	80	1600601	86
1150488	154	1312605	65	1314019	67	1550038	217	1591054	299	1600121	80	1600602	86
1150489	154	1312607	65	1314020	67	15500583	218	1591055	299	1600122	80	1600604	86
1150490	154	1312614	65	1314021	67	15500593	218	1591056	299	16001233	80	1600606	86
1150491	154	1312615	65	1314022	67	15500603	218	1591057	299	1600124	80	1600607	86
1150492	154	1312617	65	1314023	67	15500613	218	1591058	299	1600126	80	1600609	86
1150495	154	1312624	65	1314024	67	15500713	218	1591061	299	16001283	80	1600610	86
1150496	154	1312802	65	1314025	67	15500723	218	1591063	299	16001293	80	1600611	86
1150497	154	1312803	65	1314026	67	15500733	218	1591150	299	16001303	80	1600612	86
1150498	154	1312804	65	1314027	67	15500743	218	1591151	299	16001313	80	1600613	86
1150499	154	1312805	65	1314028	67	15500753	218	1591152	299	16001323	80	1600614	86
1150500	154	1312807	65	1314029	67	15500763	218	1591153	299	16001363	80	1600615	86
1150501	154	1312852	65	1314032	67	15500773	218	1591154	299	1600141	80	1600616	86
1150502	154	1312853	65	1314033	67	15500783	218	1591155	299	1600148	80	1600620	86
1150505	154	1312854	65	1314034	67	15500793	218	1591156	299	1600151	80	1600621	86
1150506	154	1312855	65	1314035	67	15500803	218	1591157	299	1600152	80	1600810	81
1150507	154	1312857	65	1314036	67	15500813	218	1591163	299	1600154	80	1600811	81
1150508	154	1312902	65	1314037	67	15500823	218	1591217	299	1600156	80	1600812	81
1150509	154	1312903	65	1314038	67	15500833	218	1591218	299	1600157	80	1600815	81
1150510	154	1312904	65	1314039	67	1550084	217	1591221	299	1600161	80	1600816	81
1150511	154	1312905	65	1314040	67	1550086	217	1591222	299	1600166	80	1600820	81
1150512	154	1312952	65	1314041	67	1550090	217	1591223	299	1600175	80	1600821	81
1150513	154	1312953	65	1314042	67	1550091	217	1591224	299	1600177	80	1600822	81
1150514	154	1312954	65	1314043	67	1550092	217	1591225	299	1600183	80	1600823	81
1150515	154	1312955	65	1314046	67	1550094	217	1591226	299	1600186	80	1600825	81
1150516	154	1312957	65	1314047	67	1550096	218	1591228	299	1600187	80	1600836	81
1150517	154	1312970	65	1314048	67	1550097	218	1591300	294	1600189	80	1600837	81
1150518	154	1312973	65	1314049	67	15502003	218	1591301	294	1600190	80	1600841	81
1150519	154	1312974	65	1314050	67	1550205	218	1591302	294	1600191	80	1600842	81
1150520	154	1312975	65	1314051	67	1550206	218	1591303	294	1600193	80	1600844	81
1150521	154	1312976	65	1314052	67	1550207	218	1591304	294	1600194	80	1600845	81
1150522	154	1312978	65	1314053	67	1550208	218	1591305	294	1600195	80	1600847	81
1150523	154	1312981	65	1314054	67	1550209	218	1591306	294	1600196	80	1600849	81
1150524	154	1312983	65	1314055	67	1550210	218	1591307	294	1600197	80	1600851	81
1150525	154	1313103	66	1314056	67	1550211	218	1591308	294	1600198	80	1600852	81
1150526	154	1313104	66	1314057	67	1550212	218	1591310	294	1600199	80	16010223	215
1150527	154	1313105	66	1314058	67	1550213	218	1591311	294	1600200	78	16010233	215
1150528	154	1313107	66	1314061	67	1550214	218	1591312	294	16002013	78	16020003	216
1150529	154	1313112	66	1314062	67	1550215	218	1591313	294	16002023	78	16020013	216
1150530	154	1313118	66	1314063	67	1550216	218	1591314	294	1600203	78	16020023	216
1150531	154	1313125	66	1314064	67	1550218	218	1591315	294	1600204	78	1602003	216
1151010	151	1313134	66	1314065	67	15502193	218	1591316	294	1600205	78	16020103	216
1151011	151	1313141	66	1314066	67	15502203	218	1591318	294	1600206	78	16020123	216
1151012	151	1313203	66	1314067	67	15502213	218	1591500	294	1600207	78	1708001	295
1151013	151	1313204	66	1314068	67	15502223	218	1591501	294	1600208	78	1708002	295
1151014	151	1313205	66	1314070	67	15502533	218	1591502	294	1600209	78	1708004	295
1151015	151	1313207	66	1314071	67	15502543	218	1591503	294	16002113	78	1708006	295
11764200	582	1313212	66	1314073	67	15502563	218	1591504	294	16002123	78	1708010	295
11764201	582	1313218	66	1314074	67	15502573	218	1591505	294	16002133	78	1708020	295
11764202	582	1313225	66	1314075	67	15502583	218	1591506	294	1600250	79	19005000	528
11764203	582	1313234	66	1314076	67	15503003	219	1591507	294	1600251	79	19006000	528
11764300	582	1313241	66	1314077	67	15503103	219	1591508	294	1600252	79	19007000	529
11764301	582	1313303	66	13162000	487	15503113	219	1591510	294	1600253	79	19009000	529
11764400	582	1313304	66	13162100	487	15503203	219	1591511	294	16002583	79	19011000	526
1312003	65	1313305	66	13162200	487	15503213	219	1591512	294	1600259	80	19012000	526
1312004	65	1313307	66	13162300	487	15503223	219	1591513	294	1600263	80	19014000	531
1312005	65	1313312	66	13162400	487	15503233	219	1591514	294	1600300	84	19021000	526
1312007	65	1313318	66	13162500	487	1550330	219	16000003	215	1600301	84	19022000	526
1312010	65	1313325	66	13162600	487	1550332	219	16000013	215	1600302	84	19024000	531
1312012	65	1313334	66	13162700	487	1550337	219	16000023	215	1600303	84	19034000	540
1312018	65	1313341	66	13162800	487	1550350	219	1600003	215	1600304	84	19034100	540
1312025	65	1313403	66	13162900	487	1550355	219	16000053	215	1600305	84	19034700	537
1312034	65	1313404	66	13163000	487	15505003	220	16000063	215	1600306	84	19034900	537
1312041	65	1313405	66	13163100	487	15505143	220	1600008	215	1600307	84	19035000	540
1312103	65	1313407	66	13163200	487	15505153	220	1600009	215	1600308	84	19035100	540
1312104	65	1313412	66	13163300	487	15505163	220	1600010	215	1600309	84	19035900	537
1312105	65	1313504	66	13163400	487	15505173	220	1600011	215	1600310	84	19036000	541
1312107	65	1313505	66	13163500	487	15505263	220	1600012	215	1600311	84	19036100	541
1312110	65	1313604	66	13163600	487	15505273	220	16000213	215	1600312	84	19036900	538
1312112	65	1313605	66	13163700	487	15505283	220	16000313	215	1600313	84	19038000	541
1312118	65	1313614	66	13163800	487	15505303	220	16000323	215	1600314	84	19038900	539
1312125	65	1313624	66	13163900	487	15505323	220	16000333	215	1600500	83	19040000	533
1312134	65	1313852	66	15500013	217	15505353	220	16000353	215	1600501	83	19040100	533
1312141	65	1313853	66	15500023	217	15505403	220	16000513	215	1600502	83	19040700	532
1312203	65	1313854	66	15500033	217	15505413	220	16000523	215	1600503	83	19040900	532
1312204	65	1313855	66	1550004	217	15505423	220	16000533	215	1600504	83	19041000	534
1312205	65	1313857	66	1550005	217	15505433	220	16000543	215	1600505	83	19042000	534
1312207	65	1313902	66	1550006	217	15505443	220	16000553	215	1600506	83	19042100	534
1312210	65	1313903	66	1550007	217	15505453	220	1600071	215	1600507	83	19042800	532
1312212	65	1313904	66	155									

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page		
19083000	549	19638000	519	2170232	300	2170893	407	22260004	372	22260112	381	22260267	341
19086000	557	19638100	519	2170233	302	2170894	407	22260005	372	22260113	381	22260268	341
19086900	557	19638300	520	2170234	326	2170901	408	22260006	372	22260114	381	22260269	341
19090000	546	19635600	519	2170235	326	2185302	432	22260007	372	22260115	381	22260270	341
19092000	548	19636600	519	2170236	305	2185311	432	22260008	372	22260116	381	22260271	345
19092900	545	19638600	520	2170240	337	21920004	906	22260009	376	22260117	381	22260272	345
19104000	568	19639600	520	2170241	337	21920005	906	22260010	371	22260118	381	22260273	345
19104900	565	21124030	908	2170242	337	21920006	906	22260011	371	22260119	378	22260274	345
19105000	568	21124040	908	2170247	304	21920008	906	22260012	371	22260120	378	22260275	345
19105900	565	21124041	908	2170260	329	21920009	906	22260013	371	22260121	378	22260276	343
19107000	569	2170000	401	2170261	329	21920120	906	22260014	371	22260122	378	22260277	343
19107900	566	2170001	401	2170263	329	21920122	906	22260015	371	22260123	378	22260300	350
19109000	569	2170002	401	2170264	329	21920125	906	22260016	371	22260124	378	22260301	346
19109900	567	2170003	401	2170266	329	21920126	906	22260017	371	22260125	378	22260302	346
19111000	560	2170005	401	2170267	329	21920129	906	22260018	371	22260126	378	22260303	346
19111900	559	2170006	401	2170269	329	21920130	906	22260019	371	22260127	377	22260304	348
19112000	562	2170007	401	2170270	329	21920131	906	22260020	371	22260128	377	22260305	348
19113000	562	2170008	401	2170272	329	21920135	906	22260021	371	22260129	377	22260306	348
19113900	559	2170009	401	2170273	329	21920140	906	22260022	371	22260130	377	22260307	348
19114000	563	2170010	401	2170275	329	21920141	906	22260023	371	22260131	377	22260308	350
19117000	571	2170011	401	2170276	329	220204	49	22260024	371	22260132	377	22260309	351
19117900	571	2170012	401	2170278	329	2202040	50	22260025	371	22260133	377	22260310	351
19121000	560	2170016	401	2170279	329	220404	49	22260026	369	22260134	377	22260311	351
19121900	559	21700501	316	2170280	404	2204040	50	22260027	369	22260135	377	22260312	351
19122000	562	21700502	316	2170281	404	220604	49	22260028	369	22260135	395	22260313	352
19123000	562	21700503	314	2170283	404	2206040	50	22260029	369	22260136	377	22260314	352
19123900	559	21700504	314	2170284	404	220605	49	22260030	369	22260136	395	22260315	352
19124000	563	21700505	321	2170289	405	220804	49	22260031	369	22260137	357	22260316	352
19127000	571	21700506	312	2170295	334	2208040	50	22260032	369	22260138	357	22260317	351
19127900	571	21700507	312	2170296	404	220805	49	22260033	369	22260139	357	22260318	350
19134000	573	21700508	315	2170297	404	221004	49	22260034	370	22260140	357	22260319	351
19134400	573	21700509	315	2170298	404	2210040	50	22260035	370	22260141	356	22260320	346
19135000	573	21700511	313	2170299	404	221005	49	22260036	370	22260142	368	22260321	346
19136000	573	21700513	313	2170300	404	221007	49	22260037	370	22260143	368	22260322	347
19136200	573	21700514	313	2170310	306	2210070	50	22260038	370	22260200	343	22260323	347
19137000	574	21700515	313	2170311	301	2210700	82	22260039	370	22260201	343	22260324	347
19138000	574	21700520	323	2170312	301	2210701	82	22260041	390	22260202	343	22260325	347
19139500	575	21700521	323	2170317	301	2210702	82	22260042	357	22260203	343	22260326	347
19145400	574	21700527	316	2170318	301	2210703	82	22260043	378	22260204	342	22260327	347
19146400	574	21700528	316	2170322	308	2210704	82	22260044	378	22260205	342	22260328	348
19155000	576	21700529	317	2170323	306	2210705	82	22260045	378	22260206	344	22260329	348
19156000	576	21700530	317	2170326	302	2210706	82	22260046	378	22260207	344	22260330	348
19157000	576	21700536	330	2170330	302	2210707	82	22260047	967	22260208	344	22260331	348
19158000	576	21700537	330	2170331	311	2210708	82	22260048	368	22260209	344	22260332	348
19159000	576	21700538	331	2170332	311	221204	49	22260049	368	22260210	344	22260333	348
19160000	576	21700539	318	2170333	302	2212040	50	22260050	368	22260211	344	22260334	348
19165000	577	21700540	418	2170334	326	221205	49	22260051	368	22260212	344	22260335	348
19165100	577	21700541	320	2170335	326	2212050	50	22260052	368	22260213	344	22260336	348
19166000	578	21700542	319	2170340	327	221207	49	22260053	342	22260214	344	22260337	348
19166100	578	21700543	319	2170341	327	2212070	50	22260055	342	22260215	344	22260338	348
19167000	578	21700544	322	2170342	327	221403	49	22260056	350	22260216	344	22260339	348
19167100	578	21700545	322	2170343	327	2214030	50	22260057	350	22260217	344	22260340	347
19168000	578	21700546	318	2170344	328	221404	49	22260058	350	22260218	342	22260341	347
19168100	578	21700547	318	2170345	328	2214040	50	22260059	352	22260219	343	22260342	346
19421900	500	21700549	318	2170346	328	221405	49	22260060	352	22260220	343	22260343	347
19424500	500	2170056	402	2170347	328	2214050	50	22260061	352	22260221	338	22260344	347
19425500	497	21700600	419	2170350	332	221407	49	22260062	352	22260222	338	22260345	347
19426000	497	21700601	419	2170351	332	2214070	50	22260063	355	22260223	338	22260346	347
19426500	497	2170125	410	2170352	332	221409	49	22260064	355	22260224	338	22260347	349
19427000	498	2170126	410	2170353	332	221412	49	22260065	355	22260225	341	22260348	349
19427300	498	2170127	415	2170360	333	2214120	50	22260066	355	22260226	341	22260349	349
19427500	498	2170128	410	2170370	333	221418	49	22260067	355	22260227	341	22260350	349
19429000	501	2170129	415	2170371	300	2214180	50	22260068	355	22260228	341	22260400	353
19429200	501	2170137	415	2170372	300	221425	49	22260069	355	22260229	341	22260401	353
19439000	507	2170138	410	2170464	409	2214250	50	22260070	355	22260230	341	22260402	353
19445000	503	2170139	415	2170465	409	221603	49	22260071	359	22260231	341	22260403	353
19445500	503	2170143	412	2170466	409	2216030	50	22260072	359	22260232	341	22260404	354
19446000	502	2170144	415	2170474	409	221604	49	22260073	359	22260233	340	22260405	354
19446100	502	2170185	410	2170475	409	2216040	50	22260074	359	22260234	340	22260406	354
19448000	505	2170186	411	2170476	409	221605	49	22260079	392	22260235	340	22260407	354
19448100	505	2170193	411	2170488	409	2216050	50	22260080	339	22260236	340	22260408	354
19450100	505	2170194	411	2170489	405	221607	49	22260081	339	22260237	340	22260409	354
19474000	517	2170195	412	2170494	407	2216070	50	22260083	380	22260238	340	22260410	355
19474100	517	2170196	412	2170495	310	221608	49	22260084	380	22260239	340	22260411	355
19482000	517	2170197	415	2170496	406	221609	49	22260085	380	22260240	340	22260412	355
19512100	497	2170198	415	2170614	413	221612	49	22260086	380	22260241	345	22260413	355
19512300	498	2170199	414	2170615	414	2216120	50	22260087	381	22260242	345	22260414	353
19512700	500	2170203	324	2170620	303	221618	49	22260088	381	22260243	345	22260415	354
19512900	501	2170204	324	2170630	303	2216180	50	22260089	381	22260244	345	22260416	354
19515200	500	2170205	324	2170634	413	221625	49	22260090	381	22260245	345	22260417	353
19517200	500	2170206	335	2170803	324	2216250	50	22260091	356	22260246	345	22260418	354
19563000	513	2170207	335	2170813									

From partnumber 22260502 to 4160600K

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
22260502	361	22260580	359	22260955	392	281607	47	3025753	46	4150400	207
22260503	361	22260683	347	22260956	391	281607CY	48	4150401	207	4160204K	205
22260504	361	22260685	347	22260970	371	281609	47	4150402	207	4160205	205
22260505	361	22260688	347	22260985	378	281612	47	4150403	207	4160205K	205
22260506	361	22260689	347	22260986	378	281612CY	48	4150404	207	4160207	205
22260507	361	22260705	348	22260987	342	281618	47	4150405	207	4160207K	205
22260508	361	22260714	359	22260991	359	281618CY	48	4150406	207	4160208	205
22260509	361	22260722	396	22260993	378	281625	47	4150409	207	4160209	205
22260510	361	22260726	356	22260994	378	281625CY	48	4150410	207	4160209K	205
22260511	361	22260728	356	22260995	377	281803	47	4150414	207	4160210	205
22260512	361	22260729	356	22260996	377	281803CY	48	4150426	207	4160211	205
22260513	360	22260738	385	22260997	377	281804	47	4150444	207	4160214	204
22260514	362	22260739	385	22261062	382	281804CY	48	4150500	207	4160214K	204
22260515	362	22260740	385	2310026	82	281805	47	4150501	207	4160226	205
22260516	362	22260742	385	2510001	190	281805CY	48	4150502	207	4160244	206
22260517	362	22260743	386	2510005	190	281807	47	4150503	207	4160244K	206
22260518	362	22260744	386	26000102	436	281807CY	48	4150504	207	4160300	204
22260519	362	22260745	386	26000104	436	281810CY	48	4150505	207	4160300K	204
22260520	362	22260747	386	26000108	436	281812	47	4150506	207	4160301	204
22260521	362	22260748	387	26000112	436	281812CY	48	4150509	207	4160301K	204
22260522	362	22260749	387	26000202	436	281818	47	4150514	207	4160302	204
22260523	362	22260750	387	26000204	436	281818CY	48	4150600	207	4160302K	204
22260524	362	22260752	387	26000208	436	281825	47	4150601	207	4160303	205
22260525	362	22260753	383	26000212	436	281825CY	48	4150602	207	4160303K	205
22260526	360	22260754	383	26000302	436	30010542	46	4150603	207	4160304	205
22260550	365	22260755	383	26000304	436	30010543	46	4150604	207	4160304K	205
22260551	365	22260756	383	26000308	436	30010544	46	4150605	207	4160305	205
22260552	365	22260757	383	26000312	436	30010545	46	4150606	207	4160305K	205
22260553	365	22260758	383	26600324	434	30010546	46	4150609	207	4160306	205
22260554	365	22260759	383	26600348	434	30010547	46	4150610	207	4160306K	205
22260555	354	22260760	354	26600924	434	30010548	46	4150614	207	4160307	205
22260556	365	22260761	397	26600948	434	30010639	46	4150700	207	4160307K	205
22260557	365	22260762	385	27600104	433	30010928	46	4150701	207	4160308	205
22260558	365	22260763	386	27600108	433	30015435	80	4150702	207	4160309	205
22260559	365	22260764	387	27600112	433	30016373	182	4150703	207	4160309K	205
22260560	365	22260765	398	27600124	433	30016600	186	4150704	207	4160310	205
22260561	365	22260766	396	27600204	433	30016603	186	4150705	207	4160311	205
22260562	365	22260767	391	27600208	433	30016606	186	4150706	207	4160311K	205
22260563	365	22260768	391	27600212	433	30016609	186	4150709	207	4160314	204
22260564	365	22260769	391	27600224	433	30017787	297	4150800	207	4160314K	204
22260565	365	22260770	391	27600304	433	30017788	297	4150801	207	4160326	205
22260566	365	22260771	391	27600308	433	30017798	298	4150802	207	4160326K	205
22260567	365	22260772	391	27600312	433	30017801	298	4150803	207	4160344	206
22260568	365	22260773	392	27600324	433	30017810	296	4150804	207	4160344K	206
22260569	365	22260774	392	27600904	433	30017811	296	4150806	207	4160400	204
22260570	367	22260775	392	27600908	433	30020808	186	4150809	207	4160400K	204
22260571	367	22260776	392	27600912	433	30020809	186	4150900	207	4160401	204
22260572	367	22260777	392	27600924	433	30020810	186	4150901	207	4160401K	204
22260573	367	22260778	399	27900104	435	30020811	186	4150902	207	4160402	204
22260574	364	22260779	399	27900108	435	3013234	194	4150904	207	4160402K	204
22260575	364	22260780	399	27900112	435	301602	272	4150906	207	4160403	205
22260576	364	22260781	399	27900124	435	301602S	272	4150909	207	4160403K	205
22260577	364	22260782	399	27900204	435	301606S	272	4151000	207	4160404	205
22260578	364	22260783	399	27900208	435	3016697	194	4151001	207	4160404K	205
22260579	364	22260784	400	27900212	435	3016698	194	4151002	207	4160405	205
22260580	364	22260785	400	27900224	435	3016699	194	4151003	207	4160405K	205
22260581	364	22260786	400	27900304	435	3016771	194	4151100	207	4160406	205
22260582	364	22260787	400	27900308	435	3017861	194	4151101	207	4160406K	205
22260583	364	22260788	400	27900312	435	301802	272	4151102	207	4160407	205
22260584	364	22260789	393	27900324	435	301802S	272	4151103	207	4160407K	205
22260585	364	22260790	393	27900904	435	301803S	272	4151106	207	4160408	205
22260586	364	22260791	393	27900908	435	301804S	272	4151201	207	4160409	205
22260587	364	22260792	393	27900912	435	301825S	272	4151301	207	4160409K	205
22260588	364	22260793	393	27900924	435	3018942	194	4151401	207	4160410	205
22260589	366	22260794	393	28000001	429	302002S	272	4151500	207	4160410K	205
22260590	366	22260795	394	28000002	430	302004S	272	4160100	204	4160411	205
22260591	366	22260796	394	28020001	429	302006	272	4160101	204	4160414	204
22260600	363	22260797	394	28020002	431	302006S	272	4160101K	204	4160414K	204
22260601	363	22260798	394	28030002	431	3020780	194	4160104S	195	4160426	205
22260602	363	22260799	394	280604	47	3020781	194	4160104S	195	4160426K	205
22260603	363	22260800	388	280604CY	48	3020782	194	4160105S	195	4160444	206
22260604	363	22260801	388	280804	47	3020783	194	4160106S	195	4160444K	206
22260605	376	22260802	388	280804CY	48	302204	272	4150100	207	4160500	204
22260606	376	22260803	388	280805	47	302206S	272	4150101	207	4160500K	204
22260607	374	22260804	388	281004	47	302210	272	4150102	207	4160501	204
22260608	374	22260805	388	281004CY	48	302220	272	4150103	207	4160501K	204
22260609	374	22260806	388	281005	47	3022220	297	4150104	207	4160502	204
22260610	374	22260807	384	281005CY	48	3022221	297	4150105	207	4160502K	204
22260611	374	22260808	384	281203	47	3022222	297	4150106	207	4160503	205
22260612	374	22260809	384	281204	47	3022223	297	4150109	207	4160503K	205
22260613	374	22260810	389	281204CY	48	302225	272	4150114	207	4160504	205
22260614	374	22260812	389	281205	47	3022673	85	4150200	207	4160504K	205
22260615	356	22260813	390	281205CY	48	3022674	85	4150201	207	4160505	205
22260616	375	22260814	390	281207	47	3022675	85	4150202	207	4160505K	205
22260616	356	22260815	390	281207CY	48	3022676	85	4150203	207	4160506	205
22260616	375	22260816	390	281403	47	3022677	85	4150204	207	4160507	205
22260636	377	22260817	390	281403CY	48	3022678	85	4150205	207	4160507K	205
22260638	377	22260818	390	281404	47	3022679	85	4150206	207	4160509	205
22260640	377	22260820	395	281404CY	48	3022680	85	4150209	207	4160509K	205
22260641	377	22260823	359	281405	47	3022681	85	4150214	207	4160510	205
22260644	377	22260825	377	281405CY	48	3022682	85	4150300	207	4160510K	205
22260646	395	22260826	377	281407	47	3022683	85	4150301	207	4160511	205
22260647	377	22260832	348	281407CY	48	3022684	85	4150302	207	4160511K	205
22260648	377	22260833	348	281602	47	3022685	85	4150303	207	4160514	204
22260649	377	22260841	347	281602CY	48	3022686	85	4150304	207	4160514K	204
222											

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
4160601	204	4161502	204	4223401	141	44420011	598	44420163	603	44420513	496	44429305	625
4160601K	204	4161505	205	4223402	141	44420012	598	44420211	633	44420513	596	44429306	623
4160602	204	4180400	203	4223403	141	44420015	597	44420212	633	44420514	496	44429307	623
4160602K	204	4180401	203	4223404	141	44420016	597	44420213	633	44420514	596	44429308	623
4160603	205	4180402	203	4223405	141	44420017	597	44420214	633	44420515	496	44429309	623
4160603K	205	4180403	203	4223406	141	44420018	597	44420215	633	44420515	596	44429310	624
4160604	205	4180404	203	4223407	141	44420019	597	44420216	633	44420516	496	44429311	624
4160604K	205	4180405	203	4223408	141	44420020	597	44420217	633	44420516	496	44429312	624
4160605	205	4180406	203	4223409	141	44420021	600	44420218	633	44420517	496	44429313	624
4160606	205	4180407	203	4223410	141	44420022	600	44420219	633	44420517	596	44429314	624
4160607	205	4180409	203	4223411	141	44420023	600	44420220	633	44420518	496	44429315	624
4160609	205	4180410	203	4223412	141	44420024	600	44420221	632	44420518	596	44429316	624
4160609K	205	4180414	203	4223413	141	44420025	600	44420222	632	44420519	496	44429317	624
4160610	205	4180500	203	4223414	141	44420026	600	44420223	632	44420519	596	44429318	626
4160611	205	4180501	203	4223415	141	44420027	600	44420224	632	44420524	593	44429319	626
4160614	204	4180502	203	4223416	141	44420028	600	44420225	632	44420525	593	44429320	626
4160626	205	4180503	203	4223417	141	44420029	599	44420226	632	44420526	593	44429321	626
4160644	206	4180504	203	4223418	141	44420030	599	44420227	632	44420527	593	44429322	626
4160700	204	4180505	203	4223419	141	44420031	599	44420228	632	44420528	594	44429323	626
4160700K	204	4180506	203	4223420	141	44420032	599	44420229	632	44420529	594	44429324	626
4160701	204	4180507	203	4223421	141	44420033	599	44420230	632	44420530	594	44429325	626
4160701K	204	4180509	203	4223422	141	44420034	599	44420231	635	44420531	594	44429326	626
4160702	204	4180510	203	4223423	141	44420035	600	44420232	639	44420532	595	44429327	626
4160702K	204	4180514	203	4223425	141	44420036	598	44420233	635	44420533	595	44429328	626
4160703	205	4180600	203	4223426	141	44420037	598	44420234	635	44420534	496	44429329	626
4160704	205	4180601	203	4223427	141	44420038	598	44420235	635	44420534	596	44429330	626
4160704K	205	4180602	203	4223428	141	44420039	598	44420236	635	44420535	496	44429331	626
4160705	205	4180603	203	4223441	142	44420040	598	44420237	639	44420535	596	44429332	626
4160705K	205	4180604	203	4223442	142	44420041	598	44420238	635	44420536	496	44429333	626
4160706	205	4180605	203	4223443	142	44420043	599	44420239	635	44420536	596	44429334	626
4160707	205	4180606	203	4223444	142	44420044	599	44420240	635	44420537	496	44429335	626
4160709	205	4180607	203	4223445	142	44420045	599	44420241	639	44420537	596	44429336	626
4160709K	205	4180609	203	4223446	142	44420046	599	44420242	639	44420538	595	44429337	626
4160710	205	4180610	203	4223447	142	44420047	599	44420243	635	44420539	595	44429338	626
4160711	205	4180611	203	4223448	142	44420048	599	44420243	639	44420540	595	44429339	626
4160714	204	4180614	203	4223449	142	44420049	600	44420244	639	44420541	496	44429340	626
4160714K	204	4222082	143	4223450	142	44420050	600	44420245	639	44420541	596	44429341	626
4160726	205	4222083	143	4223451	142	44420051	600	44420246	639	44420542	496	44429342	626
4160744	206	4222084	143	4223452	142	44420052	600	44420247	639	44420542	596	44429343	626
4160800	204	4222085	143	4223453	142	44420053	600	44420250	635	44420543	496	44429344	627
4160801	204	4222086	143	4223454	142	44420054	597	44420250	639	44420543	596	44429345	627
4160802	204	4222087	143	4223455	142	44420055	597	44420251	635	44420544	496	44429346	627
4160803	205	4222088	143	4223456	142	44420056	618	44420251	639	44420544	596	44429347	627
4160804	205	4222089	143	4223457	142	44420057	618	44420252	635	44420545	496	44429348	628
4160805	205	4222090	143	4223458	142	44420058	614	44420252	639	44420545	596	44429349	628
4160806	205	4222091	143	4223459	142	44420059	614	44420253	635	44420218	547	44429350	628
4160809	205	4222092	143	4223460	142	44420066	603	44420253	639	44422019	560	44429351	628
4160810	205	4222093	143	4223461	142	44420071	599	44420254	635	44422020	560	44429352	627
4160811	205	4222094	143	4223462	142	44420073	599	44420254	639	44422021	561	44429353	627
4160814	204	4222095	143	4223463	142	44420078	608	44420255	635	44422022	573	44429354	629
4160826	205	4222096	143	4223464	142	44420082	600	44420255	639	44422023	573	44429355	629
4160844	206	4223293	140	4223465	142	44420083	600	44420256	635	44423017	580	44429356	629
4160900	204	4223294	140	4223466	142	44420084	600	44420257	635	44423018	580	44429357	629
4160901	204	4223295	140	4223467	142	44420085	600	44420259	635	44423026	537	44429358	629
4160902	204	4223296	140	4223468	142	44420086	600	44420259	639	44424004	484	44429359	629
4160903	205	4223297	140	4223469	142	44420087	600	44420260	635	44424005	484	44429360	629
4160904	205	4223298	140	4223470	142	44420088	620	44420261	635	44424006	484	44429361	629
4160905	205	4223299	140	4223471	142	44420089	620	44420262	637	44424007	484	44429362	629
4160906	205	4223300	140	4223472	142	44420090	616	44420263	637	44424008	484	44429363	629
4160909	205	4223301	140	4223473	142	44420091	616	44420264	637	44424009	484	44429364	629
4160910	205	4223302	140	4223475	142	44420092	621	44420265	637	44424010	484	44429365	629
4160911	205	4223303	140	4223476	142	44420093	621	44420266	637	44424011	484	44429366	629
4160914	204	4223304	140	4223477	142	44420094	617	44420267	637	44428043	641	44429367	626
4160944	206	4223305	140	4223478	142	44420095	617	44420268	637	44428044	641	44429367	629
4161000	204	4223306	140	4224460	141	44420103	622	44420269	637	44428062	641	44429368	626
4161001	204	4223307	140	4224512	141	44420104	622	44420270	637	44428063	641	4502202S	195
4161002	204	4223308	140	430604	71	44420105	622	44420271	637	44428100	640	4502212S	195
4161003	205	4223314	140	430804	71	44420106	603	44420272	636	44428101	640	4502222S	195
4161004	205	4223316	140	431004	71	44420107	603	44420273	636	44428102	640	4502232S	195
4161005	205	4223317	140	431005	71	44420108	603	44420274	636	44428103	640	4502242S	195
4161006	205	4223318	140	431204	71	44420120	602	44420275	636	44428104	640	4502252S	195
4161009	205	4223319	140	431205	71	44420121	602	44420276	636	44428105	640	4502262S	195
4161010	205	4223320	140	431207	71	44420122	602	44420277	636	44428106	640	4502272S	195
4161011	205	4223321	140	431403	71	44420123	602	44420278	636	44428107	640	4502282S	195
4161014	204	4223322	140	431404	71	44420124	602	44420279	636	44428108	640	4502292S	195
4161100	204	4223323	140	431405	71	44420125	602	44420280	636	44428109	640	4502302S	195
4161101	204	4223324	140	431407	71	44420126	602	44420281	636	44428110	640	4502312S	195
4161102	204	4223325	140	431603	71	44420127	602	44420282	638	44428111	640	4502322S	195
4161104	205	4223336	144	431604	71	44420128	602	44420283	638	44428112	640	4502332S	195
4161105	205	4223337	144	431605	71	44420129	602	44420284	634	44428113	640	4502342S	195
4161106	205	4223338	144	431607	71	44420130	602	44420285	634	44429001	622	4502352S	195
4161109	205	4223											

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
4510003S	196	4510113K	201	4512391S	197	4520044	198	4521001	198	4530103	212	4710063	210
4510011	196	4510113S	196	4512392S	197	4520044E	202	4521002	198	4530104	212	4710071	210
4510011K	201	4510121	196	4512393S	197	4520044K	202	4521003	198	4530105	212	4710072	210
4510011S	196	4510121S	196	4512401S	197	4520045	198	4521004	198	4530106	212	4710073	210
4510012	196	4510122	196	4512402S	197	4520046	198	4521005	198	4530107	212	4710081	210
4510012E	201	4510122K	201	4512403S	197	4520051	198	4521006	198	4530114	213	4710082	210
4510012K	201	4510122S	196	4512411S	197	4520051E	202	4521007	198	4530115	212	4710083	210
4510012S	196	4510123	196	4512412S	197	4520051K	202	4521008	198	4530116	212	4710091	210
4510013	196	4510123K	201	4512413S	197	4520051S	198	4521009	198	4530117	212	4710092	210
4510013E	201	4510123S	196	4512421S	197	4520052	198	4521011	198	4530118	212	4710093	210
4510013K	201	4510141	196	4512422S	197	4520052K	202	4521012	198	4530119	212	4710111	210
4510013S	196	4510141S	196	4512423S	197	4520052S	198	4521013	198	4530120	213	4710112	210
4510021	196	4510142	196	4512431S	197	4520053	198	4521014	198	4530121S	135	4710113	210
4510021E	201	4510142K	201	4512432S	197	4520053K	202	4521015	198	4530122S	135	4710121	210
4510021K	201	4510142S	196	4512433S	197	4520054	198	4521016	198	4530123S	135	4710122	210
4510021S	196	4510143	196	4512441S	197	4520054K	202	4521017	198	4530143S	135	4710123	210
4510022	196	4510143K	201	4512442S	197	4520055	198	4521018	198	4530166S	135	4710141	210
4510022E	201	4510143S	196	4512443S	197	4520056	198	4521019	198	453017S	135	4710142	210
4510022K	201	4510161	196	4512451S	197	4520061	198	4521021	198	453021S	135	4710143	210
4510022S	196	4510161S	196	4512452S	197	4520061E	202	4521022	198	453022S	135	4720001	211
4510023	196	4510162S	196	4512453S	197	4520061K	202	4521023	198	453023S	135	4720002	211
4510023E	201	4510163	196	4512461S	197	4520061S	198	4521024	198	453024S	135	4720003	211
4510023K	201	4510163S	196	4512462S	197	4520062	198	4521025	198	453026S	135	4720004	211
4510023S	196	4510262K	201	4512463S	197	4520062E	202	4521026	198	453027S	135	4720005	211
4510031	196	4510263K	201	4512471S	197	4520062K	202	4521028	198	453033S	135	4720006	211
4510031S	196	4510921	196	4512472S	197	4520062S	198	4521031	198	453034S	135	4720007	211
4510032	196	4510922	196	4512473S	197	4520063	198	4521032	198	453036S	135	4720008	211
4510032K	201	4510922K	201	4512921S	197	4520063K	202	4521033	198	453037S	135	4720009	211
4510032S	196	4510923	196	4512922S	197	4520064	198	4521034	198	453041S	135	4720011	211
4510033	196	4510923K	201	4512923S	197	4520064K	202	4521041	198	453042S	135	4720012	211
4510033K	201	4511060E	201	4520001	198	4520065	198	4521042	198	453053S	135	4720013	211
4510033S	196	4511061E	201	4520001E	202	4520066	198	4521043	198	453054S	135	4720014	211
4510041	196	4511062E	201	4520001K	202	4520071	198	4521044	198	453056S	135	4720015	211
4510041E	201	4511063E	201	4520001S	198	4520071K	198	4521046	198	453057S	135	4720016	211
4510041S	196	4511064K	201	4520002	198	4520071S	198	4521051	198	4530663	135	4720017	211
4510042	196	4511065K	201	4520002E	202	4520072	198	4521061	198	4530664	135	4720018	211
4510042E	201	4511066K	201	4520002K	202	4520072K	202	4521062	198	4530667	135	4720019	211
4510042K	201	4511067K	201	4520002S	198	4520073	198	4521063	198	4530673	135	4720021	211
4510042S	196	4511068K	201	4520003	198	4520073K	202	4521091	198	4530674	135	4720022	211
4510043	196	4511069K	201	4520003E	202	4520074	198	4521092	198	4530676	135	4720023	211
4510043E	201	4511070K	201	4520003K	202	4520074E	202	4521093	198	4530677	135	4720024	211
4510043K	201	4511071K	201	4520004	198	4520074K	202	4521121	198	4530683	135	4720025	211
4510043S	196	4511072K	201	4520004E	202	4520075	198	4521122	198	4530686	135	4720026	211
4510051	196	4511073K	201	4520004K	202	4520076	198	4521141	198	4530687	135	4720027	211
4510051S	196	4512201S	197	4520005	198	4520081	198	4521142	198	4531101	136	4720028	211
4510052	196	4512202S	197	4520006	198	4520081K	202	4521166	198	4531102	136	4720031	211
4510052K	201	4512203S	197	4520011	198	4520082	198	4522201S	199	4531103	136	4720032	211
4510052S	196	4512211S	197	4520011E	202	4520091	198	4522211S	199	4531104	136	4720033	211
4510053	196	4512212S	197	4520011K	202	4520091E	202	4522212S	199	4531105	136	4720034	211
4510053E	201	4512213S	197	4520011S	198	4520091K	202	4522221S	199	4531106	136	4720035	211
4510053K	201	4512221S	197	4520012	198	4520091S	198	4522222S	199	4531110	136	4720036	211
4510053S	196	4512222S	197	4520012E	202	4520092	198	4522231S	199	4531111	136	4720041	211
4510061	196	4512223S	197	4520012K	202	4520092E	202	4522232S	199	4531112	136	4720042	211
4510061S	196	4512231S	197	4520012S	198	4520092K	202	4522241S	199	4531113	136	4720043	211
4510062	196	4512232S	197	4520013	198	4520092S	198	4522242S	199	4531114	136	4720044	211
4510062E	201	4512233S	197	4520013E	202	4520093	198	4522251S	199	4531115	136	4720045	211
4510062K	201	4512241S	197	4520013K	202	4520093K	202	4522252S	199	4531120	242	4720046	211
4510062S	196	4512242S	197	4520014	198	4520094	198	4522261S	199	4531121	242	4720047	211
4510063	196	4512243S	197	4520014E	202	4520094K	202	4522262S	199	4531122	242	4720048	211
4510063E	201	4512251S	197	4520014K	202	4520095	198	4522271S	199	4531123	242	4720051	211
4510063K	201	4512252S	197	4520015	198	4520096	198	4522272S	199	4531124	242	4720052	211
4510063S	196	4512253S	197	4520016	198	4520111	198	4522281S	199	4531125	242	4720053	211
4510071	196	4512261S	197	4520021	198	4520111K	202	4522291S	199	4531126	242	4720054	211
4510071S	196	4512262S	197	4520021E	202	4520111S	198	4522292S	199	4531127	242	4720055	211
4510072	196	4512263S	197	4520021K	202	4520112	198	4522301S	199	4531128	242	4720056	211
4510072K	201	4512271S	197	4520021S	198	4520112K	202	4522302S	199	4531129	242	4720061	211
4510072S	196	4512272S	197	4520022	198	4520112S	198	4522311S	199	4531130	242	4720062	211
4510073	196	4512273S	197	4520022E	202	4520113	198	4522321S	199	4531131	242	4720063	211
4510073K	201	4512281S	197	4520022K	202	4520113K	202	4522331S	199	4531132	242	4720064	211
4510073S	196	4512282S	197	4520022S	198	4520114	198	4522332S	199	4531133	242	4720065	211
4510081	196	4512283S	197	4520023	198	4520121	198	4522333S	199	4531134	242	4720066	211
4510081S	196	4512291S	197	4520023E	202	4520121S	198	4522332S	199	4531135	242	4720071	211
4510082	196	4512292S	197	4520023K	202	4520122	198	4522341S	199	4531136	242	4720072	211
4510082K	201	4512293S	197	4520024	198	4520122K	202	4522342S	199	4531137	242	4720073	211
4510082S	196	4512301S	197	4520024E	202	4520122S	198	4522361S	199	4600023	214	4720081	211
4510083	196	4512302S	197	4520024K	202	4520123	198	4522362S	199	4600024	214	4720082	211
4510083K	201	4512303S	197	4520025	198	4520124	198	4522371S	199	4600025	214	4720084	211
4510083S	196	4512311S	197	4520026	198	4520124K	202	4522372S	199	4600026	214	4720085	211
4510091	196	4512312S	197	4520031	198	4520125	198	4522381S	199	4600027	214	4720086	211
4510091E	201	4512313S	197	4520031E	202	4520126	198	4522391S	199	4600028	214	4720087	211
4510091S	196	4512321S	197	4520031K	202	4520141	198	4522392S	199	4600029	214	4720088	211
4510092	196	4512322S	197	4520031S	198	4520141E	202	45					

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
4720144	211	4726012	209	4726089	209	51730035	744	52002150	754	52004000	746	52005577	730
4720145	211	4726012K	209	4726091	209	51730040	744	52002160	754	52004010	746	52005590	728
4720146	211	4726013	209	4726091K	209	51730050	744	52002170	754	52004020	746	52005600	728
4721001	211	4726013K	209	4726092	209	51730060	744	52002180	754	52004030	746	52005610	728
4721011	211	4726014	209	4726092K	209	51730070	744	52002190	754	52004040	746	52005620	728
4721012	211	4726014K	209	4726093	209	51730080	744	52002200	754	52004050	746	52005680	724
4721081	211	4726015	209	4726093K	209	51730090	744	52002210	754	52004060	746	52005690	724
4721082	211	4726016	209	4726094	209	51730100	744	52002530	735	52004070	746	52005700	724
4721091	211	4726017	209	4726094K	209	51730110	744	52002540	735	52004080	746	52005710	724
4721092	211	4726018	209	4726095	209	51731000	746	52002550	735	52004090	746	52005720	724
4725001	208	4726019	209	4726096	209	51731010	746	52002560	735	52004100	746	52005740	751
4725001K	208	4726021	209	4726097	209	51731020	746	52002570	735	52004110	746	52005750	751
4725002	208	4726021K	209	4726098	209	51731030	746	52002590	735	52004120	746	52005760	751
4725002K	208	4726022	209	4726099	209	51731040	746	52002600	735	52004130	739	52005770	751
4725003	208	4726022K	209	4726111	209	52000110	740	52002620	735	52004140	739	52005780	750
4725003K	208	4726023	209	4726111K	209	52000120	740	52002630	735	52004150	739	52005790	750
4725011	208	4726023K	209	4726112	209	52000130	740	52002640	735	52004180	738	52005800	750
4725011K	208	4726024	209	4726112K	209	52000140	740	52002650	735	52004190	738	52005810	765
4725012	208	4726024K	209	4726113	209	52000150	740	52002660	735	52004200	738	52005820	765
4725012K	208	4726025	209	4726113K	209	52000160	740	52002670	735	52004210	738	52005830	765
4725013	208	4726026	209	4726114	209	52000170	740	52002680	743	52004220	738	52005840	765
4725013K	208	4726027	209	4726114K	209	52000180	740	52002690	735	52004225	738	52005850	765
4725021	208	4726028	209	4726115	209	52000190	740	52002700	735	52004230	729	52005860	765
4725021K	208	4726029	209	4726116	209	52000200	740	52002710	735	52004240	729	52005870	765
4725022	208	4726031	209	4726117	209	52000210	723	52002790	743	52004250	729	52005880	765
4725022K	208	4726031K	209	4726118	209	52000220	723	52002827	762	52004260	729	52005900	765
4725023	208	4726032	209	4726119	209	52000230	723	52002828	762	52004270	729	52005949	742
4725023K	208	4726032K	209	4726121	209	52000240	723	52002839	762	52004280	730	52005950	742
4725031	208	4726033	209	4726121K	209	52000241	723	52002840	762	52004290	730	52005960	742
4725032	208	4726033K	209	4726122	209	52000250	723	52002841	762	52004300	730	52005970	742
4725032K	208	4726034	209	4726122K	209	52000251	723	52002842	762	52004310	730	52005980	742
4725033	208	4726034K	209	4726123	209	52000260	723	52002843	762	52004320	730	52005990	742
4725033K	208	4726035	209	4726123K	209	52000270	723	52002844	762	52004329	831	52006000	742
4725041	208	4726036	209	4726124	209	52000280	723	52002845	762	52004330	831	52006010	742
4725041K	208	4726037	209	4726124K	209	52000310	723	52002846	762	52004360	831	52006020	742
4725042	208	4726038	209	4726125	209	52000320	723	52002847	762	52004390	831	52006030	742
4725042K	208	4726039	209	4726126	209	52000330	723	52002980	766	52004420	831	52006100	695
4725043	208	4726041	209	4726127	209	52000340	723	52002990	766	52004450	831	52006101	695
4725043K	208	4726041K	209	4726128	209	52000350	723	52003020	767	52004480	831	52006103	695
4725051	208	4726042	209	4726129	209	52000360	723	52003030	767	52004510	831	52006106	696
4725051K	208	4726042K	209	4726141	209	52000830	727	52003040	767	52004540	831	52006107	696
4725052	208	4726043	209	4726141K	209	52000840	727	52003050	767	52004560	831	52006109	695
4725052K	208	4726043K	209	4726142	209	52000850	727	52003060	767	52004590	831	52006110	695
4725053	208	4726044	209	4726142K	209	52000860	727	52003070	766	52004620	831	52006111	695
4725053K	208	4726044K	209	4726143	209	52000870	727	52003080	766	52004650	831	52006113	695
4725061	208	4726045	209	4726143K	209	52000880	727	52003090	766	52004680	831	52006116	696
4725061K	208	4726046	209	4726144	209	52000890	727	52003100	766	52004710	831	52006117	696
4725062	208	4726047	209	4726144K	209	52000900	727	52003110	766	52004770	831	52006119	695
4725062K	208	4726048	209	4726145	209	52000910	727	52003130	768	52004790	831	52006120	695
4725063	208	4726049	209	4726146	209	52000920	727	52003140	768	52004820	831	52006121	695
4725063K	208	4726051	209	4726147	209	52000930	728	52003160	768	52004850	831	52006123	695
4725071	208	4726051K	209	4726148	209	52000940	728	52003170	768	52004880	831	52006126	696
4725071K	208	4726052	209	4726149	209	52000950	728	52003390	743	52004910	831	52006127	696
4725072	208	4726052K	209	4727001	209	52000960	728	52003400	743	52004940	831	52006129	695
4725072K	208	4726053	209	4727002	209	52000970	728	52003410	743	52004970	831	52006130	695
4725073	208	4726053K	209	4727011	209	52000980	728	52003420	743	52005000	831	52006131	695
4725073K	208	4726054	209	4727012	209	52000990	731	52003430	743	52005070	733	52006133	695
4725081	208	4726054K	209	4727021	209	52001000	731	52003440	743	52005080	733	52006136	696
4725081K	208	4726055	209	4727022	209	52001010	731	52003450	743	52005090	733	52006137	696
4725082	208	4726056	209	4727031	209	52001020	731	52003460	743	52005100	733	52006139	695
4725082K	208	4726057	209	4727032	209	52001030	731	52003490	741	52005110	733	52006140	695
4725083	208	4726058	209	4727041	209	52001040	731	52003500	741	52005120	733	52006141	695
4725083K	208	4726059	209	4727042	209	52001050	731	52003510	741	52005130	733	52006143	695
4725091	208	4726061	210	4727051	209	52001060	731	52003520	741	52005140	733	52006146	696
4725091K	208	4726061K	210	4727052	209	52001070	731	52003530	741	52005150	733	52006147	696
4725092	208	4726062	210	4727061	210	52001080	731	52003540	741	52005160	733	52006149	695
4725092K	208	4726062K	210	4727062	210	52001090	731	52003550	741	52005170	733	52006150	695
4725093	208	4726063	210	4727071	209	52001100	731	52003560	741	52005180	733	52006151	695
4725093K	208	4726063K	210	4727072	209	52001110	731	52003570	741	52005190	733	52006153	695
4725111	208	4726064	210	4727081	209	52001120	731	52003580	741	52005200	733	52006156	696
4725111K	208	4726064K	210	4727082	209	52001130	731	52003585	734	52005210	733	52006157	696
4725112	208	4726065	210	4727091	209	52001140	731	52003690	750	52005240	733	52006159	696
4725112K	208	4726066	210	4727092	209	52001150	731	52003700	750	52005310	734	52006160	695
4725113	208	4726067	210	4727111	209	52001160	731	52003710	750	52005320	734	52006161	695
4725113K	208	4726068	210	4727112	209	52001170	731	52003720	750	52005330	734	52006163	695
4725121	208	4726069	210	4727121	209	52001180	731	52003730	750	52005340	734	52006166	696
4725121K	208	4726071	209	4727122	209	52001190	731	52003740	750	52005350	734	52006167	696
4725122	208	4726071K	209	4727141	209	52001200	731	52003750	745	52005360	734	52006169	696
4725122K	208	4726072	209	4727142	209	52001210	731	52003760	745	52005370	734	52006170	695
4725123	208	4726072K	209	48000000	200	52001220	731	52003770	745	52005380	734	52006171	695
4725123K	208	4726073	209	48000001	200	52001230	731						

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
52006500	679	52010820	734	52021611	831	52024974	736	52100332	747	52103350	694	52104503	748
52006505	679	52010830	734	52021620	831	52025040	744	52100333	747	52103360	694	52104504	699
52006510	679	52010840	734	52021630	831	52025050	744	52100334	747	52103370	694	52104505	699
52006515	679	52010850	734	52021640	831	52025060	744	52100335	747	52103371	694	52104507	700
52006520	679	52010860	734	52021650	831	52025070	744	52100336	747	52103372	694	52104571	700
52006530	679	52010870	734	52021660	831	52025100	744	52100337	747	52103373	694	52104572	700
52006531	679	52010880	734	52021661	831	52025110	744	52100338	747	52103405	698	52104573	700
52006535	679	52010890	734	52021670	831	52025120	744	52100339	747	52103415	698	52104574	700
52006540	679	52010900	734	52021680	831	52025130	744	52100340	747	52103425	698	52104575	700
52006541	679	52010910	734	52021690	831	52025140	744	52100341	747	52103435	698	52104576	700
52006545	679	52010980	752	52021710	831	52025150	744	52100342	747	52103445	698	52104580	702
52006550	679	52010985	752	52021711	831	52025160	744	52100343	747	52103455	698	52104581	702
52006554	679	52010996	752	52023149	749	52025170	744	52100344	747	52103465	698	52104582	702
52006565	679	52013000	766	52023290	831	52025180	744	52100345	747	52103475	698	52104583	702
52006572	700	52015700	717	52023340	781	52025190	744	52100346	747	52104010	704	52104584	702
52006575	699	52015710	717	52023350	781	52025200	746	52100347	747	52104050	705	52104585	702
52006579	699	52015720	717	52023360	781	52025210	746	52100600	706	52104200	703	52104586	702
52006600	695	52015730	717	52023370	781	52025220	746	52100601	706	52104210	703	52104800	678
52006610	695	52015740	717	52023380	781	52025230	746	52100602	706	52104220	703	52104810	678
52006620	695	52015750	717	52023390	781	52025235	722	52100603	706	52104230	703	52104820	678
52006630	695	52015760	717	52023400	781	52025240	722	52100604	706	52104240	703	52104830	678
52006640	695	52015765	717	52023410	781	52025250	722	52100605	706	52104250	703	52104840	678
52006650	695	52015766	717	52023430	781	52025260	722	52100606	706	52104260	703	52104850	678
52006660	695	52015767	717	52023440	831	52025270	722	52100607	706	52104270	703	52104860	678
52006670	695	52015770	717	52023586	734	52025280	722	52100610	706	52104280	703	52104870	678
52008010	726	52015780	717	52023601	751	52025290	722	52100611	706	52104290	703	52104880	678
52008020	726	52015790	717	52023602	751	52025291	722	52100612	706	52104300	703	52104890	678
52008030	726	52015800	717	52023603	751	52025530	728	52100613	706	52104310	699	52104900	678
52008040	726	52015810	717	52023604	751	52026000	975	52100614	706	52104311	699	52104910	678
52008050	726	52015820	717	52023606	751	52026010	975	52100615	706	52104312	699	52104920	678
52009040	768	52015830	717	52023607	751	52026011	975	52100616	706	52104313	699	52104930	678
52009050	768	52015831	717	52023608	751	52026012	975	52100617	706	52104314	699	52104940	678
52009061	768	52015832	717	52023609	751	52026020	973	52100620	707	52104315	699	52104980	678
52010000	752	52015833	717	52023611	751	52026022	973	52100621	707	52104316	699	52104990	678
52010010	752	52020300	723	52023620	732	52026024	973	52100622	707	52104317	699	52105000	678
52010020	752	52020310	723	52023621	732	52026026	973	52100623	707	52104318	699	52105002	678
52010030	752	52020320	723	52023622	732	52026028	973	52100624	707	52104319	699	52105003	678
52010040	752	52020330	723	52023623	732	52026030	973	52100625	707	52104320	699	52105004	678
52010050	752	52020341	723	52023624	732	52026031	974	52100626	707	52104321	699	52105005	678
52010060	752	52020513	709	52023625	732	52026032	974	52100627	707	52104322	699	52105006	678
52010070	752	52020523	709	52023626	732	52026033	974	52101965	700	52104330	704	52105010	678
52010080	752	52020533	709	52023627	732	52026034	974	52101966	700	52104335	704	52105020	709
52010090	752	52020543	709	52023628	732	52026050	973	52101967	700	52104340	704	52105030	709
52010100	752	52020553	709	52023629	732	52026051	973	52101968	700	52104345	704	52105040	709
52010110	752	52020563	709	52023716	728	52026060	974	52101969	700	52104360	704	52105050	709
52010120	752	52020573	709	52023717	728	52026061	974	52101972	700	52104365	704	52105060	709
52010130	752	52020818	750	52023718	728	52026062	974	52101973	700	52104370	704	52105270	688
52010140	752	52020820	750	52023719	728	52026063	974	52101974	700	52104375	704	52105280	688
52010161	752	52020830	750	52023720	728	52026065	973	52101975	700	52104380	704	52105290	688
52010162	752	52020840	750	52023721	728	52026066	974	52101976	700	52104385	704	52105300	688
52010163	752	52020850	750	52023722	728	52026067	973	52101977	700	52104400	704	52105310	688
52010164	752	52020860	750	52023723	728	52026068	973	52101979	700	52104405	704	52105320	688
52010340	751	52020870	750	52023830	831	52032560	737	52103000	694	52104410	704	52105330	688
52010350	751	52020880	750	52023970	738	52032570	737	52103010	694	52104415	704	52105340	688
52010360	751	52020890	750	52023980	738	52032580	690	52103020	694	52104420	704	52105350	688
52010370	751	52020900	750	52023990	738	52032585	690	52103030	694	52104425	704	52105360	688
52010380	751	52020930	749	52024000	738	52032590	690	52103040	694	52104430	704	52105370	688
52010390	751	52020940	749	52024010	738	52032600	690	52103050	694	52104435	704	52105380	688
52010400	733	52020950	749	52024015	738	52032610	690	52103060	694	52104440	704	52105390	688
52010405	733	52020960	749	52024020	738	52032615	690	52103070	694	52104445	704	52105400	688
52010410	733	52020970	749	52024090	739	52032620	690	52103071	694	52104450	701	52105410	688
52010415	733	52020980	749	52024100	739	52032625	690	52103072	694	52104452	701	52105420	688
52010420	733	52020990	749	52024110	739	52032630	690	52103073	694	52104454	701	52105430	689
52010440	733	52021000	749	52024120	739	52032635	690	52103100	697	52104456	701	52105440	689
52010450	733	52021010	749	52024319	833	52032640	690	52103103	698	52104458	701	52105450	689
52010460	733	52021070	767	52024320	833	52032645	690	52103105	697	52104460	701	52105460	689
52010470	733	52021080	767	52024330	833	52032650	690	52103110	697	52104462	701	52105470	689
52010480	733	52021120	753	52024340	833	52032655	690	52103113	698	52104463	701	52105480	689
52010490	733	52021130	753	52024351	833	52032660	690	52103115	697	52104469	699	52105490	689
52010500	733	52021140	753	52024361	833	52032665	690	52103120	697	52104470	699	52105500	689
52010510	733	52021146	753	52024460	753	52032670	690	52103123	698	52104472	699	52105510	689
52010520	733	52021150	753	52024560	766	52032675	690	52103125	697	52104473	699	52105520	689
52010530	733	52021160	753	52024640	766	52100010	749	52103130	697	52104474	699	52105530	689
52010540	733	52021170	753	52024670	767	52100020	749	52103133	698	52104475	699	52105540	689
52010550	733	52021180	753	52024680	767	52100030	749	52103135	697	52104476	699	52105600	687
52010560	733	52021190	753	52024840	728	52100040	749	52103140	697	52104477	699	52105610	687
52010570	733	52021200	753	52024848	742	52100050	749	52103143	698	52104478	699	52105620	687
52010580	733	52021210	753	52024849	742	52100060	749	52103145	697	52104479	699	52105630	687
52010590	733	52021220	753	52024850	742	52100070	749	52103150	697	52104480	699	52105640	687
52010600	733	52021230	753	52024851	742	52100080							

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
52106010	705	52107350	681	53015210	715	53019020	720	53111500	653	53112625	668	53113520	664
52106015	705	52107360	681	53015220	715	53019021	720	53111510	653	53112630	668	53113530	664
52106020	705	52107370	681	53015230	715	53019030	720	53111520	653	53112635	668	53113540	664
52106025	705	52107380	681	53015240	715	53019031	720	53111530	653	53112640	668	53113550	664
52106030	705	52107800	691	53015250	715	53019040	720	53111540	653	53112645	668	53113560	664
52106035	705	52107810	692	53015260	715	53019041	720	53111550	653	53112650	668	53113570	664
52106040	705	52107810	691	53015270	715	53019050	720	53111560	653	53112655	668	53113600	664
52106045	705	52107811	692	53015280	715	53019051	720	53111570	653	53112660	668	53113610	664
52106050	705	52107820	691	53015290	715	53019060	720	53111600	657	53112665	668	53113620	664
52106055	705	52107821	692	53015300	715	53019061	720	53111610	657	53112670	668	53113630	664
52106060	705	52107830	691	53015310	715	53019070	720	53111620	657	53112671	669	53113640	664
52106065	705	52107831	692	53015320	715	53019071	720	53111630	657	53112675	668	53113650	664
52106070	705	52107840	691	53015330	715	53019080	720	53111640	657	53112676	669	53113660	664
52106080	705	52107841	692	53015340	715	53019081	720	53111700	657	53112677	669	53113670	664
52106090	705	52107850	691	53015350	715	53019090	720	53111710	657	53112678	669	53119000	670
52106210	691	52107851	692	53015360	715	53019091	720	53111720	657	53112679	669	53119003	670
52106220	691	52107900	680	53015370	715	53019200	720	53111730	657	53112680	669	53119010	670
52106230	691	52107901	680	53015380	715	53019210	720	53111740	657	53112681	669	53119013	670
52106240	691	52107902	680	53015390	715	53019220	720	53111800	657	53112686	654	53119020	670
52106410	684	52107903	680	53015410	716	53019230	720	53111810	657	53112687	654	53119023	670
52106420	684	52107904	680	53015420	716	53019240	720	53111820	657	53112688	654	53119030	670
52106430	684	52107905	680	53015430	716	53019250	720	53111830	657	53112689	654	53119033	670
52106440	684	52108000	692	53015440	716	53019260	720	53111840	657	53112690	654	53119040	670
52106450	684	52108001	693	53015450	716	53019270	720	53112000	662	53112691	654	53119043	670
52106460	684	52108010	692	53015600	716	53019280	720	53112004	713	53112692	654	53119050	670
52106470	684	52108011	693	53015610	716	53019290	720	53112005	663	53112694	654	53119053	670
52106480	684	52108020	692	53015620	716	53100003	675	53112006	713	53112700	666	53119060	670
52106481	684	52108021	693	53015630	716	53100003	722	53112010	662	53112705	666	53119063	670
52106490	684	52108040	693	53015640	716	53100004	675	53112014	713	53112710	666	53119070	670
52106500	684	52108041	693	53015650	716	53100004	722	53112015	663	53112715	666	53119073	670
52106510	684	52108050	693	53015800	716	53100005	675	53112016	713	53112720	666	53119100	670
52106520	684	52108051	693	53015810	716	53100005	722	53112020	662	53112725	666	53119110	670
52106530	684	52109013	696	53015820	716	53100006	675	53112024	713	53112730	666	53119120	670
52106540	684	52109014	696	53015830	716	53100006	722	53112025	663	53112735	666	53119130	670
52106550	684	52109015	696	53015840	716	53100007	675	53112026	713	53112740	666	53119140	670
52106560	684	52110023	667	53015850	716	53100007	722	53112030	662	53112745	666	53119150	670
52106570	684	52110024	667	53016010	712	53100008	675	53112034	713	53112750	666	53119160	670
52106580	684	52110025	667	53016030	712	53100008	722	53112035	663	53112755	666	53119170	670
52106590	684	52110026	667	53016050	712	53100009	675	53112036	713	53112760	666	53119190	671
52106600	684	52110027	667	53016060	712	53100009	722	53112037	714	53112765	666	53119210	671
52106610	684	52110028	667	53016110	712	53100055	675	53112040	662	53112770	666	53119220	671
52106620	684	52115700	718	53016130	712	53100055	722	53112044	713	53112775	666	53119230	671
52106630	684	52115710	718	53016150	712	53102000	707	53112045	663	53112779	666	53119240	671
52106640	684	52115720	718	53016210	712	53102001	707	53112046	713	53112780	666	53119250	671
52106700	683	52115730	718	53016230	712	53102010	707	53112047	714	53112790	665	53119260	671
52106705	683	52115740	718	53016250	712	53102011	751	53112050	662	53112800	666	53119270	671
52106710	683	52115750	718	53016260	712	53102020	707	53112054	713	53112810	666	53310044	673
52106715	683	52115760	718	53016310	712	53102021	707	53112055	663	53112820	666	53312220	672
52106720	683	52115770	718	53016330	712	53102030	707	53112056	713	53112830	666	53312630	672
52106725	683	52115780	718	53016350	712	53102040	707	53112057	714	53112840	666	53312640	672
52106730	683	52115790	718	53016610	712	53102050	707	53112060	662	53112850	666	53320250	672
52106735	683	52115800	718	53016630	712	53102060	707	53112064	713	53112860	666	53320260	672
52106740	683	52115810	718	53016650	712	53102070	707	53112065	663	53112876	654	53320340	672
52106745	683	52115820	718	53016810	712	53111000	652	53112066	713	53112877	654	53320353	672
52106750	683	52115830	718	53016830	712	53111010	652	53112067	714	53112878	654	53320430	672
52106755	683	52122000	708	53016850	712	53111020	652	53112070	662	53112879	654	53320440	672
52106760	683	52122001	708	53017010	652	53111030	652	53112074	713	53112880	654	53320920	672
52106765	683	52122010	708	53017030	652	53111040	652	53112076	713	53112881	654	53325260	672
52106770	683	52122011	751	53017040	652	53111050	652	53112077	714	53112882	654	53325350	672
52106775	683	52122020	708	53017110	653	53111060	652	53112080	662	53112883	654	53325360	672
52106780	683	52122021	708	53017130	653	53111070	652	53112087	714	53112884	654	53325370	672
52106785	683	52122030	708	53017140	653	53111100	653	53112100	662	53112885	654	53325450	672
52106790	683	52122040	708	53017210	653	53111110	653	53112105	663	53112886	654	53325540	672
52106795	683	52122050	708	53017230	653	53111120	653	53112110	662	53112887	654	53325640	672
52106800	682	52122060	708	53017240	653	53111130	653	53112115	663	53112888	658	53332270	672
52106805	682	52122070	708	53017310	653	53111140	653	53112120	662	53112889	658	53332280	672
52106810	682	52220000	676	53017330	653	53111150	653	53112125	663	53112890	658	53332290	672
52106815	682	52220001	676	53017340	653	53111160	653	53112130	662	53112906	658	53332370	672
52106820	682	52220002	676	53017420	659	53111170	653	53112135	663	53112907	658	53332380	672
52106825	682	52220003	676	53017430	659	53111200	652	53112140	662	53112908	658	53332460	672
52106830	682	52220004	676	53017440	659	53111210	652	53112145	663	53112909	658	53332470	672
52106835	682	52220005	676	53017610	657	53111220	652	53112150	662	53112910	714	53332560	672
52106840	682	52220006	676	53017630	657	53111230	652	53112155	663	53112911	658	53332650	672
52106845	682	52220007	676	53017640	657	53111240	652	53112160	662	53112912	658	53332840	672
52106850	682	52220040	676	53017810	657	53111250	652	53112165	663	53112920	714	53332850	672
52106855	682	53001010	751	53017830	657	53111260	652	53112170	662	53112921	654	53332940	672
52106860	686	53001020	751	53017840	657	53111270	652	53112210	719	53112922	654	53340290	672
52106870	686	53001030	751	53018000	715	53111300	653	53112220	719	53112923	654	53340310	672
52106880	686	53001040	751	53018010	715	53111310	653	53112230	719	53112924	654	53340480	672
52106890	686	53001050	751	53018020	715	531							

From partnumber 53611001 to 55507265

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page		
53611001	673	54113072	674	55501000	784	55501710	795	55502720	836	55506001	776	55506550	800
53611004	673	54113100	675	55501005	784	55501720	795	55502730	836	55506070	776	55506555	800
53611225	721	54113110	675	55501010	784	55501850	763	55502740	836	55506071	776	55506560	800
53611240	721	54113120	675	55501015	784	55501860	763	55502750	836	55506072	776	55506565	800
53611330	721	54113130	675	55501020	784	55501870	763	55502760	836	55506073	776	55506570	800
53611430	721	54113140	675	55501025	784	55501880	763	55502770	836	55506074	776	55506575	800
53613250	721	54113150	675	55501030	784	55501890	763	55502780	836	55506075	776	55506580	803
53613340	721	54113160	675	55501035	784	55501900	763	55502790	836	55506076	776	55506585	803
53613440	721	54113170	675	55501040	784	55501910	763	55503200	821	55506077	776	55506590	803
53616140	721	54115200	660	55501045	784	55501920	763	55503201	821	55506080	816	55506595	803
53616225	721	54115205	660	55501050	784	55501930	763	55503202	821	55506081	816	55506600	803
53616240	721	54115210	660	55501055	784	55501940	763	55503203	821	55506082	816	55506605	803
53616260	721	54115215	660	55501060	784	55501950	763	55503204	821	55506083	816	55506610	803
53616340	721	54115220	660	55501065	784	55501960	763	55503205	821	55506084	816	55506615	803
53616350	721	54115225	660	55501070	784	55501981	836	55503206	821	55506085	816	55506620	803
53616356	721	54115230	660	55501075	784	55501982	836	55503207	821	55506086	816	55506625	803
53616360	721	54115235	660	55501080	784	55502001	836	55503210	821	55506087	816	55506630	803
53616440	721	54115240	660	55501085	784	55502002	836	55503211	821	55506090	816	55506635	803
53616450	721	54115245	660	55501090	784	55502003	836	55503212	821	55506091	816	55506640	803
53616540	721	54115250	660	55501095	784	55502004	836	55503213	821	55506092	816	55506645	803
53621270	721	54115255	660	55501110	785	55502021	836	55503214	821	55506093	816	55506650	803
53621280	721	54115260	660	55501115	785	55502022	836	55503215	821	55506094	816	55506655	803
53621370	721	54115265	660	55501120	785	55502023	836	55503220	837	55506095	816	55506660	803
53621380	721	54115270	660	55501125	785	55502024	836	55503221	837	55506096	816	55506665	803
53621460	721	54115275	660	55501130	785	55502031	836	55503222	837	55506097	816	55506670	803
53621550	721	54115400	661	55501135	785	55502032	836	55503223	837	55506100	776	55506675	803
53621640	721	54115405	661	55501140	785	55502041	836	55503224	837	55506101	776	55506680	803
53629290	721	54115410	661	55501145	785	55502042	836	55503225	837	55506102	776	55506685	803
53629390	721	54115415	661	55501150	785	55502051	836	55503226	837	55506103	776	55506690	803
53629470	721	54115420	661	55501155	785	55502052	836	55503227	837	55506104	776	55506695	803
53629480	721	54115425	661	55501160	785	55502061	836	55503228	837	55506105	776	55506700	803
53629490	721	54115430	661	55501165	785	55502062	836	55503230	837	55506106	776	55506705	803
53629556	721	54115435	661	55501170	785	55502071	836	55503231	837	55506110	816	55506710	804
53629570	721	54115440	661	55501175	785	55502072	836	55503232	837	55506111	816	55506715	804
53629675	721	54115445	661	55501180	785	55502366	773	55503233	837	55506112	816	55506720	804
53800020	766	54115450	661	55501185	785	55502367	773	55503234	837	55506113	816	55506725	804
53800080	766	54115455	661	55501190	785	55502368	773	55503235	837	55506114	816	55506730	804
53800579	722	54115460	661	55501195	785	55502369	773	55503240	829	55506115	816	55506735	804
53800583	722	54115465	661	55501200	785	55502370	773	55503241	829	55506116	816	55506740	804
53800640	722	54115470	661	55501205	785	55502371	773	55503242	829	55506120	816	55506745	804
53800641	722	54115475	661	55501210	785	55502372	773	55503243	829	55506121	816	55506750	804
53800642	722	55000000	780	55501215	785	55502373	773	55503244	829	55506122	816	55506755	804
53800643	722	55000010	780	55501220	785	55502374	773	55503245	829	55506123	816	55506760	804
53801030	708	55000020	780	55501225	785	55502375	773	55503246	829	55506124	816	55506765	804
53801035	752	55000030	780	55501230	785	55502439	772	55503247	829	55506125	816	55506770	804
53801040	708	55000040	780	55501235	785	55502441	772	55503250	829	55506126	816	55506775	804
53801045	752	55000050	780	55501240	785	55502442	772	55503251	829	55506135	799	55506780	804
53801050	708	55000060	780	55501245	785	55502443	772	55503252	829	55506145	799	55506785	804
53801055	752	55000070	780	55501250	785	55502444	772	55503253	829	55506155	799	55506790	804
53801060	708	55000090	780	55501255	785	55502445	772	55503254	829	55506165	799	55506795	804
53801065	752	55000531	841	55501300	764	55502446	772	55503255	829	55506175	799	55506800	804
53801070	708	55000541	841	55501300	779	55502447	772	55503256	829	55506185	799	55506805	804
53801075	752	55000551	841	55501310	764	55502448	772	55503260	829	55506195	799	55506810	804
53801080	708	55000561	841	55501310	779	55502449	772	55503261	829	55506205	799	55506815	804
53801085	752	55000571	841	55501320	764	55502451	772	55503262	829	55506215	799	55506820	804
53801090	708	55000572	841	55501320	779	55502452	772	55503263	829	55506225	799	55506825	804
53801095	752	55000911	841	55501330	764	55502453	772	55503264	829	55506235	799	55506900	804
53801100	708	55000921	841	55501330	779	55502454	772	55503265	829	55506245	799	55506905	804
53801105	752	55000931	841	55501340	764	55502455	772	55503266	829	55506255	799	55506910	804
53801115	752	55000941	841	55501340	779	55502456	772	55503275	833	55506265	799	55506915	804
53801125	752	55000951	841	55501350	764	55502457	772	55503276	833	55506275	799	55506920	804
54000011	730	55001080	807	55501350	779	55502458	773	55503277	833	55506285	799	55506925	804
54000015	736	55001081	807	55501360	764	55502459	773	55503278	833	55506295	799	55506930	804
54000040	743	55001082	807	55501360	779	55502460	772	55503279	832	55506300	798	55506935	804
54000043	730	55001083	807	55501370	764	55502461	772	55503280	832	55506305	798	55506940	804
54000071	743	55001085	807	55501370	779	55502462	772	55503281	832	55506310	798	55506945	804
54000098	730	55001086	807	55501400	780	55502463	772	55503282	832	55506315	798	55506950	804
54001610	743	55001090	807	55501410	780	55502464	772	55503283	832	55506320	798	55506955	804
54001620	743	55001091	807	55501420	780	55502465	772	55503284	832	55506325	798	55506960	804
54001630	743	55001092	807	55501430	780	55502466	772	55503285	832	55506330	798	55506965	804
54001640	743	55001093	807	55501440	780	55502467	772	55503305	830	55506335	798	55506970	804
54001650	743	55001200	787	55501450	780	55502468	772	55503306	830	55506340	798	55506975	804
54001660	743	55001210	787	55501460	780	55502469	772	55503307	830	55506345	798	55506980	804
54001670	743	55001230	787	55501470	780	55502470	772	55503308	830	55506350	798	55506985	804
54001680	743	55001240	787	55501500	777	55502471	772	55503309	830	55506355	798	55506990	803
54020100	703	55001310	622	55501500	817	55502472	772	55503310	830	55506360	798	55506995	803
54020110	703	55001312	608	55501510	777	55502473	772	55503311	830	55506365	798	55507000	805
54020120	703	55500400	824	55501510	817	55502474	772	55503312	830	55506370	798	55507005	805
54020130	703	55500410	824	55501520	777	55502476	772	55503313	830	55506375	798	55507010	805
54020140	703	55500420	824	55501520	817	55502477	772	555033					

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
55507275	799	6171670	774	61716740	945	61722240	827	61742822	884	61749450	940	61753200	950
55507285	799	61711710	774	61716760	945	61722270	824	61742824	884	61749460	940	61753210	950
55510000	840	61711750	774	61716780	945	61722280	840	61742826	884	61749470	940	61753220	950
55510010	840	61711790	774	61716800	945	61722285	840	61742890	964	61749480	940	61753230	950
55510020	840	61711830	774	61716820	945	61722286	840	61742900	884	61749490	940	61753240	950
55510030	840	61711910	774	61716840	945	61722330	824	61742922	884	61749500	940	61753250	950
55510040	840	61712460	824	61716860	945	61722340	824	61742926	884	61749510	940	61753260	950
55510050	840	61712470	827	61716880	945	61722825	939	61743045	939	61749520	940	61753270	950
55510060	840	61712480	827	61717000	972	61722835	939	61743200	938	61749530	940	61753280	950
55510200	839	61712490	827	61717040	972	61722840	951	61743215	939	61749540	940	61753290	950
55510210	839	61712500	827	61717070	972	61722875	939	61743225	939	61749550	940	61753300	950
55510220	839	61712510	827	61717440	968	61722905	939	61743235	939	61749560	940	61753310	950
55510230	839	61712520	827	61717460	968	61722915	939	61743245	939	61749570	940	61753320	950
55510240	839	61712530	827	61717480	968	61722925	939	61743290	929	61749580	940	61753330	950
55510250	839	61712660	883	61718610	966	61722935	939	61743920	932	61749590	940	61753340	950
55510260	839	61712680	883	61718620	966	61722945	939	61743930	934	61749600	940	61753350	950
55510270	839	61712840	827	61718630	966	61723010	958	61743940	934	61749610	940	61753360	950
55510280	839	61712850	827	61718640	966	61723020	958	61743950	934	61749620	940	61753370	950
55510290	839	61712860	827	61720000	959	61723030	958	61743960	934	61749630	940	61753380	950
55510400	839	61712870	827	61720070	959	61723040	958	61743980	935	61749640	940	61753390	950
55510410	839	61712880	827	61721030	942	61723050	958	61743989	936	61749650	940	61753400	950
55510420	839	61712890	827	61721040	942	61723060	958	61743990	935	61749660	940	61753410	950
55510430	839	61712900	827	61721045	942	61723070	958	61743991	936	61749670	940	61753620	905
55510440	839	61712910	824	61721050	942	61723110	958	61743992	937	61749680	940	61753760	938
55510450	839	61712930	824	61721060	942	61723120	958	61743993	936	61749690	940	61753762	939
55510460	839	61713000	825	61721070	942	61723130	958	61743994	937	61749700	940	61753763	939
55510470	839	61713003	825	61721080	942	61723140	958	61743995	935	61749710	940	61753764	939
55510480	839	61713005	825	61721090	942	61723150	958	61743996	935	61749720	940	61754000	797
55510600	839	61713007	825	61721100	942	61723160	958	61743997	936	61749730	940	61754005	797
55510610	839	61713010	825	61721110	942	61723350	958	61744160	903	61749740	940	61754010	797
55510620	839	61713011	825	61721120	942	61723351	956	61744161	903	61749750	940	61754015	797
55510630	839	61713014	825	61721130	942	61723352	956	61744180	907	61749810	940	61754020	797
55510640	839	61713015	825	61721140	942	61723353	956	61744228	828	61749820	940	61754025	797
55510650	839	61713016	825	61721160	960	61723354	956	61744229	828	61749830	940	61754030	797
56000100	790	61713017	825	61721170	960	61723355	956	61744230	828	61749840	940	61754035	797
56000105	790	61713018	825	61721180	960	61723356	956	61744231	828	61749850	940	61754040	797
56000120	791	61713019	825	61721190	960	61723357	956	61744240	828	61749860	940	61754045	797
56000125	791	61713025	825	61721200	960	61723358	956	61744242	828	61749870	940	61754050	797
56000130	791	61713027	825	61721260	758	61723380	958	61744250	947	61749880	940	61754055	797
56000135	791	61713030	825	61721261	758	61723390	958	61744535	947	61749890	940	61754060	797
56000140	791	61713031	825	61721262	758	61723400	958	61744540	947	61749900	940	61754065	797
56000145	791	61713032	825	61721263	758	61723410	958	61744545	947	61749910	940	61754070	797
56000150	791	61713033	825	61721264	758	61723420	958	61744550	947	61749920	940	61754075	797
56000155	791	61713034	825	61721265	758	61723430	958	61744555	947	61749930	940	61754270	797
56000160	791	61713035	825	61721270	758	61723440	958	61744560	947	61749940	940	61754275	797
56000165	791	61713036	825	61721271	758	61723460	958	61744565	947	61749950	940	61754300	797
60024	423	61713040	825	61721272	758	61723470	958	61744570	947	61749960	940	61754305	797
60055	423	61713080	942	61721273	758	61723810	968	61744575	947	61749970	940	61759940	951
60124	423	61713130	976	61721274	758	61723820	968	61744580	947	61749980	940	61760060	943
60501	422	61713210	759	61721280	758	61723840	968	61744585	947	61749990	940	61760070	943
60503	422	61713240	759	61721281	758	61723895	964	61744590	947	61750000	940	61760080	943
60622	424	61713270	759	61721282	758	61724000	964	61744595	947	61750010	940	61760090	943
60632	424	61713300	759	61721283	758	61724150	969	61744600	947	61750020	940	61760100	943
60641	417	61713330	759	61721340	938	61724160	969	61744610	947	61750030	940	61760110	943
60642	417	61713360	759	61721350	938	61724170	969	61744620	947	61750040	940	61760120	943
60643	417	61713390	759	61721360	938	61724180	969	61744630	964	61750050	940	61760130	943
60644	417	61713420	759	61721370	944	61724190	969	61746500	910	61750060	940	61760140	943
60645	417	61713520	709	61721380	944	61724400	965	61746501	910	61750070	940	61784650	891
60652	424	61713530	709	61721390	944	61724420	965	61746502	910	61751610	770	61784660	891
60722	424	61713540	709	61721420	944	61724430	966	61746503	910	61751620	770	61784670	891
60732	424	61713550	709	61721421	944	61724450	965	61746504	910	61751630	770	61789480	941
60795	425	61713560	709	61721422	944	61724720	965	61746505	910	61751640	770	61789490	941
60852	424	61713570	709	61721423	944	61724810	966	61746506	910	61751650	770	61789500	941
61102	421	61713580	709	61721530	914	61724820	966	61746507	910	61751660	770	61789510	941
61103	421	61713590	709	61721540	914	61724910	965	61746720	909	61751670	770	61789520	941
61201	425	61713600	709	61721550	914	61724920	965	61746770	909	61751680	770	61789530	941
61203	425	61714000	760	61721560	914	61725950	905	61746780	909	61751690	770	61789540	941
61600010	951	61714010	760	61721690	774	61725990	896	61746790	909	61751700	771	61789550	941
61600015	951	61714020	760	61721700	774	61725991	896	61746800	909	61751710	771	61789560	941
61600040	951	61714070	760	61721710	774	61725992	896	61746870	972	61751720	771	61789580	903
61600045	951	61714090	760	61721720	774	61725993	896	61746880	972	61751730	771	61790740	933
61600050	951	61714100	760	61721730	774	61726000	896	61746890	972	61751740	771	61790741	933
61600070	951	61714110	760	61721740	774	61726001	896	61746935	782	61751750	771	61790744	933
61600080	951	61714120	760	61721750	774	61726002	896	61746939	782	61751760	771	61790760	908
61600100	951	61715000	957	61721760	774	61726003	896	61746940	782	61751770	771	61790761	908
61600130	951	61715060	957	61721780	774	61726150	891	61746945	782	61751780	771	61790762	908
61610000	710	61715120	957	61721810	883	61726160	891	61746950	782	61751950	924	61790910	924
61610012	710	61715180	957	61721820	883	61726170	891	61746955	782	61752220	946	61790920	926
61610013	710	61715240	957	61721830	883	61726180	891	61746960	782	61752230	946	61790930	925
61710070	964	61715300	957	61721840	883	61726190	891	61746965	782	61752240	946	61790940	925

From partnumber 61791280 to 61817860

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page		
61791280	711	61796500	927	61800268	893	61801650	909	61803080	928	61806689	810	61811600	895
61791282	711	61796510	927	61800269	893	61801660	909	61803090	928	61806690	809	61811630	895
61791283	711	61796520	927	61800270	893	61801670	909	61803110	928	61806691	810	61811640	895
61791284	711	61796530	927	61800271	893	61801680	909	61803120	928	61806692	810	61811650	895
61791286	710	61796540	927	61800272	893	61801690	909	61803130	928	61806700	809	61811660	895
61791287	710	61796550	927	61800273	893	61801700	909	61803140	928	61806710	809	61811670	895
61791288	710	61796560	927	61800274	893	61801710	909	61803160	928	61806720	809	61811680	895
61792250	932	61796570	927	61800275	893	61801720	909	61803170	928	61806730	809	61811690	895
61793030	943	61796580	927	61800276	893	61801730	909	61803180	928	61806740	809	61812950	961
61793040	943	61796590	927	61800277	893	61801750	909	61803190	928	61806760	809	61812960	961
61793050	943	61796600	927	61800278	893	61801760	909	61803200	928	61806770	809	61812970	961
61793060	943	61796610	927	61800279	893	61801770	909	61803210	928	61806780	809	61812980	961
61793070	943	61796620	927	61800280	893	61801780	909	61803220	928	61806790	809	61812990	961
61793080	943	61796630	927	61800281	893	61801790	909	61803230	928	61806800	809	61813000	961
61793090	943	61796631	927	61800282	893	61801800	909	61803240	928	61808168	819	61813010	961
61793100	943	61796632	927	61800283	893	61801810	909	61803250	928	61808169	819	61813020	961
61793110	943	61796633	927	61800284	893	61801820	909	61803260	928	61808170	819	61813030	961
61793116	943	61796640	927	61800285	893	61801830	909	61803270	928	61808180	819	61813040	961
61793119	943	61796650	927	61800290	893	61801840	909	61803280	928	61808190	819	61813050	961
61793620	761	61796660	927	61800291	893	61801850	909	61803290	928	61808200	819	61813731	915
61793630	761	61796670	927	61800292	893	61801860	909	61803300	928	61808201	819	61813732	915
61793640	761	61796680	927	61800293	893	61801870	909	61803310	928	61808202	819	61813735	915
61793650	761	61796690	927	61800294	893	61801890	909	61803330	928	61808204	819	61813742	916
61793660	761	61796700	927	61800295	893	61801900	909	61803340	928	61808850	895	61813744	916
61793670	761	61796710	927	61800296	893	61801920	909	61803350	928	61808870	895	61813750	904
61793680	761	61796720	927	61800297	893	61801930	909	61803360	928	61808880	895	61813760	904
61793970	794	61796730	927	61800318	894	61801940	909	61803370	928	61808890	895	61813770	904
61793980	794	61796740	927	61800335	892	61801950	909	61803380	928	61808900	895	61813775	904
61793990	794	61796750	927	61800336	892	61801960	909	61803390	928	61808910	895	61813802	932
61794000	794	61796760	927	61800340	893	61801970	909	61803400	928	61808930	895	61813803	932
61794010	794	61796770	927	61800341	893	61801980	909	61803420	928	61808940	895	61813804	932
61794020	794	61796780	927	61800342	893	61801990	909	61803430	928	61808950	895	61813807	932
61794030	794	61796790	927	61800343	893	61801999	912	61803440	928	61808960	895	61813808	932
61794035	794	61796800	927	61800344	893	61802000	912	61804600	820	61808965	895	61813809	932
61794720	913	61796810	927	61800345	893	61802010	912	61804601	820	61809310	796	61813811	932
61794730	913	61796820	927	61800346	893	61802020	912	61804602	820	61809320	796	61813812	932
61794740	913	61796830	927	61800347	893	61802030	912	61804603	820	61809330	796	61813813	932
61794750	910	61796840	927	61800360	892	61802032	912	61804604	820	61810080	946	61813814	932
61794760	910	61796850	927	61800409	894	61802033	912	61804605	820	61810090	946	61813816	932
61794770	910	61796860	927	61800850	788	61802034	912	61804612	820	61810100	946	61813818	932
61794780	910	61796870	927	61800855	788	61802035	912	61804613	820	61810110	946	61813819	932
61794790	910	61796880	927	61800860	788	61802040	913	61804702	834	61810130	946	61813823	932
61794800	910	61796890	927	61800865	788	61802041	913	61804712	834	61810140	946	61813824	932
61794810	910	61796900	927	61800870	788	61802042	913	61804722	834	61810150	946	61813825	932
61794910	861	61796910	927	61800875	788	61802046	913	61804732	834	61810160	946	61813826	932
61794951	921	61796920	928	61800880	788	61802052	911	61804742	834	61810170	946	61813827	932
61794952	921	61796930	928	61800885	788	61802054	911	61804752	834	61810180	946	61813849	932
61794953	921	61796940	928	61800890	788	61802056	911	61804762	834	61810190	946	61813852	932
61794955	921	61796950	928	61800895	788	61802058	911	61804772	834	61810200	946	61813853	932
61794960	921	61796960	928	61800900	788	61802060	911	61804792	834	61810210	942	61813859	932
61794968	921	61796970	928	61800905	788	61802061	914	61804793	835	61810220	942	61813861	932
61794969	921	61796980	928	61800910	788	61802062	914	61804794	835	61810230	942	61813862	932
61794970	921	61796990	928	61800915	788	61802063	914	61804795	835	61810350	955	61813958	976
61794971	921	61797000	928	61800920	788	61802064	914	61804796	835	61810360	955	61813990	976
61794980	922	61797010	928	61800925	788	61802065	914	61804797	835	61810370	955	61814000	796
61795080	778	61797020	928	61800930	788	61802066	914	61804798	835	61810380	955	61814010	796
61795080	818	61797030	928	61800935	788	61802067	914	61804799	835	61810390	955	61814020	796
61795090	778	61797040	928	61801020	790	61802068	914	61805170	911	61810400	955	61814030	796
61795090	818	61797050	928	61801025	790	61802069	914	61805180	911	61810410	955	61814040	796
61795100	778	61797080	928	61801030	790	61802080	812	61805190	911	61810420	955	61814050	796
61795100	818	61797800	823	61801035	790	61802090	812	61805200	911	61810430	955	61814070	796
61795110	778	61797802	823	61801040	790	61802100	812	61805210	911	61810440	955	61814080	796
61795110	818	61797808	823	61801045	790	61802110	812	61805300	915	61810450	955	61814090	796
61795120	778	61797810	823	61801050	790	61802120	812	61805301	915	61810460	955	61814100	796
61795120	818	61797812	823	61801055	790	61802130	812	61805302	915	61810470	955	61814110	796
61795130	778	61797814	823	61801060	790	61802140	812	61805400	838	61810480	955	61814120	796
61795130	818	61797816	823	61801061	790	61802150	812	61805410	838	61810490	955	61814190	826
61795140	778	61797918	823	61801062	790	61802170	812	61805420	838	61810500	955	61814200	826
61795140	818	61797920	823	61801065	790	61802180	812	61805430	838	61810510	955	61814210	826
61795150	778	61797926	823	61801090	791	61802190	819	61805440	838	61810520	955	61814220	826
61795150	818	61797928	823	61801095	791	61802200	819	61805450	838	61810530	955	61814230	826
61795170	778	61797930	823	61801100	791	61802210	819	61805460	838	61810540	955	61814240	826
61795170	818	61797932	823	61801105	791	61802220	819	61805470	838	61810550	955	61814250	826
61795925	930	61799815	822	61801110	791	61802230	819	61805480	838	61810560	955	61814600	932
61795941	930	61799816	822	61801115	791	61802240	819	61806430	918	61810850	948	61814601	932
61795942	930	61799817	822	61801120	789	61802250	819	61806550	811	61810860	948	61814604	932
61795950	930	61799818	822	61801125	789	61802270	819	61806555	811	61810870	948	61815100	783
61795951	930	61799819	822	61801130	789	61802380	813	61806560	811	61810890	948	61815105	783
61795960	930	61799820	822	61801135	789	61802390	813	61806565	811	61810900	948	61815110	783
61795970	930	61799822	822	61801140	789	61802400	813	61806570					

From partnumber 64400010 to 72402000

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page		
64400010	815	68100060	801	70002723	231	70136400	569	7027004	137	70345476	224	7072410	105
64400020	815	68100065	801	70002724	231	70140400	572	7027007	137	70345503	224	7072414	105
64400030	815	68100070	801	70002726	230	70140600	572	7027010	137	70345521	224	7072415	105
64400040	815	68100075	801	70002727	230	70142400	571	7027012	137	70345522	224	7072416	105
64400050	815	68100080	801	70002728	230	70144400	559	7027015	137	70345541	224	7072417	105
64400060	815	68100085	801	70002729	230	70144600	559	7027016	137	70345542	224	7072500	106
64400070	815	68100090	801	70002731	230	70145200	570	7027017	137	70345543	224	7072501	106
64400080	815	68100095	801	70002732	230	70145400	570	7027020	138	70345545	224	7072502	106
64400090	815	68100100	802	70002734	230	70146200	570	7027021	138	70362272	237	7072507	106
64400100	815	68100105	802	70002735	230	70146400	570	7027022	138	7038859	379	7072508	106
64400110	815	68100110	802	70002750	232	70150400	561	7027024	138	7038860	379	7072509	106
64400120	815	68100115	802	70002751	232	70150600	561	7027025	138	7038861	379	7072510	106
64400130	815	68100120	802	70002752	232	70152400	563	70270251	229	7038862	379	7072511	106
64400140	815	68100125	802	70002753	232	70152600	563	7027030	138	7038864	379	7072512	106
64400150	815	68100130	802	70002754	232	70154400	560	7027031	138	7038865	379	7072513	106
64400160	815	68100135	802	70002755	232	70154600	560	7027032	138	7038866	379	7072514	106
64400170	815	68100140	802	70002756	232	70155400	562	7027034	137	7038867	379	7072515	106
64400180	815	68100145	802	70002757	232	70155600	562	7027035	137	7038868	379	7072516	106
64400200	828	68100150	802	70002758	232	70157400	563	7027038	138	70388718	107	7072517	106
64400210	828	68100155	802	70002759	232	70157600	563	7027039	139	70388719	107	71002837	241
64400220	828	68100160	802	70002760	232	70160200	566	7027040	139	70388720	107	71002840	241
64400230	828	68100165	802	70002761	232	70160400	566	7027043	139	70388721	107	71002843	241
64400240	828	68100170	802	70005200	528	70161200	566	7027046	138	70388722	107	71002844	241
64400250	828	68100175	802	70005400	528	70161400	566	7027052	139	70388724	107	71002846	241
64400500	814	68100180	802	70006200	529	70164200	567	7027054	139	70388726	107	71002847	241
64400501	814	68100185	802	70010200	531	70164400	567	7027055	139	70388727	107	71220115	233
64400502	814	70010190	802	70010400	531	70165200	567	7027056	139	70388728	107	71220116	233
64400503	814	68100195	802	70015200	530	70165400	567	7027057	139	70388730	107	71220117	233
64400504	814	68100200	802	70016200	530	70250200	521	7027058	139	70388731	107	71220118	233
64400505	814	68100205	802	70020200	526	70250201	521	7027059	139	70388732	107	71220119	233
64400506	814	68100210	802	70020400	526	70250202	521	7027060	137	70388733	107	71220120	233
64400507	814	68100215	802	70022200	527	70250203	521	70270602	229	70388734	107	71220121	233
64400508	814	68100220	802	70022400	527	70250204	521	70270603	229	70388735	107	71220122	233
64453660	775	68100225	802	70035200	540	70250205	521	7027061	137	7038880	373	71220131	233
64453670	775	68880005	801	70035400	540	70250206	522	7027062	137	7038881	373	71220132	233
64453680	775	70002622	230	70036200	541	70250207	522	7027063	137	7038882	373	71220133	233
64453690	775	70002623	230	70036400	541	70250208	522	7027064	137	70389020	223	71220134	233
64453700	775	70002624	230	70040200	543	70250209	522	7027065	137	70391522	223	71220135	233
64453710	775	70002625	230	70040400	544	70250210	523	7027066	137	70392839	224	71220136	233
64453720	775	70002628	230	70040600	544	70250211	523	7027067	137	70392984	224	71220137	233
64453730	775	70002629	230	70042200	543	70250212	523	7027068	137	70410000	224	71220138	233
64453750	775	70002630	230	70042400	543	70250213	523	7027069	137	70410001	224	71220151	233
65500200	793	70002631	230	70042600	543	70250214	524	7027070	137	70410002	224	71220152	233
65500205	793	70002634	230	70044200	532	70250215	524	7027071	137	70415001	225	71220153	233
65500210	793	70002635	230	70044400	532	70250216	524	7027073	137	70415002	225	71220154	233
65500215	793	70002636	230	70045200	542	70250217	524	7027074	137	70415005	225	71220163	234
65500220	793	70002637	230	70045400	542	70250219	525	7027079	138	70430001	222	71220164	234
65500225	793	70002640	230	70046200	542	70250220	525	7027080	138	70430002	222	71220165	234
65500230	793	70002641	230	70050400	533	70250221	525	7027081	138	70430003	222	71220166	234
65500235	793	70002642	230	70050600	533	70250222	525	7027082	138	70430004	222	71222231	240
65500240	793	70002643	230	70052400	535	70260001	243	7027083	138	70430005	222	71222232	240
65500245	793	70002646	230	70052600	535	70260018	243	7027084	138	70430006	223	71222234	240
65500250	793	70002647	230	70054200	533	70260021	243	7027085	138	70430007	223	71222239	240
65500255	793	70002648	230	70054400	533	70260046	244	7027086	138	70430008	223	71222240	240
65500260	793	70002649	230	70055200	534	70260053	244	7027087	138	70430009	222	71222241	240
65500265	793	70002651	230	70055400	534	70261130	236	7027088	138	70430096	223	71222242	240
65500270	793	70002652	230	70057200	535	70261131	236	7027089	138	70430149	223	71222243	240
65500275	793	70002653	230	70057400	535	70261132	236	7027090	138	70430150	222	71222292	240
65500300	793	70002654	230	70060200	538	70261133	236	7027091	138	70430151	222	71222295	240
65500305	793	70002656	230	70060400	538	70261134	236	7027092	138	70430249	226	71222296	240
65500310	793	70002657	230	70061200	538	70261135	236	7027093	138	70430250	226	71222298	240
65500315	793	70002658	230	70061400	538	70261136	236	7027094	138	70430251	226	71222299	240
65500320	793	70002659	230	70064200	539	70261137	236	7027130	138	70430252	226	71222301	240
65500325	793	70002661	230	70064400	539	70261138	236	70274000	227	70430118	223	71222302	240
65500330	793	70002662	230	70065200	539	70261139	237	70274001	227	70444000	504	71222304	240
65500335	793	70002663	230	70065400	539	70261140	237	70274002	227	70450000	507	71222305	240
65500340	793	70002664	230	70085200	554	70261141	237	70274003	227	70450400	507	72004000	597
65500345	793	70002666	230	70085400	554	70261143	237	70274004	228	70455200	506	72004010	597
65500350	793	70002667	230	70086200	555	70261144	237	70274005	228	70455400	506	72004100	597
65500355	793	70002668	230	70086400	555	70261145	237	70274006	228	70456200	506	72004110	597
65500360	793	70002669	230	70090200	558	70261146	237	70274007	228	70456400	506	72004200	597
65500365	793	70002670	230	70090400	558	70261147	237	70274008	228	70460200	502	72004210	597
65500370	793	70002671	230	70092200	557	70261148	237	70274009	229	70460400	502	72004000	598
65500375	793	70002672	230	70092400	557	70261149	237	70301549	223	70462200	503	72004010	598
65500380	793	70002673	230	70094200	545	70261150	237	70301550	223	70462400	503	72004020	598
65500385	793	70002681	231	70094400	545	70261151	237	70301553	223	70474000	510	72004030	598
65500390	801	70002682	231	70095200	556	70261152	237	70301554	223	70480200	513	72004100	598
65500395	801	70002683	231	70095400	556	70261153	237	70301563	223	70480400	513	72004110	598
65500405	801	70002684	231	70096000	555	70261154	237	70301564	223	70485200	512	72004120	598
65500410	801	70002687	231	70096200	556	70261155	237	70301567	223	70485400	512	72004130	598
65500415	801	70002688											

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
72402001	608	73018010	607	73221563	238	74880026	252	75009709	610	79095200	556	83251131	855
72402600	608	73018500	607	73222322	239	74880027	252	75017400	622	79095400	556	83251141	855
72402601	608	73018510	607	73222323	239	74880028	252	75017500	622	79096000	555	83251300	870
72403000	608	73028000	607	73222324	239	74880029	249	75018010	608	79096200	556	83251320	870
72403100	608	73028010	607	73222325	239	74880030	249	75018010	622	79096400	556	83251350	870
72404000	608	73028500	607	73222326	239	74880031	250	75018110	608	79100200	547	83251402	875
72404100	608	73028510	607	73222327	239	74880032	250	75018110	622	79100400	547	83251406	875
73000000	620	73220107	233	73222328	239	74880033	251	75018310	608	79100800	547	83251422	875
73000001	620	73220108	233	73222329	239	74880034	251	75018310	622	79102200	549	83251426	875
73000002	620	73220109	233	73222330	239	74880035	251	76003000	614	79102400	549	83251450	875
73000003	620	73220110	233	73222331	239	74880036	251	76003510	614	79102800	549	83251451	875
73000004	616	73220111	233	73222332	239	74880037	246	76004000	618	79104200	546	83251454	875
73000005	616	73220112	233	73222333	239	74880038	246	76004510	618	79104400	546	83251456	875
73000006	616	73220113	233	73222334	237	74880039	245	76083000	615	79104800	546	83251466	875
73000007	616	73220114	233	73222335	237	74880040	245	76083510	615	79105200	548	83251468	875
73000008	621	73220123	233	73222336	237	74880041	246	76084000	619	79105400	548	83251478	875
73000009	621	73220124	233	73222337	239	74880042	246	76123000	616	79107200	549	83251479	875
73000010	621	73220125	233	73222375	239	74880043	245	76123100	616	79107400	549	83251670	887
73000011	621	73220126	233	73222381	237	74880044	245	76123510	616	79110200	552	83251671	887
73000012	617	73220127	233	73222383	239	74880045	246	76123610	616	79110400	552	83251672	887
73000013	617	73220128	233	73222384	239	74880046	246	76124000	620	79111200	552	83251673	887
73000014	617	73220129	233	73222385	239	74880047	245	76124100	620	79111400	552	83251674	887
73000015	617	73220130	233	73222386	239	74880048	245	76124510	620	79114200	553	83251680	887
73000016	621	73220139	233	74020601	608	74880049	252	76124610	620	79114400	553	83251681	887
73000017	621	73220140	233	74020601	622	74880050	245	76133000	617	79115200	553	83251682	887
73000020	617	73220141	233	74033000	622	74880051	247	76133510	617	79115400	553	83251683	887
73000021	617	73220142	233	74033001	622	74880052	247	76134000	621	79128600	547	83251684	887
73000023	617	73220143	233	74033100	622	74880053	247	76134510	621	79135200	568	83251690	887
73000024	620	73220144	233	74033101	622	75007710	608	76143000	617	79135400	568	83251691	887
73000025	620	73220145	233	74034000	622	75007710	622	76144000	621	79136200	569	83251692	887
73000026	620	73220146	233	74034001	622	75007810	608	76144510	621	79136400	569	83251693	887
73000027	620	73220147	233	74034100	622	75007810	622	76153000	615	79140400	572	83251694	887
73000028	616	73220148	233	74034101	622	75009601	583	76153510	615	79140600	572	83251996	866
73000029	616	73220149	233	74034500	608	75009602	584	76154000	619	79142400	571	83252001	866
73000030	616	73220150	233	74034501	622	75009603	583	76154510	619	79142600	571	83252002	866
73000031	616	73220155	233	74034501	608	75009604	584	79005200	528	79144400	559	83252005	867
73002700	606	73220156	233	74034501	622	75009605	583	79005400	528	79144600	559	83252010	868
73002701	606	73220157	234	74034600	622	75009606	584	79005600	528	79144800	559	83252011	868
73002702	606	73220158	234	74034601	622	75009607	583	79006200	529	79145400	570	83252020	867
73002703	606	73220159	234	74200600	608	75009608	584	79006400	529	79146400	570	83252024	868
73002704	606	73220160	234	74200600	622	75009609	583	79006600	528	79150400	561	83252027	866
73002705	606	73220161	234	74303559	223	75009610	584	79010200	531	79150600	561	83252028	866
73002706	606	73220162	234	74305559	222	75009611	583	79015200	530	79150800	561	83252047	868
73002707	606	73220200	235	74305659	222	75009612	584	79015400	530	79152400	563	83252055	869
73002708	606	73220201	235	74305759	222	75009613	585	79015600	529	79152600	563	83252056	869
73002709	606	73220202	235	74305859	222	75009614	586	79016200	530	79152800	563	83252057	869
73002710	606	73220203	235	74306059	222	75009615	585	79016400	530	79154400	560	83252058	869
73002711	606	73220204	235	74306159	222	75009616	586	79016600	529	79154600	560	83252059	869
73002712	606	73220205	235	74306659	222	75009617	585	79020200	526	79154800	560	83252060	869
73002713	606	73220206	235	74306759	222	75009618	586	79020400	526	79155400	562	83252061	869
73002714	606	73220207	235	74306859	222	75009619	585	79022200	527	79155600	562	83252062	869
73002715	606	73220208	235	74307059	222	75009620	586	79022400	527	79157400	563	83252076	869
73002716	606	73220209	235	74307159	222	75009621	585	79035200	540	79157600	563	83252081	866
73002717	606	73220210	235	74307259	222	75009622	586	79035400	540	79160200	566	83252084	866
73002718	606	73220211	235	74307459	222	75009623	585	79036200	541	79160400	566	83252086	866
73002719	606	73220212	235	74308259	222	75009624	586	79036400	541	79161200	566	83252089	866
73002720	606	73220213	235	74308559	222	75009625	587	79040200	543	79161400	566	83252101	869
73002721	606	73220214	235	74308659	222	75009626	587	79040400	544	79164200	567	83252300	869
73002722	606	73220215	235	74308959	222	75009627	587	79040600	544	79164400	567	83252301	869
73002723	606	73220216	235	74309159	222	75009628	587	79042200	543	79165200	567	83252302	869
73002724	605	73220217	235	74309960	222	75009629	587	79042400	543	79165400	567	83252303	869
73002725	605	73220218	235	74313361	222	75009630	588	79042600	543	79178500	561	83252304	869
73002726	605	73220219	235	74313661	222	75009631	588	79044200	532	79450000	507	83252305	869
73002727	605	73220220	235	74320092	237	75009632	588	79044400	532	79450400	507	83252306	869
73002728	605	73220221	235	74320106	237	75009633	588	79045200	542	79455200	506	83252307	869
73002729	605	73220222	235	74320320	225	75009634	588	79046200	542	79455400	506	83252308	869
73002730	605	73220223	235	74320499	225	75009635	589	79046400	542	79456200	506	83252309	869
73002731	605	73220224	235	74320540	225	75009636	589	79046600	541	79456400	506	83252310	869
73002732	605	73220230	235	74321272	225	75009637	589	79050400	533	79460200	502	83252311	869
73002733	605	73220231	235	74321426	225	75009638	589	79050600	533	79460400	502	83252312	869
73002734	605	73220232	235	74322480	225	75009639	589	79052400	535	79462200	503	83252313	869
73002735	605	73220233	235	74322629	225	75009640	590	79052600	535	79462400	503	83252314	869
73002736	605	73220234	235	74323073	225	75009641	590	79054200	533	79480200	513	83252315	869
73002737	605	73220235	235	74323522	225	75009642	590	79054400	533	79480400	513	83252317	869
73002738	605	73220236	235	74323672	225	75009643	590	79055200	534	79485200	512	83252318	869
73002739	605	73220237	235	74880000	248	75009644	590	79055400	534	79485400	512	83252319	869
73002740	605	73220238	235	74880001	248	75009645	591	79055700	534	79486400	512	83252320	869
73002741	605	73220239	235	74880002	248	75009646	591	79057200	535	79490200	508	83252321	869
73002742	605	73220842	238	74880003	248	75009647	591	79057700	535	79490400	508	83252323	869
73002743	605	73220843	238	74880004	248	750							

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page		
83252671	857	83254220	872	83256204	882	83259731	888	83280010	854	871815	127	CE6326	483
83252672	857	83254372	886	83256206	882	83259736	888	83280011	854	871818	127	CE6382	426
83252673	857	83254374	886	83256207	882	83259737	888	83280012	854	871818CY	128	CE6547	416
83252674	857	83254375	886	83256209	882	83259742	888	83280013	854	871825	127	CE6548	416
83252675	857	83254376	886	83256210	882	83259743	888	83280014	854	871825CY	128	CE6549	416
83252676	858	83254378	886	83256212	882	83259748	888	83280015	854	872003	127	CE6550	416
83252693	857	83254420	879	83256213	882	83259749	888	83280016	854	872003CY	128	CE6551	416
83252694	857	83254460	879	83256215	882	83259755	888	83280017	854	872004	127	CE6552	416
83252695	856	83254480	879	83256216	882	83259756	888	83280029	871	872004CY	128	CE6553	416
83253012	866	83254500	879	83256218	882	83259763	888	83280030	871	872005	127	CE6554	416
83254101	873	83254520	879	83256219	882	83259764	888	83280031	871	872005CY	128	CE6555	416
83254120	874	83254600	887	83256221	882	83259769	888	83280032	871	872007	127	CE6556	416
83254122	874	83254605	887	83256222	882	83259770	888	83280033	871	872007CY	128	CE6647	416
83254150	874	83254610	887	83256224	882	83259775	888	83280034	871	872012	127	CE6648	416
83254151	874	83254615	887	83256225	882	83259776	888	83280035	871	872012CY	128	CE6649	416
83254152	874	83254650	858	83259021	869	83259846	889	83280036	871	872018	127	CE6650	416
83254153	874	83254660	858	83259078	867	83259847	889	83280037	871	872018CY	128	CE6651	416
83254154	874	83254670	858	83259079	867	83259848	889	83280038	871	872025	127	CE6652	416
83254155	874	83254680	856	83259080	867	83259849	889	83280039	871	872025CY	128	CE6653	416
83254156	874	83254680	857	83259081	867	83259850	889	83280040	871	93401	438	CE6654	416
83254157	874	83254680	858	83259084	867	83259851	889	83280041	871	93411	438	CE6655	416
83254158	874	83254701	858	83259085	867	83259860	889	83280042	871	93441	438	CE6656	416
83254159	874	83254750	879	83259086	867	83259861	889	83280043	871	93471	438	CE6660	417
83254160	874	83254760	879	83259087	867	83259870	889	83280044	871	93561	437	CE6661	417
83254161	874	83254765	879	83259602	885	83259871	889	83280045	871	93581	437	CE6662	417
83254162	874	83254960	867	83259603	886	83259950	866	83280046	871	93681	437	CE6664	417
83254163	874	83254961	867	83259604	886	83259951	866	83280047	872	93781	437	CE6847	416
83254164	874	83254962	867	83259609	886	83263000	855	83280048	873	93911	438	CE6848	416
83254165	874	83254963	867	83259610	888	83263001	855	870604	127	93931	438	CE6849	416
83254166	874	83254964	867	83259611	888	83263002	855	870604CY	128	9396	438	CE6850	416
83254167	874	83254965	867	83259622	888	83263003	855	870804	127	9457	437	CE6851	416
83254168	874	83254976	867	83259623	888	83263004	855	870804CY	128	94641	437	CE6852	416
83254169	874	83254977	867	83259628	888	83263005	855	871004	127	94651	437	CE6853	416
83254170	874	83254978	867	83259629	888	83263006	855	871004CY	128	9477	437	CE6854	416
83254171	874	83255011	854	83259634	888	83263007	855	871204	127	94841	437	CE6855	416
83254172	874	83255012	854	83259635	888	83263008	855	871204CY	128	94891	437	CE6856	416
83254173	874	83255013	854	83259640	888	83264000	876	871207	127	94931	437	CE9009	440
83254174	874	83255014	854	83259641	888	83264001	876	871207CY	128	9495	437	CE9011	440
83254175	874	83255015	854	83259642	888	83264002	876	871404	127	9498	437	CE9135	439
83254177	874	83256090	881	83259643	888	83264003	876	871404CY	128	9501	437	CE9138	439
83254178	874	83256091	881	83259652	888	83264005	876	871407	127	9508	437	CE9139	439
83254179	874	83256092	881	83259653	888	83264006	876	871407CY	128	9509	437	CE9147	439
83254180	874	83256093	881	83259654	888	83264009	876	871603	127	9510	437	CE9150	440
83254181	874	83256096	881	83259655	888	83264010	876	871603CY	128	9511	437	CE9151	440
83254182	874	83256097	881	83259664	888	83264011	876	871604	127	9513	437	CE9152	440
83254183	874	83256142	880	83259665	888	83264012	876	871604CY	128	9519	437	CE9153	440
83254184	874	83256143	880	83259670	888	83264013	876	871605	127	9521	437	CE93191	440
83254185	874	83256144	880	83259671	888	83264014	876	871605CY	128	9523	437	CE9441	440
83254186	874	83256145	880	83259672	888	83264015	876	871607	127	9528	437	CE9449	440
83254189	874	83256146	880	83259673	888	83264018	876	871607CY	128	9531	437	CE9458	440
83254191	874	83256147	880	83259682	888	83264019	876	871612	127	CE217489	405	CE94591	440
83254192	874	83256148	880	83259683	888	83264020	876	871612CY	128	CE5076	426	CE9460	440
83254193	874	83256149	880	83259684	888	83264022	876	871618	127	CE5091	420	CE94611	440
83254194	874	83256150	880	83259685	888	83264025	876	871618CY	128	CE5092	420	CE9462	440
83254195	874	83256151	880	83259694	888	83264026	876	871625	127	CE5093	420	CE9913	440
83254196	874	83256152	880	83259695	888	83264050	876	871625CY	128	CE6147	417	CE9914	440
83254198	874	83256153	880	83259700	888	83264053	876	871803	127	CE6148	417	CE9914D	440
83254199	874	83256154	880	83259701	888	83264056	876	871803CY	128	CE6149	417	CE9916	440
83254200	874	83256155	880	83259706	888	83264058	876	871804	127	CE6150	417	CE9917	440
83254201	874	83256156	881	83259707	888	83264062	876	871804CY	128	CE6151	417	CE9918	440
83254202	874	83256157	881	83259712	888	83264065	876	871805	127	CE6152	417	CE9919	440
83254210	872	83256158	881	83259713	888	83280000	869	871805CY	128	CE6154	417		
83254211	872	83256159	881	83259718	888	83280001	869	871807	127	CE6155	417		
83254212	872	83256160	880	83259719	888	83280002	869	871807CY	128	CE6321	418		
83254213	872	83256161	880	83259725	888	83280005	879	871812	127	CE6323	418		
83254214	872	83256203	882	83259730	888	83280006	867	871812CY	128	CE6324	419		

Product	Page
1	
19" Splice Box for SC	439
19" Splice Box for ST	439
3	
3M Scotch™ 1183 screening tape	944
A	
A-2Y(L)2Y ...ST III BD Telephone Outdoor Cable	299
A-2YF(L)2Y ...ST III BD Outdoor Cable	299
Accessories for Splice Box and Wall mounted Rack	440
AFW-PA / SILVYN® AFG-PA	807
AS-i clip clamp / AS-i End sealing	967
AS-Interface counter module	389
AS-Interface Distributor	388
AS-Interface Modules (IP30)	384
AS-Interface Modules (IP67)	383
AS-Interface network extension	390
AS-Interface plug terminals	390
AS-Interface power supply	389
AS-I STRIP special stripping tool	908
AVG 0160 cable stripping and twisting machine	908
B	
BASIC cable tie pliers	963
Basic Tie cable tie	953
Basic Tie Ident BTI-I Cable tie	890
Basic Tie Ident BTI-II Cable tie	890
Basic Tie Ident BTI-III Cable tie	890
BULLI cable shears	903
BUS M12 connectors that can be assembled	395
C	
Cable-Eater bunched cable conduit	952
Cablefix	677
Cable lugs KB	920
Cable shears KT 4 and KT 5	904
Cable trolley system for round and flat cables	970
CANopen Modules	387
CC cord clips	968
CEE Charging cable 3-way	250
CEE charging cable 3-way spiral	250
CEE charging cable 5-way	251
CEE charging cable 5-way spiral	251
CEE charging socket 3-way	252
CEE charging socket 5-way	252
CMP shrink tube	947
Coaxial cables RGB	402
Coaxial - RG	401
Coiling tool spirals	951
COMBINOX cable shears	902
Comfort Tool	422
Complete connection hood with 4, 6 or 8 slots	376
Conductor end sleeves AH, not insulated	914
Conductor end sleeves AHK, insulated	910
Conductor end sleeves insulated	909
Conductor end sleeves XL, insulated	914
Connector RJ45 CAT.5 Hirose TM11	418
Connector RJ45 CAT.5 Stewart SS37	418
Connector RJ45 Cat.6A fieldmountable	419
Connector RJ45 CAT.6 Hirose TM21	419
Copper braid	944
CrimmBoss electromagnetic crimping device	918
Crimping inserts for ERG 740	939
Crimping tool RJ45 Hirose	420
Crimping tool RJ45 Stewart	420
CSA 0760 + KSA 0760 crimping pliers	924
D	
Data Binder LSA+	426
DATA STRIP stripping tool	907
Deciband AHIB insulated conductor end sleeves	910
DeviceNet/CANopen Cable, M12 connector on free conductor end	393
DeviceNet Modules	386

Product	Page
Die holders for system 1311	930
Die holders for system 1311	930
DIN-assorted boxes conductor end sleeves	913
DIN-Coil conductor end sleeves	911
DIN-strips for QUADRO	911
DKB 0325 + DKB 0360 crimping pliers	926
DKK double clamp	975
DRB 0505 + DRB 0115 crimping pliers	925
DSA 0110 + DSA 0725 crimping pliers	924
Duplex Jumper/Patchcord	437
DYMO® ID1 - Industry tape D1	893
DYMO® Industry Rhino Pro 6000 Kit /	
DYMO® Rhino Pro 5200	892
DYMO® Tape D1	895
E	
EASY STRIP 2 stripping and cutting tool	905
Easy Termination Tool	422
EKK single clamp	975
EPIC® Adapter plates for 1 D-Sub insert	582
EPIC® Adapter plates for 2 D-Sub inserts	582
EPIC® CE6326 Connector RJ45	483
EPIC® Coding parts	580
EPIC® Cover plates	582
EPIC® Data CAN-Bus Connectors 180°	331
EPIC® Data CAN-Bus Connectors 90°	330
EPIC® Data PROFIBUS Connectors 180° Fast Connect	322
EPIC® Data PROFIBUS Connectors 180° Screw Terminals	321
EPIC® Data PROFIBUS Connectors 35° Fast Connect	313
EPIC® Data PROFIBUS Connectors 35° Screw Terminals	312
EPIC® Data PROFIBUS Connectors 90° Fast Connect	316
EPIC® Data PROFIBUS Connectors 90° LED Fast Connect	318
EPIC® Data PROFIBUS Connectors 90°	
LED Screw Terminals	317
EPIC® Data PROFIBUS Connectors 90° M12	323
EPIC® Data PROFIBUS Connectors 90° Screw Terminals	314
EPIC® Data PROFIBUS Connectors 90° Spring type	315
EPIC® Data PROFIBUS Connectors ATEX Screw Terminals	319
EPIC® Data PROFIBUS Connectors REPEATER	320
EPIC® Fixing screws	580
EPIC® Flat gaskets for housings H-A und H-B	580
EPIC® H-A 10	451
EPIC® H-A 10 AD-LB	504
EPIC® H-A 10 AG-LB	504
EPIC® H-A 10 Kits	587
EPIC® H-A 10 SDR-LB	506
EPIC® H-A 10 SDRL-LB	506
EPIC® H-A 10 SGR-LB	505
EPIC® H-A 10 SGRL-LB	505
EPIC® H-A 10 TBFH-LB	507
EPIC® H-A 10 TBF-LB	507
EPIC® H-A 10 TG	502
EPIC® H-A 10 TGH	502
EPIC® H-A 10 TS	503
EPIC® H-A 10 TSH	503
EPIC® H-A 16	451
EPIC® H-A 16 AD-LB	510
EPIC® H-A 16 AG-LB	510
EPIC® H-A 16 Kits	588
EPIC® H-A 16 SDR-LB	512
EPIC® H-A 16 SDRL-LB	512
EPIC® H-A 16 SGR-LB	511
EPIC® H-A 16 SGRL-LB	511
EPIC® H-A 16 TBFH-LB	513
EPIC® H-A 16 TBF-LB	513
EPIC® H-A 16 TG	508
EPIC® H-A 16 TGH	508
EPIC® H-A 16 TS	509
EPIC® H-A 16 TSH	509
EPIC® H-A 3	450
EPIC® H-A 32	452
EPIC® H-A 32 AD-BO	516
EPIC® H-A 32 AG	516
EPIC® H-A 32 SDR-BO	518

EPIC® H-A 32 SDRL-BO to EPIC® H-B 32 TBFH

Product	Page
EPIC® H-A 32 SDRL-BO	518
EPIC® H-A 32 SGR	517
EPIC® H-A 32 SGRL	517
EPIC® H-A 32 TBF	518
EPIC® H-A 32 TG	514
EPIC® H-A 32 TGB	514
EPIC® H-A 32 TS	515
EPIC® H-A 32 TSB	515
EPIC® H-A 3 Cable Coupler Hood metal (straight entry)	501
EPIC® H-A 3 Cable Coupler Hood Thermoplastic (straight entry)	501
EPIC® H-A 3 Hood Metal side entry	498
EPIC® H-A 3 Hood Metal straight entry	497
EPIC® H-A 3 Hood Thermoplastic side entry	498
EPIC® H-A 3 Hood Thermoplastic straight entry	497
EPIC® H-A 3 Kits Metal	584
EPIC® H-A 3 Kits Thermoplastic	583
EPIC® H-A 3 Panel Mount Base (angled)	499
EPIC® H-A 3 Panel Mount Base (straight)	499
EPIC® H-A 3 Panel Mount Base with cover	499
EPIC® H-A 3 Surface Mount Base	500
EPIC® H-A 3 Surface Mount Base (open bottom)	500
EPIC® H-A 4	450
EPIC® H-A 48	452
EPIC® H-A 48 AG	520
EPIC® H-A 48 SGR	520
EPIC® H-A 48 SGRL	520
EPIC® H-A 48 TG	519
EPIC® H-A 48 TS	519
EPIC® H-A 4 Kits Metal	586
EPIC® H-A 4 Kits Thermoplastic	585
EPIC® H-B 10 AD-BO	536
EPIC® H-B 10 AD-LB	536
EPIC® H-B 10 AG	536
EPIC® H-B 10 AG-LB	536
EPIC® H-B 10 AGS-LB	537
EPIC® H-B 10 SDR-BO	541
EPIC® H-B 10 SDRH-BO	542
EPIC® H-B 10 SDRH-LB	539
EPIC® H-B 10 SDR-LB	538
EPIC® H-B 10 SDRL-BO	541
EPIC® H-B 10 SDRLH-BO	542
EPIC® H-B 10 SDRLH-LB	539
EPIC® H-B 10 SDRL-LB	539
EPIC® H-B 10 SGR	540
EPIC® H-B 10 SGRH	540
EPIC® H-B 10 SGRH-LB	538
EPIC® H-B 10 SGRL	540
EPIC® H-B 10 SGR-LB	537
EPIC® H-B 10 SGRLH	541
EPIC® H-B 10 SGRLH-LB	538
EPIC® H-B 10 SGRL-LB	537
EPIC® H-B 10 TBF	543
EPIC® H-B 10 TBFH	544
EPIC® H-B 10 TBFH-LB	543
EPIC® H-B 10 TBF-LB	543
EPIC® H-B 10 TG	533
EPIC® H-B 10 TGB	534
EPIC® H-B 10 TGBH	534
EPIC® H-B 10 TGH	533
EPIC® H-B 10 TGH-RO	532
EPIC® H-B 10 TG-RO	532
EPIC® H-B 10 TS	534
EPIC® H-B 10 TSB	535
EPIC® H-B 10 TSBH	535
EPIC® H-B 10 TSH	535
EPIC® H-B 10 TSH-RO	533
EPIC® H-B 10 TS-RO	532
EPIC® H-B 16 AD-BO	551
EPIC® H-B 16 AD-LB	550
EPIC® H-B 16 AG	550
EPIC® H-B 16 AG-LB	550
EPIC® H-B 16 SDR-BO	555
EPIC® H-B 16 SDRH-BO	556

Product	Page
EPIC® H-B 16 SDRH-LB	553
EPIC® H-B 16 SDR-LB	552
EPIC® H-B 16 SDRL-BO	555
EPIC® H-B 16 SDRLH-BO	556
EPIC® H-B 16 SDRLH-LB	553
EPIC® H-B 16 SDRL-LB	553
EPIC® H-B 16 SGR	554
EPIC® H-B 16 SGRH	554
EPIC® H-B 16 SGRH-LB	552
EPIC® H-B 16 SGRL	554
EPIC® H-B 16 SGR-LB	551
EPIC® H-B 16 SGRLH	555
EPIC® H-B 16 SGRLH-LB	552
EPIC® H-B 16 SGRL-LB	551
EPIC® H-B 16 TBF	557
EPIC® H-B 16 TBFH	558
EPIC® H-B 16 TBFH-LB	557
EPIC® H-B 16 TBF-LB	557
EPIC® H-B 16 TG	546
EPIC® H-B 16 TG 2X	546
EPIC® H-B 16 TGB	548
EPIC® H-B 16 TGBH	548
EPIC® H-B 16 TGH	547
EPIC® H-B 16 TGH 2X	547
EPIC® H-B 16 TGH-RO	545
EPIC® H-B 16 TG-RO	545
EPIC® H-B 16 TS	548
EPIC® H-B 16 TSB	549
EPIC® H-B 16 TSBH	549
EPIC® H-B 16 TSH	549
EPIC® H-B 16 TSH-RO	546
EPIC® H-B 16 TS-RO	545
EPIC® H-B 24 AD-BO	564
EPIC® H-B 24 AD-LB	564
EPIC® H-B 24 AG	564
EPIC® H-B 24 AG-LB	564
EPIC® H-B 24 SDR-BO	569
EPIC® H-B 24 SDRH-BO	570
EPIC® H-B 24 SDRH-LB	567
EPIC® H-B 24 SDR-LB	566
EPIC® H-B 24 SDRL-BO	569
EPIC® H-B 24 SDRLH-BO	570
EPIC® H-B 24 SDRLH-LB	567
EPIC® H-B 24 SDRL-LB	567
EPIC® H-B 24 SGR	568
EPIC® H-B 24 SGRH	568
EPIC® H-B 24 SGRH-LB	566
EPIC® H-B 24 SGRL	568
EPIC® H-B 24 SGR-LB	565
EPIC® H-B 24 SGRLH	569
EPIC® H-B 24 SGRLH-LB	566
EPIC® H-B 24 SGRL-LB	565
EPIC® H-B 24 TBF	571
EPIC® H-B 24 TBFH	572
EPIC® H-B 24 TBFH-LB	571
EPIC® H-B 24 TBF-LB	571
EPIC® H-B 24 TG	560
EPIC® H-B 24 TG 2X	560
EPIC® H-B 24 TGB	562
EPIC® H-B 24 TGBH	562
EPIC® H-B 24 TGH	561
EPIC® H-B 24 TGH 2X	561
EPIC® H-B 24 TGH-RO	559
EPIC® H-B 24 TG-RO	559
EPIC® H-B 24 TS	562
EPIC® H-B 24 TSB	563
EPIC® H-B 24 TSBH	563
EPIC® H-B 24 TSH	563
EPIC® H-B 24 TSH-RO	560
EPIC® H-B 24 TS-RO	559
EPIC® H-B 32 AG	574
EPIC® H-B 32 SGR	574
EPIC® H-B 32 SGRL	574
EPIC® H-B 32 TBFH	575

Product	Page
EPIC® H-B 32 TG	573
EPIC® H-B 32 TG 2X	573
EPIC® H-B 32 TS	573
EPIC® H-B 48 AD-LB	577
EPIC® H-B 48 AG-LB	577
EPIC® H-B 48 SDR-LB	578
EPIC® H-B 48 SDRL-LB	578
EPIC® H-B 48 SGR-LB	577
EPIC® H-B 48 SGRL-LB	578
EPIC® H-B 48 TG	576
EPIC® H-B 48 TS	576
EPIC® H-B 6 AD-LB	527
EPIC® H-B 6 AG-LB	527
EPIC® H-B 6 SDRH-LB	530
EPIC® H-B 6 SDR-LB	529
EPIC® H-B 6 SDRLH-LB	530
EPIC® H-B 6 SDRL-LB	529
EPIC® H-B 6 SGRH-LB	528
EPIC® H-B 6 SGR-LB	528
EPIC® H-B 6 SGRLH-LB	529
EPIC® H-B 6 SGRL-LB	528
EPIC® H-B 6 TBFH-LB	531
EPIC® H-B 6 TBF-LB	531
EPIC® H-B 6 TG	526
EPIC® H-B 6 TGH	526
EPIC® H-B 6 TS	526
EPIC® H-B 6 TSH	527
EPIC® H-BE 10 Cage clamp	466
EPIC® H-BE 10 Crimp termination	466
EPIC® H-BE 10 Kits	590
EPIC® H-BE 10 Screw termination	466
EPIC® H-BE 16 Cage clamp	467
EPIC® H-BE 16 Crimp termination	467
EPIC® H-BE 16 Kits	591
EPIC® H-BE 16 Screw termination	467
EPIC® H-BE 2.5 machined contacts	490
EPIC® H-BE 24 Cage clamp	468
EPIC® H-BE 24 Crimp termination	468
EPIC® H-BE 24 Kits	592
EPIC® H-BE 24 Screw termination	468
EPIC® H-BE 32 Cage clamp	469
EPIC® H-BE 32 Crimp termination	469
EPIC® H-BE 32 Screw termination	469
EPIC® H-BE 48 Cage clamp	470
EPIC® H-BE 48 Crimp termination	470
EPIC® H-BE 48 Screw termination	470
EPIC® H-BE 6 Cage clamp	465
EPIC® H-BE 6 Crimp termination	465
EPIC® H-BE 6 Kits	589
EPIC® H-BE 6 Screw termination	465
EPIC® H-BS 12	474
EPIC® H-BS 6	474
EPIC® H-BVE 10	475
EPIC® H-BVE 3	475
EPIC® H-BVE 6	475
EPIC® H-D 1.6 machined contacts	487
EPIC® H-D 1.6 stamped contacts	488
EPIC® H-D 1.6 stamped contacts-on-reel	489
EPIC® H-D 15 machined	458
EPIC® H-D 15 stamped	458
EPIC® H-D 25 machined	459
EPIC® H-D 25 stamped	459
EPIC® H-D 40 machined	460
EPIC® H-D 40 stamped	460
EPIC® H-D 64 machined	461
EPIC® H-D 64 stamped	461
EPIC® H-D 7 machined	457
EPIC® H-D 7 stamped	457
EPIC® H-D 8	456
EPIC® H-DD 108	463
EPIC® H-DD 144	464
EPIC® H-DD 216	464
EPIC® H-DD 24	462
EPIC® H-DD 42	462

Product	Page
EPIC® H-DD 72	463
EPIC® H-EE 10	471
EPIC® H-EE 18	471
EPIC® H-EE 32	472
EPIC® H-EE 46	472
EPIC® H-EE 64	473
EPIC® H-EE 92	473
EPIC® H-Q 17	593
EPIC® H-Q 4+2	593
EPIC® H-Q 5	456
EPIC® H-Q 8	593
EPIC® H-Q Accessories	496
EPIC® H-Q Accessories	596
EPIC® H-Q Cable Coupler Plastic	595
EPIC® H-Q Cable Glands	496
EPIC® H-Q Cable Glands	596
EPIC® H-Q Contacts	496
EPIC® H-Q Contacts	596
EPIC® H-Q Hood Metal	595
EPIC® H-Q Panel Base angled Plastic	594
EPIC® H-Q Panel Base Metal	595
EPIC® H-Q Panel Base Plastic	594
EPIC® H-Q Surface Mount Base Plastic	595
EPIC® Locking levers	582
EPIC® LS1.5 A1	623
EPIC® LS1.5 A3	623
EPIC® LS1.5 A6	624
EPIC® LS1.5 Contacts female	626
EPIC® LS1.5 Contacts male	626
EPIC® LS1.5 D6	624
EPIC® LS1.5 F6	625
EPIC® LS1.5 Tools	626
EPIC® LS1 A1 6 contacts	614
EPIC® LS1 A1 8 contacts	618
EPIC® LS1 A3 6 contacts	614
EPIC® LS1 A3 8 contacts	618
EPIC® LS1 A6 6 contacts	615
EPIC® LS1 A6 8 contacts	619
EPIC® LS1 Accessories	622
EPIC® LS1 Contacts female	622
EPIC® LS1 Contacts male	622
EPIC® LS1 D6 6 contacts	616
EPIC® LS1 D6 6 contacts (short)	616
EPIC® LS1 D6 8 contacts	620
EPIC® LS1 D6 8 contacts (short)	620
EPIC® LS1 F6 6 contacts	617
EPIC® LS1 F6 8 contacts	621
EPIC® LS1 F7 6 contacts	617
EPIC® LS1 F7 8 contacts	621
EPIC® LS1 G5 6 contacts	615
EPIC® LS1 G5 8 contacts	619
EPIC® LS1 Kits 6pole	630
EPIC® LS1 Kits 8pole	631
EPIC® LS1 Tools	622
EPIC® LS3 A1	627
EPIC® LS3 Contacts female	629
EPIC® LS3 Contacts male	629
EPIC® LS3 D6	627
EPIC® LS3 F6	628
EPIC® LS3 Tools	629
EPIC® M23 A1	597
EPIC® M23 A1 D3,2	597
EPIC® M23 A3	597
EPIC® M23 Accessories	608
EPIC® M23 B1	600
EPIC® M23 B2	600
EPIC® M23 C2	601
EPIC® M23 Contacts female	608
EPIC® M23 Contacts male	608
EPIC® M23 D6	598
EPIC® M23 F6	598
EPIC® M23 F7	598
EPIC® M23 G4	599
EPIC® M23 G5	599

Product	Page
EPIC® M23 G6	599
EPIC® M23 Inserts 12 pole	606
EPIC® M23 Inserts 12 pole D-Sub	602
EPIC® M23 Inserts 12 pole PCB-soldering	603
EPIC® M23 Inserts 16 pole	606
EPIC® M23 Inserts 17 pole	607
EPIC® M23 Inserts 17 pole D-Sub	602
EPIC® M23 Inserts 17 pole PCB-soldering	603
EPIC® M23 Inserts 6 pole	604
EPIC® M23 Inserts 7 pole	604
EPIC® M23 Inserts 8+1 pole	605
EPIC® M23 Inserts 9 pole	605
EPIC® M23 Kits 12pole	609
EPIC® M23 Kits 17pol.	610
EPIC® M23 O1	600
EPIC® M23 Tools	608
EPIC® MC 2.5 machined contacts	491
EPIC® MC 2.5 stamped contacts	492
EPIC® MC 2.5 stamped contacts-on-reel	493
EPIC® MC 3.6 machined contacts	494
EPIC® MC Coax-Contacts	495
EPIC® MC Dummy Module	480
EPIC® MC Module: 10pole	479
EPIC® MC Module: 10pole stamped	480
EPIC® MC Module: 20pole	480
EPIC® MC Module: 3pole	478
EPIC® MC Module: 5pole	479
EPIC® MC Module: Cage clamp 4pole	479
EPIC® MC Module: HE 4pole	478
EPIC® MC Module: High Current 1+PE	477
EPIC® MC Module: High Current 2pole	477
EPIC® MC Module: High Voltage 3pole	477
EPIC® MC Module: High Voltage 4+PE	478
EPIC® MC Module: Koax 3pole	481
EPIC® MC Module: PROFIBUS DP	481
EPIC® MC Module: RJ45	482
EPIC® MC Module: Universal Bus	481
EPIC® MC Module Pneumatic 1pole	484
EPIC® MC Module Pneumatic 2pole	484
EPIC® MC Module removal tool	484
EPIC® MCR 10	485
EPIC® MCR 16	485
EPIC® MCR 24	485
EPIC® MCR 6	485
EPIC® M-D 1.0 D-Sub stamped contacts-on-reel	486
EPIC® POWERLOCK A1 C	632
EPIC® POWERLOCK A1 S	636
EPIC® POWERLOCK A6 C	632
EPIC® POWERLOCK A6 S	636
EPIC® POWERLOCK Accessories	635
EPIC® POWERLOCK Accessories	639
EPIC® POWERLOCK BOX C	634
EPIC® POWERLOCK BOX S	638
EPIC® POWERLOCK Crimp contacts	635
EPIC® POWERLOCK D6 C	633
EPIC® POWERLOCK D6 S	637
EPIC® POWERLOCK F6 C	633
EPIC® POWERLOCK F6 S	637
EPIC® POWERLOCK Screw Contacts	639
EPIC® POWERLOCK Tools	635
EPIC® POWERLOCK Tools	639
EPIC® Protective cover H-A	581
EPIC® Protective cover H-A 3	581
EPIC® Protective cover H-B	581
EPIC® Q Hood Plastic	594
EPIC® QUICK & EASY Accessories	579
EPIC® QUICK & EASY Mounting system	579
EPIC® SOLAR 4 THIN F pre-assembled	640
EPIC® SOLAR 4 Thin M pre-assembled	640
EPIC® SOLAR Module Box	641
EPIC® SOLAR Module Box with cables	641
EPIC® STA 14 Screw termination	454
EPIC® STA 14 Solder termination	454
EPIC® STA 20 Screw termination	455

Product	Page
EPIC® STA 20 Solder termination	455
EPIC® STA 6 Screw termination	453
EPIC® STA 6 Solder termination	453
EPIC® TB-H-BE 16	476
EPIC® TB-H-BE 24	476
EPIC® Tools for contacts H-BE 2.5 machined	490
EPIC® Tools for contacts H-D 1.6 machined	487
EPIC® Tools for contacts H-D 1.6 stamped	488
EPIC® Tools for contacts MC 2.5 machined	491
EPIC® Tools for contacts MC 2.5 stamped	492
EPIC® Tools for contacts MC 3.6 machined	494
EPIC® Tools for contacts MC Coax	495
EPIC® Tools for contacts-on-reel H-D 1.6 stamped	489
EPIC® Tools for contacts-on-reel MC 2.5 stamped	493
EPIC® Tools for M-D 1,0 D-Sub contacts-on-reel stamped	486
EPIC® ULTRA H-B 10 AG QB	523
EPIC® ULTRA H-B 10 TS QB	523
EPIC® ULTRA H-B 16 AG QB	524
EPIC® ULTRA H-B 16 TS QB	524
EPIC® ULTRA H-B 24 AG QB	525
EPIC® ULTRA H-B 24 TS QB	525
EPIC® ULTRA H-B 6 AG LB	522
EPIC® ULTRA H-B 6 SGR LB	522
EPIC® ULTRA H-B 6 TG LB	521
EPIC® ULTRA H-B 6 TS LB	521
EPIC® ZYLIN R 3.0 A	611
EPIC® ZYLIN R 3.0 Accessories	613
EPIC® ZYLIN R 3.0 B1	612
EPIC® ZYLIN R 3.0 B2	612
EPIC® ZYLIN R 3.0 D PG16	611
EPIC® ZYLIN R 3.0 F PG16	611
EPIC® ZYLIN R 3.0 G1	612
EPIC® ZYLIN R 3.0 Tools	613
ERG 740 manual pressing tool	939
ESUY Copper Earthing Cable	136
ETB Marking labels	884
ETHERLINE® Cat.5 ARM	406
ETHERLINE® Cat.5e	404
ETHERLINE® Cat.5e FD	405
ETHERLINE® Cat.5e FLEX	404
ETHERLINE® Cat.5 FD BK	405
ETHERLINE® Cat.5 FRNC HYBRID	406
ETHERLINE® Cat.6A + Cat.7	409
ETHERLINE® CAT.6 FD	409
ETHERLINE® PN Cat.5	407
ETHERLINE® PN Cat.5 FD	407
ETHERLINE® PN FLEX	407
ETHERLINE® TORSION Cat. 5	408
ETHERLINE® Y Cat.5e BK 2x2AWG22/7	408
Extension- and compensating cables, multi-paired	159
Extension- and compensating cables, paired	157
F	
FC Strip stripping tool	908
Field mountable S/A connectors M12	377
Field mountable S/A connectors M8	378
Field mountable valve connectors	368
Field-Terminable Connector RJ45 CAT.5e FM45	418
Fitting nut for flush-type connectors	382
FKK 07 cable wedge clamp, large	973
FKK 08 Flat cable wedge clamp, small	973
FKLS Marking labels	883
FLEXIMARK® Accessories Transfer Printer A4+M/300	886
FLEXIMARK® Character holders MINI	866
FLEXIMARK® Character holders PGS - MINI	868
FLEXIMARK® Character holders PTEF/ CAB	867
FLEXIMARK® Collar halogenfree	857
FLEXIMARK® Collar Snap-on	856
FLEXIMARK® Collar with cable tie	858
FLEXIMARK® Engraved markers BMK-FCC - component markers	876
FLEXIMARK® FL 52A special hole pliers	868
FLEXIMARK® FL52 - ERA special hole pliers	868
FLEXIMARK® Flexilabel LFL	858

Product	Page
FLEXIMARK® FLEXILABEL TFL Cable marking	887
FLEXIMARK® Flexipart FCC	855
FLEXIMARK® Flexipart single wire marking	854
FLEXIMARK® FLEXIPRINT LF Single core marking	879
FLEXIMARK® FLG End plug	867
FLEXIMARK® FLKA Lock button	867
FLEXIMARK® Heat shrinkable tubing	887
FLEXIMARK® LA Labels	881
FLEXIMARK® LA Labels	882
FLEXIMARK® LB Labels	881
FLEXIMARK® LD Steel cable tie	873
FLEXIMARK® LFL Cable label	879
FLEXIMARK® Marking Kit MINI	866
FLEXIMARK® MINI/MAXI FCC Cable marking	870
FLEXIMARK® NM Stainless steel - character holders	872
FLEXIMARK® SHRINK MARK FCC-FK Shrink tube marking	871
FLEXIMARK® Sleeve FS	855
FLEXIMARK® Software 10.0	877
FLEXIMARK® Stainless steel FCC	875
FLEXIMARK® Stainless steel kit	872
FLEXIMARK® TA Labels Cable marking	888
FLEXIMARK® TCK Labels Cable marking	889
FLEXIMARK® Thermoprint A4+M/300	885
FLEXIMARK® ULTRA L 12X8,5	878
FLEXIMARK® Wrapping labels LCK	880
FLEXIMARK® ZT Stainless steel - character holders	873
FLEXIPRINT TF Single core marking	886
Flush-Mounted Outlet LSA+	426
G	
Ground Straps / Flat Ground Straps	242
GYS shrink tube	947
H	
H01N2-D	82
H05RN-F	79
H05RR-F	78
H05V-K	196
H05V-K in big one-way cardboard box	201
H05Z-K 90°C	208
H07RN8-F	86
H07RN-F	80
H07V-K	198
H07V-K in big one-way cardboard box	202
H07Z-K 90°C	209
H07ZZ-F	81
HG 2310 LCD hot-air pistol	948
HITRONIC® BUS PCF DUPLEX indoor + outdoor	432
HITRONIC® HQN Outdoor Cable	433
HITRONIC® HQW Armoured Outdoor Cable	435
HITRONIC® HRH Breakout Cable	436
HITRONIC® HVN Outdoor Cable	434
HITRONIC® POF DUPLEX PE	430
HITRONIC® POF DUPLEX PE-PUR	431
HITRONIC® POF SIMPLEX PE	429
HITRONIC® POF SIMPLEX PE-PUR	429
HOTY heat-shrink tube	945
I	
Insulated cable lugs	919
Insulating tube ISS	943
Insulating tube ISY	943
ISO-sleeve	922
J	
J-2Y(ST)Y ...ST III BD	296
JE-LiYCY ...BD	293
JE-Y(ST)Y ...BD	292
J-H(ST)H ...BD	297
J-H(ST)H ...BD Fire Alarm Cable	298
J-Y(ST)Y ...LG Fire Alarm Cable	295
J-Y(ST)Y ...LG Indoor Cable	294
K	
K29 crimping pliers	917

Product	Page
KEB 1025 crimping pliers	916
KEB 3550 crimping pliers	916
KEBS 0560 TWIN crimping pliers	917
Keystone Clips for EVO SnapIn Connectors	425
Keystone Clips for SnapIn Connectors	425
KKSB Marking labels	883
KMK Marking labels	884
Kraftform® adjustable torque screwdriver / Kraftform Kompakt® Set	976
KRB 0560 crimping pliers	925
KS 15 cable shears	903
KS 20 cable shears	904
KS cable clamps	968
KT 11 cable shears	903
KWB 4099 crimping pliers	926
KW plastic coil	951
L	
LANmark-5 EVO SnapIn Connector	421
LANmark-5 EVO SnapIn Connector AWG26	421
LANmark-6 EVO SnapIn Connector	421
LANmark-6 EVO SnapIn Connector 10G	422
LANmark-6 EVO SnapIn Connector AWG26	421
LANmark-6 RJ45 Patchcord	417
LANmark-7 GG45 Patchcord	417
LANmark-7 GG45 SnapIn Connector	422
Li2YCY	212
Li5YC5Y	213
LiFY	135
LiFY MEASURING	135
LiY	195
LiYCY	212
LiY with twin colour helix insulation	195
LS steel cable ties	961
LWL-Kupplungen	440
M	
M1011 Manual embossing machine	896
M12 socket with connected master cable	375
M12 T distributor for PROFIBUS	397
M16 socket with connected master cable	374
Mille-Tie™ cable ties	961
Mini Wall mounted Rack	440
Mobile crimp tool - crimping inserts	931
Mobile crimp tool crimping pliers	931
MP 11/13/12/14 installation sheets	974
MP 18/28 installation sheets	974
MP 21/22 installation sheets	974
MPNY screw / adhesive socket	966
MS Marker pens	891
Multi coaxial cables RG 59 B/U	402
MULTICRIMP 6 crimping pliers	915
Multipurpose shears A and B	902
Multi-Standard SC 1	203
Multi-Standard SC 2.1	204
Multi-Standard SC 2.2	206
N	
NAYY-J	221
(N)HXMH	216
NSGAFöu 1.8/3 kV	84
NSHXAFö 1.8/3 kV	85
NSSHÖU	83
NW nylon coil	951
NYCWY	220
NYCY	219
NYM-J	215
NYY-J, NYY-O	217
Ö	
ÖLFLEX® 120 CH	56
ÖLFLEX® 120 H	55
ÖLFLEX® 140	41
ÖLFLEX® 140 CY	42
ÖLFLEX® 150 CY QUATTRO	44

ÖLFLEX® 150 QUATTRO to ÖLFLEX® TORSION D FRNC

Product	Page
ÖLFLEX® 150 QUATTRO	43
ÖLFLEX® 191	45
ÖLFLEX® 191 CY	46
ÖLFLEX® 440 CP	69
ÖLFLEX® 440 P	68
ÖLFLEX® 450 P	73
ÖLFLEX® 491 P	70
ÖLFLEX® 500 P	74
ÖLFLEX® 540 CP	76
ÖLFLEX® 540 P	75
ÖLFLEX® 550 P	77
ÖLFLEX® CHAIN 808 CP	112
ÖLFLEX® CHAIN 808 P	111
ÖLFLEX® CHAIN 809	123
ÖLFLEX® CHAIN 809 CY	124
ÖLFLEX® CHAIN 815 CP	115
ÖLFLEX® CHAIN 815 CY	110
ÖLFLEX® CHAIN 879	127
ÖLFLEX® CHAIN 879 CY	128
ÖLFLEX® CLASSIC 100	22
ÖLFLEX® CLASSIC 100 BK POWER 0,6/1kV	27
ÖLFLEX® CLASSIC 100 CY	25
ÖLFLEX® CLASSIC 100 H	52
ÖLFLEX® CLASSIC 100 SY	26
ÖLFLEX® CLASSIC 100 YELLOW	24
ÖLFLEX® CLASSIC 110	29
ÖLFLEX® CLASSIC 110 BLACK 0,6/1kV	35
ÖLFLEX® CLASSIC 110 CH	54
ÖLFLEX® CLASSIC 110 COLD	31
ÖLFLEX® CLASSIC 110 CY	33
ÖLFLEX® CLASSIC 110 CY BLACK 0,6/1 kV	36
ÖLFLEX® CLASSIC 110 H	53
ÖLFLEX® CLASSIC 110 ORANGE	32
ÖLFLEX® CLASSIC 110 SY	34
ÖLFLEX® CLASSIC 115 CY	38
ÖLFLEX® CLASSIC 130 H	57
ÖLFLEX® CLASSIC 130 H BK 0,6/1kV	59
ÖLFLEX® CLASSIC 135 CH	58
ÖLFLEX® CLASSIC 135 CH BK 0,6/1kV	60
ÖLFLEX® CLASSIC 400 CP	66
ÖLFLEX® CLASSIC 400 P	65
ÖLFLEX® CLASSIC 415 CP	67
ÖLFLEX® CONTROL M	71
ÖLFLEX® CONTROL TM	47
ÖLFLEX® CONTROL TM CY	48
ÖLFLEX® CRANE	164
ÖLFLEX® CRANE 2S	165
ÖLFLEX® CRANE CF	170
ÖLFLEX® CRANE F	169
ÖLFLEX® CRANE NSHTÖU	161
ÖLFLEX® CRANE PUR	163
ÖLFLEX® CRANE VS (N)SHTÖU	162
ÖLFLEX® EB	39
ÖLFLEX® EB CY	40
ÖLFLEX® FD 855 CP	117
ÖLFLEX® FD 855 P	116
ÖLFLEX® FD 891	125
ÖLFLEX® FD 891 CP	130
ÖLFLEX® FD 891 CY	126
ÖLFLEX® FD 891 P	129
ÖLFLEX® FD 90	121
ÖLFLEX® FD 90 CY	122
ÖLFLEX® FD CLASSIC 810	108
ÖLFLEX® FD CLASSIC 810 CP	114
ÖLFLEX® FD CLASSIC 810 CY	109
ÖLFLEX® FD CLASSIC 810 P	113
ÖLFLEX® FD ROBUST	119
ÖLFLEX® FD ROBUST C	120
ÖLFLEX® FORTIS	72
ÖLFLEX® HEAT 105 MC	172
ÖLFLEX® HEAT 145 C MC	174
ÖLFLEX® HEAT 145 MC	173
ÖLFLEX® HEAT 145 SC	187
ÖLFLEX® HEAT 1565 MC	186

Product	Page
ÖLFLEX® HEAT 1565 SC	194
ÖLFLEX® HEAT 180 C MS	178
ÖLFLEX® HEAT 180 EWKF	179
ÖLFLEX® HEAT 180 EWKF C	180
ÖLFLEX® HEAT 180 FZLSi	190
ÖLFLEX® HEAT 180 GLS	181
ÖLFLEX® HEAT 180 H05SS-F EWKF	176
ÖLFLEX® HEAT 180 MS	177
ÖLFLEX® HEAT 180 SiD	189
ÖLFLEX® HEAT 180 SiF	188
ÖLFLEX® HEAT 180 SiF/GL	190
ÖLFLEX® HEAT 180 SiHF	175
ÖLFLEX® HEAT 180 SiZ	190
ÖLFLEX® HEAT 205 MC	182
ÖLFLEX® HEAT 205 PTFE/FEP	182
ÖLFLEX® HEAT 205 SC	191
ÖLFLEX® HEAT 260 C MC	183
ÖLFLEX® HEAT 260 GLS	184
ÖLFLEX® HEAT 260 MC	183
ÖLFLEX® HEAT 260 SC	192
ÖLFLEX® HEAT 350 MC	185
ÖLFLEX® HEAT 350 SC	193
ÖLFLEX® LIFT	166
ÖLFLEX® LIFT F	171
ÖLFLEX® LIFT S	168
ÖLFLEX® LIFT T	167
ÖLFLEX® PETRO C HFFR	61
ÖLFLEX® PETRO FD 865 CP	118
ÖLFLEX® PLUG 540 P Connection Cable	238
ÖLFLEX® PLUG CEE Connection/ Extension Cable without phase shifter	240
ÖLFLEX® PLUG CEE Connection/ Extension Cable with phase shifter	241
ÖLFLEX® PLUG Extension Cable 540 P safety yellow	239
ÖLFLEX® PLUG Extension Cable H07RN-F	239
ÖLFLEX® PLUG H03VV-F Net Connection Cable	236
ÖLFLEX® PLUG H05VV-F Net Connection Cable	237
ÖLFLEX® ROBOT 900 DP	132
ÖLFLEX® ROBOT 900 P	131
ÖLFLEX® ROBOT F1	133
ÖLFLEX® ROBOT F1 (C)	134
ÖLFLEX® ROBUST 200	62
ÖLFLEX® ROBUST 210	63
ÖLFLEX® ROBUST 215 C	64
ÖLFLEX® SERVO 2YSLCY-JB	90
ÖLFLEX® SERVO 700	87
ÖLFLEX® SERVO 700 CY	88
ÖLFLEX® SERVO 709 CY	91
ÖLFLEX® SERVO 720 CY	89
ÖLFLEX® SERVO 9YSLCY-JB	92
ÖLFLEX® SERVO FD 750 P	95
ÖLFLEX® SERVO FD 755 P	96
ÖLFLEX® SERVO FD 760 CP	97
ÖLFLEX® SERVO FD 770 CP	98
ÖLFLEX® SERVO FD 770 CP DESINA®	99
ÖLFLEX® SERVO FD 781 CY	100
ÖLFLEX® SERVO FD 785 P	101
ÖLFLEX® SERVO FD 795 P	102
ÖLFLEX® SERVO FD 796 CP	103
ÖLFLEX® SF	51
ÖLFLEX® SOLAR V4A	153
ÖLFLEX® SOLAR XLR	146
ÖLFLEX® SOLAR XLR 4703	149
ÖLFLEX® SOLAR XLR-R	145
ÖLFLEX® SOLAR XLR TF	147
ÖLFLEX® SOLAR XLS-R	148
ÖLFLEX® SOLAR XLS-R T	152
ÖLFLEX® SOLAR XLSv	150
ÖLFLEX® SPIRAL 400 P	230
ÖLFLEX® SPIRAL 540 P	233
ÖLFLEX® SPIRAL 540 P with angular, isolated ground plug	234
ÖLFLEX® STATIC CY black	214
ÖLFLEX® TORSION	154
ÖLFLEX® TORSION D FRNC	155

Product	Page
ÖLFLEX® TORSION FRNC	155
ÖLFLEX® TRAFFIC 3GKW	140
ÖLFLEX® TRAFFIC 3GKW C-flex	142
ÖLFLEX® TRAFFIC 3GKW flex	141
ÖLFLEX® TRAFFIC 4GKW-AXplus	143
ÖLFLEX® TRAFFIC 4GKW-AXplus C-flex	144
ÖLFLEX® TRAFO XLv 1.8/3 kV	151
ÖLFLEX® TRAY II	49
ÖLFLEX® TRAY II CY	50
ÖLFLEX® TRUCK 170 FLRY	137
ÖLFLEX® TRUCK 170 TWIN	139
ÖLFLEX® TRUCK 470 P FLRY11Y	138
ÖLFLEX® TRUCK REFLEX FLRY11Y	139
ÖLFLEX® TRUCK SPIRAL 15-pole	228
ÖLFLEX® TRUCK SPIRAL 7-pole	228
ÖLFLEX® TRUCK SPIRAL ABS	227
ÖLFLEX® TRUCK SPIRAL EBS	227
O	
Outlet Snap-In front module	424
P	
PAD Mounting rod	864
Panel connectors insulated	921
Panel connectors non-insulated	922
Panel connector sockets Type M / Type F	923
Panel connectors with latch	923
Patchcable RJ45 CAT.5e	416
Patchcable RJ45 CAT.6 S-STP	416
Patchpanel Modular extendable	423
Patchpanel Modular fix mounting	423
Patchpanel Modular Mini Surface-Mounted	423
Patchpanel Modular rail mounting	423
PAV Mounting tool	864
PCG Mounting tools	861
PEW 12 universal tool	932
PEW 8.84 crimping pliers	915
PEW 8.87 crimping pliers	916
PF Labels	865
PKG shrink tube	948
PLG - HSB box shrink tube	946
Power cable: M12 connector on free conductor	399
Power cable: straight M12 connector on straight M12 socket	400
Pre-wired front plug for PLC SIMATIC® S7-300	243
Pre-wired front plug for PLC SIMATIC® S7-400	244
PROFIBUS Cable: M12 connector M12 on M12 socket	392
PROFIBUS cable: M12 connector on free conductor end	391
PROFIBUS Modules	385
PT Marking sleeves	865
PTS 4 stripping and cutting tool	905
Punch down tool LSA+	426
Q	
QUADRO multifunction tool	915
Quick ties KBS/ KB	960
R	
RD-Y(ST)Y	291
RE-2Y(ST)Yv	289
RE-2Y(ST)Yv PiMF	290
RKK 01-06 round cable wedge clamps	973
RSK earth clamp	939
RSK gauge	938
RSK one-piece screen connector	938
S	
S/A box, M8 slots and master cable connection M16/M12	370
S/A box with M12 slots and master cable	371
S/A box with M12 slots and master cable connection	372
S/A box with M8 slots and master cable	369
S/A cable: 3-pos., valve connector on free conductor end	364
S/A cable: 3-pos., valve connector on straight M12 plug	365
S/A cable: 5-pos., valve connector on free conductor end, for pressure switch	366

Product	Page
S/A cable: 5-pos., valve connector on straight M12 plug, for pressure switch	367
S/A cable: M12 connector/socket on free conductor end	356
S/A cable: M12 connector on free conductor end	338
S/A cable: M12 connector on free conductor end	346
S/A cable: M12 connector on free conductor end	353
S/A cable: M12 connector on M12 socket	340
S/A cable: M12 connector on M12 socket	348
S/A cable: M12 connector on M12 socket	355
S/A cable: M12 connector on M12 socket	357
S/A cable: M12 connector on M8 socket	341
S/A cable: M12 connector on M8 socket	349
S/A cable: M12 socket on free conductor end	339
S/A cable: M12 socket on free conductor end	347
S/A cable: M12 socket on free conductor end	354
S/A cable: M8 connector on free conductor end	342
S/A cable: M8 connector on free conductor end	350
S/A cable: M8 connector on M12 socket	345
S/A cable: M8 connector on M8 socket	344
S/A cable: M8 connector on M8 socket	352
S/A cable: M8 socket on free conductor end	343
S/A cable: M8 socket on free conductor end	351
S/A cable: shielded, M12 connector on free conductor end	358
S/A cable: shielded, M12 socket on free conductor end	359
S/A cable: straight M12 Y plug on 2x free conductor end	360
S/A cable: straight M12 Y plug on 2x M12 socket	361
S/A cable: straight M12 Y plug on 2x M8 socket	362
S/A DeviceNet/CANopen cable, M12 connector on M12 socket	394
S/A M12 flush-type connectors with M16 fastening thread	380
S/A M12 flush-type connectors with PG9 fastening thread	381
S/A M8 flush-type connectors	382
S/A T-conductor M12 as parallel distributor	398
S07V-K numbered	200
Screw plug for unoccupied sockets	376
SERVO cables in acc. to INDRAMAT® Standard INK	105
SERVO cables in acc. to LENZE® Standard	106
SERVO Cables in acc. to SEW® Standard	94
SERVO cables in acc. to SIEMENS® Standard 6FX 5008-	93
SERVO cables in acc. to SIEMENS® Standard 6FX 8PLUS	104
Servo harnessing according to INDRAMAT® IKG / RKL	224
Servo harnessing according to INDRAMAT® IKS / RKG	224
Servo harnessing according to LENZE®	225
Servo harnessing according to SEW®	226
Servo harnessing according to SIEMENS® 6FX5002-	222
Servo harnessing according to SIEMENS® 6FX 8002-	223
S-FTP Patchcable Crossover RJ45 CAT.5e	417
SHIELD-KON® crimping inserts	941
SHIELD-KON® two-part screen connector	940
SHRINK-KON® set refill packs	950
SHRINK-KON® shrink tube set	950
Silicon sealing compound	976
SILVYN® AFW-PA	807
SILVYN® AMG	830
SILVYN® AMG-M	829
SILVYN® AMHW-M	829
SILVYN® AMW-M	829
SILVYN® ANAC-WZ	840
SILVYN® AS	812
SILVYN® AS-P	815
SILVYN® BMC-M	840
SILVYN® BRAID PA6	758
SILVYN® BW-K-M	841
SILVYN® BW-M	841
SILVYN® CC01	840
SILVYN® CNP	824
SILVYN® CNP conduit gland	824
SILVYN® DUO-M	796
SILVYN® EDU-AS	813
SILVYN® EE-K	781
SILVYN® EF	827
SILVYN® EL	769
SILVYN® ELÖ	770
SILVYN® ELT	771

Product	Page
SILVYN® EMC AS-CU	814
SILVYN® FCL	804
SILVYN® FDG/FDHW/FDW	831
SILVYN® FD-PU	775
SILVYN® FG	832
SILVYN® FG AMG-M	833
SILVYN® FLEXILOK 90° M	802
SILVYN® FLEXILOK 90° PG	802
SILVYN® FLEXILOK M	801
SILVYN® FLEXILOK PG	801
SILVYN® FPAC	805
SILVYN® FPAG	803
SILVYN® FPAG 90° M	800
SILVYN® FPAG 90° PG	803
SILVYN® FPAG-M	798
SILVYN® FPAS	797
SILVYN® FPAX-M	799
SILVYN® FPS	774
SILVYN® gasket AFG-PA	807
SILVYN® HCC	794
SILVYN® HCX	828
SILVYN® HFX	828
SILVYN® HG-M	795
SILVYN® HIPROJACKET	825
SILVYN® HIPROJACKET CR	825
SILVYN® HIPROSILTAPE	825
SILVYN® HTDL	826
SILVYN® HW-M	795
SILVYN® K-EM	793
SILVYN® KLICK 90° M	785
SILVYN® KLICK 90° PG	790
SILVYN® KLICK-D	792
SILVYN® KLICK-GM	784
SILVYN® KLICK-GP	788
SILVYN® KLICK-GPZ	789
SILVYN® KLICK GPZ-M	786
SILVYN® KLICK-RH	793
SILVYN® KLICK-S	792
SILVYN® KLICK-V	792
SILVYN® KLICK-Y	791
SILVYN® KLICK-Y (TPE)	791
SILVYN® KSE	787
SILVYN® KSE-M	805
SILVYN® LCC-2	834
SILVYN® LCCH-2	835
SILVYN® LCG-M	837
SILVYN® LCW-M	837
SILVYN® LGEF-M	821
SILVYN® LGES-M	821
SILVYN® LGF-2-M	836
SILVYN® LGS-2	836
SILVYN® LGS-2-M	836
SILVYN® LKI	780
SILVYN® LKI-M	780
SILVYN® LTP	838
SILVYN® LTPG-M	839
SILVYN® LTPS-M	839
SILVYN® LTPW-M	839
SILVYN® MAXI PA	806
SILVYN® MPC	772
SILVYN® MPC 90°	773
SILVYN® MPC 90° M	773
SILVYN® MPC-M	772
SILVYN® MSK-M EE	776
SILVYN® MSK-M US	816
SILVYN® OR	827
SILVYN® RILL PA 12	783
SILVYN® RILL PA 6	782
SILVYN® RILL PA6 SINUS	811
SILVYN® RKS	842
SILVYN® SCH	768
SILVYN® SCLX	796
SILVYN® SHRINK BRAID PET	758
SILVYN® SI	759

Product	Page
SILVYN® SNAP PET	758
SILVYN® SP	760
SILVYN® SPLIT	808
SILVYN® SPLIT COS	809
SILVYN® SPLIT GMP-M	810
SILVYN® SPLIT GMP-M / SILVYN® SPLIT COV	809
SILVYN® SP-PU	761
SILVYN® SSUE	820
SILVYN® SSV	766
SILVYN® SSV-M	762
SILVYN® SSVZ	767
SILVYN® SSVZ-M	763
SILVYN® TB-E	833
SILVYN® UI 511	822
SILVYN® UI 511 -EG	823
SILVYN® UI 511 -G	823
SILVYN® US	778
SILVYN® US	818
SILVYN® US-AS	819
SILVYN® US-EDU-AS	819
SILVYN® USK	765
SILVYN® USK-M	764
SILVYN® USK-M	779
SILVYN® US-M	777
SILVYN® US-M	817
SILVYN® US-MS-DR	819
Simplex Pigtail	438
SKINDICHT® A-PG/M	747
SKINDICHT® BL	743
SKINDICHT® BLK / BLK-GL	742
SKINDICHT® BLK-GL-M	695
SKINDICHT® BLK-M	695
SKINDICHT® BL-M	697
SKINDICHT® BL-M ATEX	698
SKINDICHT® BL-M hexagonal	698
SKINDICHT® CN	737
SKINDICHT® CN-M	690
SKINDICHT® D-M	706
SKINDICHT® DTN	709
SKINDICHT® E	750
SKINDICHT® EH	752
SKINDICHT® EJU	746
SKINDICHT® EJU-M	701
SKINDICHT® E-M	707
SKINDICHT® EV	751
SKINDICHT® FL	726
SKINDICHT® GMK	740
SKINDICHT® JT PTFE metric	708
SKINDICHT® JT PTFE PG	752
SKINDICHT® KU, KUS, KUK	744
SKINDICHT® KU-M	699
SKINDICHT® KW-M	691
SKINDICHT® LA	709
SKINDICHT® MA-M/NPT	703
SKINDICHT® MA-M/PG	703
SKINDICHT® MA-PG/M	748
SKINDICHT® ME	746
SKINDICHT® ME-M	701
SKINDICHT® ME-M ATEX	702
SKINDICHT® MINI	689
SKINDICHT® MR	745
SKINDICHT® MR-M	699
SKINDICHT® MR-M ATEX	700
SKINDICHT® MR-M hexagonal	700
SKINDICHT® O-Ring Perbunan® metric	707
SKINDICHT® O-Ring Perbunan® PG	751
SKINDICHT® O-Ring VITON® metric	708
SKINDICHT® O-Ring VITON® PG	751
SKINDICHT® RWV	738
SKINDICHT® RWV-M	691
SKINDICHT® RWV-M without E+D	692
SKINDICHT® SE	739
SKINDICHT® SE-M	692
SKINDICHT® SE-M 220/320	693

Product	Page
SKINDICHT® SE-M without E+D	693
SKINDICHT® SH	727
SKINDICHT® SHV	735
SKINDICHT® SHV cone seal	753
SKINDICHT® SHVE	733
SKINDICHT® SHVE-M	686
SKINDICHT® SHV-M	688
SKINDICHT® SHV-M-VITON®	689
SKINDICHT® SHV VITON®	736
SKINDICHT® SHZ	728
SKINDICHT® SHZ-M	683
SKINDICHT® SK	729
SKINDICHT® SKZ	730
SKINDICHT® SKZ-M	682
SKINDICHT® SM	741
SKINDICHT® SM-M	694
SKINDICHT® SM-PE	741
SKINDICHT® SM-PE-M	694
SKINDICHT® SNR	754
SKINDICHT® SR	731
SKINDICHT® SRE	734
SKINDICHT® SRE-M	687
SKINDICHT® SR-M	684
SKINDICHT® SR-SV	732
SKINDICHT® SR-SV-M	685
SKINDICHT® STK	750
SKINDICHT® SVF	725
SKINDICHT® SVFK	724
SKINDICHT® SVFK-M	680
SKINDICHT® SVF-M	681
SKINDICHT® SVRE	723
SKINDICHT® SVRE-M	678
SKINDICHT® SVRN	723
SKINDICHT® SVRN-M	678
SKINDICHT® SVRX	679
SKINDICHT® U-M/U-PG	706
SKINDICHT® WN-M	709
SKINDICHT® ZS/ZS-XL	749
SKINDICHT® ZSE-M	705
SKINDICHT® ZS-M	704
SKINMATIC® GB-M	711
SKINMATIC® KB-M	711
SKINMATIC® MH Set	710
SKINMATIC® QUICK Set 1	710
SKINMATIC® RZ	711
SKINMATIC® SB-M	711
SKINTOP® BS	716
SKINTOP® BS-M	657
SKINTOP® BT	716
SKINTOP® BT-M	659
SKINTOP® CLICK	654
SKINTOP® CLICK BLK	696
SKINTOP® CLICK BS	658
SKINTOP® CLICK-R	654
SKINTOP® COLD	664
SKINTOP® COLD-R	664
SKINTOP® CUBE	676
SKINTOP® DIX	721
SKINTOP® DIX-AUTOMATION	721
SKINTOP® DIX-DV	675
SKINTOP® DIX-DV	722
SKINTOP® DIX-M	672
SKINTOP® DIX-M AUTOMATION	673
SKINTOP® DV	722
SKINTOP® DV-M	675
SKINTOP® GMP-GL	720
SKINTOP® GMP-GL-M	670
SKINTOP® GMP-HF-M	671
SKINTOP® K-M ATEX plus	660
SKINTOP® K-M ATEX plus blue	661
SKINTOP® KR-M ATEX plus	660
SKINTOP® KR-M ATEX plus blue	661
SKINTOP® MS	717
SKINTOP® MS-IS-M	665

Product	Page
SKINTOP® MS-M	662
SKINTOP® MS-M ATEX	666
SKINTOP® MS-M ATEX BRUSH	667
SKINTOP® MS-M BRUSH	669
SKINTOP® MS-M-XL	663
SKINTOP® MS NPT	713
SKINTOP® MS-NPT BRUSH	714
SKINTOP® MSR	717
SKINTOP® MSR-M	662
SKINTOP® MSR-M ATEX	666
SKINTOP® MSR-M-XL	663
SKINTOP® MSR-XL	718
SKINTOP® MS-SC	719
SKINTOP® MS-SC-M	668
SKINTOP® MS-SC NPT	714
SKINTOP® MS-XL	718
SKINTOP® NPT	712
SKINTOP® SD	722
SKINTOP® SD-M	675
SKINTOP® SDV-M ATEX	674
SKINTOP® SDVR-M ATEX	674
SKINTOP® SOLAR	655
SKINTOP® SOLAR plus	655
SKINTOP® ST	715
SKINTOP® ST-HF-M	656
SKINTOP® ST-M	652
SKINTOP® STR	715
SKINTOP® STR-M	652
SK Self-adhesive labels	882
SMARTSTRIP stripping tool	907
SnapIn rail mount Adapter	425
Spare tool Cable - Eater	952
Special Encoder and resolver cables	107
SPIRAL H07BQ-F BLACK	232
Splice Box Compact	439
SP Metal print	896
STAR STRIP stripping tool	906
STEEL GUN HT-338 cable tie pliers	963
Storage box	861
ST steel cable tunnel	972
STY plastic cable tunnel	972
Surface-Mounted Case (84x84 mm) and coverplate	424
T	
T 2288 pressing pliers	929
TBTA self-amalgamating tape	942
TBW / TBM shrink tube	946
TC 121 plug socket	964
TC aluminium screw socket	966
TC mounting socket with saddle	965
TC open assembly clip	969
TC tie screw socket	966
TC tie small socket	965
TC tie socket	964
TEB branch muff	949
TEC sealing cap	949
Temflex™ 1500 insulating tape	942
Terminating resistor M12 for DeviceNet/ CANopen/PROFIBUS	396
TI insulating tape	942
TRUCK adapters and cables	229
TRUCK Cables for batterie-charging	229
Tube cable lugs KR/ KRT/ KRF	927
TWIN conductor end sleeves	912
TWIN assorted boxes	913
Twist Tail™ cable tie	954
TY - FAST® standard cable ties	955
TY - FAST®- UV-resistant cable ties	955
TY-GRIP® FOL/ FO cable tie	960
TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers	962
Type 2 Accessories	248
Type 2 cable 7-way spiral two-sided	245
Type 2 charging cable 7-way Helix two-sided	247
Type 2 charging cable 7-way one-sided	246

Type 2 charging cable 7-way spiral one-sided to Y distributor

Product	Page
Type 2 charging cable 7-way spiral one-sided	245
Type 2 charging cable 7-way two-sided	246
Type 2 charging socket	248
Type F charging cable 3-way	249
Type F charging cable 3-way spiral	249
Type F Charging socket 3-way	252
TY-RAP® detectable cable ties	956
TY- RAP® for screwing on, cable ties	959
TY- RAP® heat-resistant cable ties	958
TY- RAP® standard cable ties	957
TY- RAP® weather-proof, UV-stabilised	958
TY- RAP® with labelling area, cable ties	959
U	
UNITRONIC® 100	256
UNITRONIC® 100 CY	256
UNITRONIC® 300 / UNITRONIC® 300 CY	272
UNITRONIC® BUS ASI	300
UNITRONIC® BUS ASI FD	301
UNITRONIC® BUS CAN	329
UNITRONIC® BUS CAN FD P	329
UNITRONIC® BUS CC	333
UNITRONIC® BUS CC FD P FRNC	333
UNITRONIC® BUS EIB / KNX	337
UNITRONIC® BUS FF	332
UNITRONIC® BUS IBS	335
UNITRONIC® BUS IBS FD P	336
UNITRONIC® BUS IBS Yv	335
UNITRONIC® BUS LD	324
UNITRONIC® BUS LD FD P	325
UNITRONIC® BUS PA	326
UNITRONIC® BUS PB	302
UNITRONIC® BUS PB 105	303
UNITRONIC® BUS PB ARM	304
UNITRONIC® BUS PB BURIAL FC	306
UNITRONIC® BUS PB FD FRNC FC	309
UNITRONIC® BUS PB FD P	307
UNITRONIC® BUS PB FD P A	307
UNITRONIC® BUS PB FD P COMBI	309
UNITRONIC® BUS PB FD P FC	308
UNITRONIC® BUS PB FD P HYBRID	310
UNITRONIC® BUS PB FD Y HYBRID	310
UNITRONIC® BUS PB FESTOON	311
UNITRONIC® BUS PB FRNC FC	304
UNITRONIC® BUS PB ROBUST	303
UNITRONIC® BUS PB TORSION	311
UNITRONIC® BUS PB Y 7-W FC BK	306
UNITRONIC® BUS PB Yv	305
UNITRONIC® BUS PB YY	305
UNITRONIC® BUS SAFETY	334
UNITRONIC® CY PiDY (TP)	283
UNITRONIC® DeviceNet FD THICK+THIN	328
UNITRONIC® DeviceNet THICK + THIN	327
UNITRONIC® EB CY (TP)	278
UNITRONIC® EB JE-LiYCY...BD	279
UNITRONIC® EB JE-Y(ST)Y 0,8 BD	280
UNITRONIC® FD	273
UNITRONIC® FD CP (TP) plus	277
UNITRONIC® FD CP plus	276
UNITRONIC® FD CY	274
UNITRONIC® FD P plus	275
UNITRONIC® LAN 1000 S/FTP Cat.7	413
UNITRONIC® LAN 1200 S/FTP Cat.7 _A	414
UNITRONIC® LAN 1500 S/FTP Cat.7 _A	414
UNITRONIC® LAN 200 - CAT.5e	410
UNITRONIC® LAN 250 - CAT.6	411
UNITRONIC® LAN 500 - Cat.6 _A	412
UNITRONIC® LAN FLEX	415
UNITRONIC® LAN OUTDOOR	415
UNITRONIC® Li2YCY (TP)	286
UNITRONIC® Li2YCY (TP) fine-wired	286
UNITRONIC® Li2YCY PiMF	288
UNITRONIC® Li2YCYv (TP)	286
UNITRONIC® LiFYCY (TP)	282

Product	Page
UNITRONIC® LiHCH	270
UNITRONIC® LiHCH (TP)	271
UNITRONIC® LiHH	269
UNITRONIC® LiYCY	261
UNITRONIC® LiYCY (TP)	265
UNITRONIC® LiYCY (TP) A	266
UNITRONIC® LiYCY A	263
UNITRONIC® LiYCY-CY	281
UNITRONIC® LiYD11Y	284
UNITRONIC® LiYY	258
UNITRONIC® LiYY (TP)	264
UNITRONIC® LiYY A	260
UNITRONIC® PUR CP	267
UNITRONIC® PUR CP (TP)	268
UNITRONIC® SENSOR	379
UNITRONIC® SENSOR master cable bulk stock	373
UNITRONIC® SPIRAL	235
UNITRONIC® ST	285
Universal strip stripping and cutting tool	906
V	
V 1311 pressing pliers, hydraulic	930
W	
WM BW Blanc cable marker	891
WT 3195 G pressing pliers, hydraulic	929
WT 4454 G universal pressing pliers	932
WT-AG 6016 G crimping inserts	937
WT-AH 1425 G crimping inserts	936
WT-AH 2560 G crimping inserts	936
WT-BL 0560 G crimping inserts	935
WT-BL 10 G crimping inserts	935
WT-BL 16 G crimping inserts	935
WT-BLH 1060 G crimping inserts	936
WT - FMP 20 crimping tool hydraulic	933
WT-IS 0510 G crimping inserts	934
WT-IS 0560 G crimping inserts	934
WT-IS 1525 G crimping inserts	934
WT-IS 2525 G crimping inserts	934
WT-KR 0560 G crimping inserts	935
WT-KR 1475 G crimping inserts	936
WT-KRW 1525 G crimping inserts	937
WT-RG 58/59 IL crimping inserts	937
X	
X00V3-D Copper Earthing Cable	136
X05V-K with twin colour helix insulation	197
X05Z-K 110°C	210
X07V-K with twin colour helix insulation	199
X07Z-K 110°C	211
Y	
Y distributor	363

For the use of our products is valid

The conformity of our products with the relevant European directives and compliance with the provisions contained therein shall be indicated by the CE marking.

The safety of our products is closely associated with how they are used. A knowledge of and adherence to the respective international/national standards of use (e.g. DIN VDE 0100; 0298) are mandatory.

There are particular risks if installed improperly. This applies to all our products/items:

Processing is only to be done by an authorized electrician! Otherwise, there is the risk of an electric shock or a fire ignited by electric current!

Safety

Without exception our products are tested for application safety in accordance with laid down standards and our own regulations, which complement the standards. Relevant legal requirements and safety regulations are also observed. Provided due care and attention is paid, the possibility of product-specific danger to the user may thus reasonably be excluded. Where products are used carelessly or incorrectly, however, considerable

danger to persons and the environment may arise. For this reason, our cables must only be processed and/or used responsibly by trained electricians or specialists. This catalogue contains general information for the application of each product. Independent of such information, the application standards DIN VDE 0298 and DIN VDE 001 for cables will apply. Excerpts from these standards, as well as complementary selection

and application tables, design and installation guidelines, are contained in the tables in the appendix to this catalogue. Our machines and installation tools are – where necessary – designed in accordance with the machine guidelines and display the CE identification mark. It must be noted, however, that our machines and installation tools must only be used by trained specialized personnel and for the purpose for which they

were designed. ©Copyright by U.I. Lapp GmbH. Reprinting or reproduction of the text or the illustrations may be made only with written approval and with correct indication of source. We reserve the right to make modifications to our products, especially those based on technical improvements or continued development. All illustrations and numerical data etc. are therefore without warranty and are subject to change.

ÖLFLEX®

AVS Stuttgart

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

SILVYN®

FLEXIMARK®



04/12.19.600.91120007

Terms of Trade:
Our general conditions of sale
can be downloaded from our website
www.lappgroup.com/terms

 **LAPP GROUP**

www.lappgroup.com

To contact your local Lapp Group representative
please visit www.lappgroup.com/worldwide