

# THE WORLD OF LAPP

Innovations 2017



**LAPP GROUP**

# Legend for icons

## INDUSTRIES



Automation



e-Mobility



Food & Beverage



Mechanical and  
Plant Engineering



Oil & Gas



Rail



Solar Energy



Wind Energy

## PRODUCT CHARACTERISTICS



Suitable for outdoor use



Good chemical  
resistance



Flame-retardant



Wide clamping range



Halogen-free



Heat-resistant



Cold-resistant



Corrosion-resistant



Maximum vibration  
protection



Mechanical resistance



Assembly time



Low weight



Oil-resistant



Optimum strain relief



Space requirement



Power chain



Clean room



Robust



Acid-resistant



Reliability



Integrated  
SKINTOP® cable gland



Voltage



Connector with  
standard housing unit



Interference signals



Temperature-resistant



Torsion-resistant



Torsion load



UV-resistant



Waterproof



Variety of approval  
certifications

**Please note:** the purpose of the icons is to provide you with a quick overview and a rough indication of the product features to which the corresponding information relates. You can find details of product characteristics in the “technical data” sections on the product pages.

# Content

---

|                                                                                     |                                                                     |    |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|----|
|    | Company information                                                 | 2  |
|    | ÖLFLEX®<br>Power and control cables                                 | 12 |
|    | UNITRONIC®<br>Data communication systems                            | 22 |
|   | ETHERLINE®<br>Data communication systems<br>for ETHERNET technology | 24 |
|  | HITRONIC®<br>Optical transmission systems                           | 26 |
|  | EPIC®<br>Industrial connectors                                      | 27 |
|  | SKINTOP®<br>Cable glands                                            | 47 |
|  | Tools and<br>cable accessories                                      | 51 |

# Success through values

Rock solid, high performance. Regional roots, global aspirations. Fast, reliable, high quality – and development that is always one step ahead. For products for the railway industry as well. This is Lapp.

The southwest region of Germany is considered one of the most innovative and powerful industrial sectors in the world, and for good reason. Lapp is a part of this region, helping to guide it and its success worldwide.

As a completely family run company, we know: Everything that we have achieved

since our founding in 1959 is based on the daily commitment of our skilled staff and partnerships with our customers based on trust. Each of them has made a decisive contribution to our mutual success.

Today, Lapp is one of the world's leading manufacturers of cables, leads, cable accessories and systems of the highest level of quality. We have approximately 3,440 employees worldwide. With 17 production sites on four continents, more than 40 sales companies and hundreds of dedicated consulting experts, we are always close by. And not just physically:

customer proximity cannot be measured in mere kilometres. It is based on listening, making your challenges our own and developing solutions that help to further your business model.

Candid closeness and a trusting, partnership-based cooperation are more than just words for Lapp, they are values upon which we have built our family company.

The result? Intelligent and reliable connectivity solutions precisely tailored to the needs of our globally active customers. For you as well.

Customer-oriented  
Successful  
Family based  
Innovative. **Lapp.**

- Founded in 1959
- A leading manufacturer of cables, leads, accessories and complete system solutions for connection technology
- Approximately 3,440 employees worldwide
- 17 production facilities
- More than 40 sales companies
- Hundreds of dedicated consulting experts worldwide
- Years of experience in the rail industry



Andreas Lapp,  
Matthias Lapp,  
Ursula Ida Lapp,  
Alexander Lapp,  
Siegbert Lapp.

# Lapp makes it into the TOP 100

The Stuttgart-based company has become one of Germany's elite innovators/Company to receive award from TOP 100 mentor Ranga Yogeshwar



Lapp makes it into the TOP 100 and belongs to the most innovative German SMEs. v.l. Dr. Simon Alig, Assitant of the Managing Board Technology & Innovation, mentor Ranga Yogeshwar, Guido Ege, Head of Product Management and Product Development, and Georg Stawowy, Member of the Board for Technology and Innovation. Picture: KD Busch/comamedia, [www.top100-germany.com](http://www.top100-germany.com)

The TOP 100 companies, a title bestowed upon the most innovative German SMEs, are to be named in the 23rd edition of this competition. The Lapp Group is among the innovative elite this year. The Stuttgart-based company had taken part in a demanding scientific selection process to achieve this status. The Group's innovation management and success in innovation were examined. The mentor of the innovation competition, Ranga Yogeshwar, will present the award for Top Innovator during the German SME Summit on 24 June in Essen.

The innovative strength behind the Lapp Group, which has been awarded the TOP 100 seal, has a name: "technology and innovation management", or TIM for short. The workshops of the same name run by the Stuttgart-based experts in connection technology are a breeding ground for new ideas. Employees from around the world working in a wide range of roles are invited to develop new solution approaches for customers three or four times per year. There are also a number of smaller TIM workshops in various departments throughout the company. "Our aim is for our employees to view innovations as part of their day-to-day work going forward so that they no longer need managers in order to come up with innovations," said Siegbert Lapp, Chairman of the Supervisory Board. The Top Innovator develops and produces complete solutions for cable technology and creates a broad portfolio of branded products, including flexible cables, power

and control cables, data and fibre optic cables, cable glands, industrial connectors and cable accessories. 3,300 or so employees around the world work for the family company, which was founded in 1959. 1,200 of these employees are based in Germany. The portfolio of standard products, not including the company's countless special-purpose solutions, now consists of over 40,000 items. This huge range is the result of many successful innovations.

Lapp is the market leader in the industry in Germany as well as being in the top tier internationally. Georg Stawowy, Member of the Board for Technology and Innovation, explains Lapp's philosophy for innovation: "Firstly, we want to tap into new markets with our innovations. Secondly, we want to be the company that is always providing the latest and best products."

Over 4,000 companies expressed an interest in participating in TOP 100 this year. 366 applied for the qualifying round. 284 reached the final round. 238 then managed the leap into the TOP 100 (a maximum of 100 companies in each of the three size categories). The companies were once again assessed by Professor Nikolaus Franke and his team at the Chair for Entrepreneurship and Innovation of Vienna University of Economics and Business. They used 100 parameters in five assessment categories – "innovation-friendly executive management", "innovation climate", "innovative processes and organisation", "inno-

vation marketing/external orientation" and "innovation success" – to perform their evaluation. The TOP 100 companies are seen as the trendsetters in their industries. This is also reflected in the assessment's figures: Among the companies, 97 are market leaders on a national scale and 32 are market leaders on a global scale. Looking at recent statistics, they generated an average of 40 percent of their turnover with market innovations and product improvements brought onto the market ahead of their competitors. Their sales growth was around 28 percentage points higher than the respective average in the industry. In total, the SMEs have filed 2,292 national and international patents over the past three years. This innovative capacity is also paying off in the workplace as the TOP 100 companies are planning to hire around 9,500 new employees over the next three years.

Ranga Yogeshwar, the mentor of TOP 100 who is also a science journalist and TV presenter, is impressed by the quality of the companies and is hoping to see others follow in their footsteps: "The way in which the TOP 100 companies come up with new ideas and develop groundbreaking products and services from these ideas is truly remarkable. I am so glad that this award shines a light on these qualities. Hopefully their success will encourage other companies to follow suit. After all, this culture of innovation will become increasingly significant to all companies in future."



Die innovativsten  
Unternehmen  
im Mittelstand

Lapp Group

## TOP-INNOVATOR 2016

Unter der wissenschaftlichen Leitung von Professor Dr. Nikolaus Franke vom Institut für Entrepreneurship und Innovation der Wirtschaftsuniversität Wien werden jedes Jahr die innovativsten Unternehmen des deutschen Mittelstands ermittelt. Die Prüfung des Innovationsmanagements der Lapp Group brachte hervorragende Ergebnisse. Damit zählt das Unternehmen zu den Top-Innovatoren im Mittelstand.

  
PROF. DR. NIKOLAUS FRANKE  
Institut für Entrepreneurship und Innovation  
Wirtschaftsuniversität Wien

24. Juni 2016

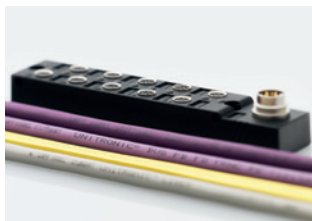
  
RANGA YOGESHWAR  
Mentor  
von TOP 100

# Eight brands, one promise: uncompromising quality – worldwide



**ÖLFLEX®**  
Power and control cables

ÖLFLEX® has become synonymous with power and control cables. Our flexible and oil-resistant cables satisfy the highest demands and can withstand even the very toughest conditions.



**UNITRONIC®**  
Data communication systems

Our high-quality UNITRONIC® data network cables and field bus components provide a forward-looking solution for all applications in industrial machinery and plant engineering. From transmission of simple control signals to field bus signals in complex network structures – we offer a dependable cabling and connection solution for almost every situation.



**ETHERLINE®**  
Data communication systems  
for ETHERNET technology

Our ETHERLINE® branded products open up a secure, fast and reliable path to the future of Ethernet applications. The systems are made up of durable and robust cables and connection components for passive network technology, and deliver an effective solution for almost any application, particularly in an industrial environment.



**HITRONIC®**  
Optical transmission systems

HITRONIC® fibre optic cables make transmitting large data volumes easy: fault free, bug proof and at almost light speed. Even electromagnetic radiation does not interfere with the transmission. The HITRONIC® range includes the ideal solution for indoor or outdoor use, for demanding conditions, and even for use in power chains.



**EPIC®**  
Industrial connectors

EPIC® industrial connectors can be found everywhere in industrial machinery and plant engineering, for measuring, control and drives. EPIC® is a flexible system of housings, inserts and contacts: all extremely robust, absolutely safe and simplicity itself to assemble.



**SKINTOP®**  
Cable glands

Simply feed in the cable and twist. That's it. Our SKINTOP® cable glands provide secure connections in no time. The universal systems are simple but effective. They secure and centre the cable, hermetically seal it and guarantee optimum strain relief.



**SILVYN®**  
Protective cable conduit systems  
and cable carrier systems

The universal range of SILVYN® protection and guidance systems protect cables effectively against dust, moisture, mechanical, thermal and chemical influences. The versatile SILVYN® CHAIN range of energy supply chains also protects and guides cables in dynamic applications.



**FLEXIMARK®**  
Marking systems

The requirement: permanent marking. The solution: FLEXIMARK®. These sophisticated systems mean that a clear overview inside a control cabinet is no longer just a pipe dream. From simple labels for manual marking through to electronic markings, the FLEXIMARK® range is guaranteed to be permanent.

# Reliably connecting the world

We want to help you become even more productive and successful. This is why we work tirelessly on optimising our processes. We do everything to make sure we always find the best solution for you and also provide you with quick, efficient and effective support.

No matter where you are – we are always by your side. Our plants, sales companies,

partners and, above all, our competent teams of advisers ensure we offer you a comprehensive service on every continent. We do not simply distribute cable technology, we also manufacture our products ourselves – which represents another advantage for you. As a manufacturer with 17 of our own production facilities, you will benefit from our expertise in the development, design and manufacture of cables, system

products and cable accessories. Thanks to this expertise, we can guarantee that Lapp will provide you with the quality that you require and that you demand.

You can always rely on quality from Lapp – wherever you are in the world. This is also embodied by our strong brands.

8

strong  
brands

100

sales partners

1

innovation  
after  
another

Employees from  
152  
countries

More than  
40,000  
standard products

40  
proprietary sales  
companies

3,440  
employees

# The Lapp Group worldwide

## Algeria

### Cablemat Sarl

16 Cité Mimouni Lotissement 18  
Villa N° 14  
Bordj El Kiffan, ALGER  
Tel.: +213 550024331, -661, -404, -331  
Fax: +213 20388220, -212, -010, -39  
www.cablemat.net

## Argentina

### NAKASE SRL

Calle 49 No. 5764  
B1653AOX  
Villa Ballester  
1870 BUENOS AIRES  
Tel.: +54 11 4768 4242  
Fax: +54 11 4768 4242  
ventas@nakase.com.ar  
www.nakase.com.ar

## Armenia

### Integral design & engineering LLC

8 Tumanyan str.  
International Business Center  
0001 YEREVAN  
Tel.: +374 10 520188  
Fax: +374 10 519188  
info@integral.am  
www.integral.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

Bremenstraße 8  
4030 LINZ  
Tel.: +43 732 781272-444  
Fax: +43 732 781272-34  
sales@lappaustria.at  
www.lappaustria.at

## Belarus

### PNS – Professional Network Systems

Temirjazeva str. 64b, office 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  
The Netherlands  
Tel.: +32 78 353060  
Fax: +32 78 353065  
sales.lappbenelux@lappgroup.com  
www.lappbenelux.com

## Brazil

### Cabos Lapp Brasil Ltda.

Av. Dr. Mauro Lindenberg  
Monteiro, 628  
Galpao 18, Osasco  
CEP 06278-010 SAO PAULO  
Tel.: +55 11 21664166  
Fax: +55 11 21664165  
vendas@lappgroup.com.br  
www.lappgroup.com.br

### Cabos Lapp Brasil Ltda.

Rodovia BA535 (via Parafuso)  
km 13 e 14 – Sentido Salvador  
Polo Industrial e Logístico Via  
Parafuso – Lote 06  
CEP 42810-200 CAMAÇARI-BA  
Tel.: +55 71 35002400

## Bulgaria

### V&V Isomatic Ltd.

40a, Pirin Str.  
1680 SOFIA  
Tel.: +359 29 583111  
Fax: +359 29 582270  
office@viv-isomatic.com  
www.viv-isomatic.com

## Canada

### Lapp Canada Inc.

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 Vespucio 9670  
Parque Industrial Puerto Santiago  
Pudahuel, SANTIAGO  
Tel.: +56 2 25851200  
Fax: +56 2 27470153  
ventaschile@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@lappgroup.com.cn  
www.lappgroup.com.cn

### Lapp Cable Works Shanghai Co., Ltd.

No. 6 Standard Workshop Lingang  
Industrial Area  
1555 Cenglin Road, Pudong District  
SHANGHAI 201306  
Tel.: +86 21 20955833  
Fax: +86 21 20955834

## Colombia

### TRANSMISIONES LTDA

Cra 69B No. 21A – 24 Bodega UE 28 – 1  
Parque Industrial Montevideo  
BOGOTÁ, D.C  
Tel.: +57 1 4126898  
Fax: +57 1 2929736  
info@transmisiones.de  
www.transmisiones.de

## Congo

### Dezatech sarl

Av. Kasai no 12  
KINSHASA/Gombe  
Tel.: +243 8211 45963  
dg@dezatech.com

## Costa Rica

### Elvatron, SA

De Repifreno en la Uruca  
400 metros Nte.  
SAN JOSÉ, Costa Rica  
P.O. Box 8-3770 (1000)  
Tel.: +506 2242-9955  
Fax: +506 2520-0697  
elvatron@elvatron.com  
www.elvatron.com

## 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

### 3 BRO Ltd.

3 Limnou Str.  
Office 301  
3820 LIMASSOL  
Tel.: +357 25255353  
info@3bro.gr

## Czech Republic

### LAPP KABEL s.r.o.

Bartosova 315, Kvítkovice  
765 02 OTROKOVICE  
Tel.: +420 573 501011  
Fax: +420 573 394650  
info@lappgroup.cz  
www.lappgroup.cz

## Denmark

### Lapp Danmark

Korskildeeng 6  
2670 GREVE  
Tel.: +45 43 950000  
Fax: +45 43 950009  
ordre@lappgroup.dk  
www.lappgroup.dk

## Dominican Republic

### ING. Rudy Moreno & Asociados, S.R.L.

Prolongación 27 de Febrero Esq.  
Cuidad Agraria, Edif. Yarudith  
SANTO DOMINGO OESTE  
Tel.: +809 334 4394  
Fax: +809 334 4454  
www.ingrudymorenoyasoc.com

## Ecuador

### Elsystec S.A.

Electricidad Sistemas y Tecnología  
Vasco de Contreras N35-251 y  
Mañosa  
CÓDIGO POSTAL 170521  
Tel.: +593 2 2456510  
Fax: +593 2 2456598  
elsystec@elsystec.com.ec  
elsystec@uiio.satnet.net  
www.elsystec.com.ec

## Egypt

### see United Arab Emirates

LAPP CABLES MIDDLE EAST FZE

## El Salvador

### Intek El Salvador S.A. de C.V.

Calle Gabriela Mistral No. 373  
Entre Blvd. Los Héroes y 33 Av. Nte.  
SAN SALVADOR, El Salvador CA.  
Tel.: +503 2260-8888  
Fax: +503 2260-8855  
inteksv@intek-ca.com  
www.intek-ca.com

## Estonia

### Lapp Milttron SIA Eesti Filiaal

Kastani pst 10  
44307 RAKVERE  
Tel.: +372 6 518970  
Fax: +372 6 518971  
orders@lappmilttron.lv  
www.lappmilttron.ee

## Finland

### SKS Automaatio Oy

Martinkyläntie 50  
P.O. Box 122  
01721 VANTAA  
Tel.: +358 2 076461  
Fax: +358 2 07646820  
automaatio@sksf.fi  
www.sks.fi

## France

### Lapp France s.a.r.l.

Technopôle 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

### Câbleries Lapp Sarl

Technopôle Forbach Sud  
Rue Avogadro  
57600 Oeting  
Tel.: +33 387 844343  
Fax: +33 387 871641  
accueil@lappgroup.com

## Georgia

### Insta LLC

Sergo Zakariadze str. 8  
0177 TBILISI  
Tel.: +995 32 2202020  
Fax: +995 32 2202022  
sales@insta.ge  
www.insta.ge

## Germany

### U.I. Lapp GmbH

Schulze-Delitzsch-Straße 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.

4a. Ave. 10 – 31 Zona 9  
GUATEMALA  
Tel.: +502 2507-0500  
Fax: +502 2507-0501  
intekgt@intek-ca.com  
www.intek-ca.com

## Honduras

### intek Honduras

Ofi-Bodegas Premier  
100 mts. antes del Peaje a La Lima  
Edificio PWC-14B  
SAN PEDRO SULA  
Tel.: +504 2559-4748, -50  
Fax: +504 2559-4740  
intekhn@intek-ca.com  
www.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 Hungária Kft.

Neumann János u.1  
2040 BUDAÖRS  
Tel.: +36 23 501-250  
Fax: +36 23 501-259  
sales@lapphungaria.hu  
www.lapphungaria.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 SMI

Graha INTI FAUZI, 7th Floor  
Jl. Buncit Raya No. 22  
JAKARTA 12510  
Tel.: +62 21 27537051  
Fax: +62 21 27537052  
sales\_jjli@jjsea.com  
www.jj-lappcable.com

## Iran

### see United Arab Emirates

LAPP CABLES MIDDLE EAST FZE

## Island

### Johan Rönning Ltd.

Klettagardar 25  
104 REYKJAVIK  
Tel.: +354 5 200800  
Fax: +354 5 200888  
ronning@ronning.is  
www.ronning.is

## Israel

### Arrow Control Cables Ltd.

7, Zavitán 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 0362 4871  
Fax: +39 0362 487330-340  
lappitalia@lappitalia.it  
www.lappitalia.it

### Camuna Cavi s.r.l.

Via Generale Treboldi, 128  
25048 EDOLO (BS)  
Tel.: +39 0364 773411  
Fax: +39 0364 770120  
info@camunacavi.it  
www.camunacavi.it  
**Sales Office**  
Via Lavoratori Autobianchi 1  
Building 20  
20832 DESIO (MB)

## 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

## Jordan

### see United Arab Emirates

LAPP CABLES MIDDLE EAST FZE

## Kazakhstan

### Lapp Kazakhstan LLP

Abaya ave. 13, office 703  
010000 ASTANA c.  
Tel.: +7 7172 787365  
sales@lappgroup.kz  
www.lappgroup.kz

## Korea

### Lapp Korea LLC.

42, Jangangongdan 8-gil  
Jangan-myeon, HWASEONG-SI  
Gyeonggi-do, 445-941 Korea  
Tel.: +82 31 1688 1099  
Fax: +82 31 697 4099  
www.lappkorea.com

## Kuwait

### see United Arab Emirates

LAPP CABLES MIDDLE EAST FZE

## Kyrgyzstan

**MEG Solutions LLC**  
Chuj avenue 265A, office 204  
720071 BISHKEK  
Tel.: +996 312 641946  
Fax: +996 312 641983  
office@meg.kg  
www.meg.kg

## Latvia

**LAPP MILTRONIC SIA**  
Ulbrokas 44a  
RIGA, 1021  
Tel.: +371 67 501900  
Fax: +371 67 501909  
pasutijumi@lappmiltronic.lv  
www.lappmiltronic.lv

## Lebanon

**see United Arab Emirates**  
LAPP CABLES MIDDLE EAST FZE

## Libya

**Al Jouda Co.**  
Al Fath – Street  
Al Buraq – Building 3rd floor  
BENGHAZI  
Tel.: +218 91 7433363  
ilsharee@yahoo.co.uk

## Lithuania

**LAPP MILTRONIC filialas**  
Aukštaičių g. 6  
11341 VILNIUS  
Tel.: +370 5 2780390  
info@lappmiltronic.lt  
www.lappmiltronic.lt

## Macedonia

**Siskon Doeel**  
Taskenska 4A  
1000 SKOPIJE  
Tel.: +389 2 3062423  
Fax: +389 2 3061250  
siskon@mt.net.mk  
www.siskon.com.mk

## Malaysia

**JJ-LAPP Cable (M) sdn. Bhd.**  
16, Jalan 51A/225,  
46100 PETALING JAYA SELANGOR  
Tel.: +603 78 616288  
Fax: +603 78 616299  
sales\_jjlm@jjsea.com  
www.jj-lappcable.com

## Malta

**G & E Electronics Ltd.**  
Genics Bldgs.  
Giov. Papaffy Str.  
B'KARA BKR 4021  
Tel.: +356 21 486816  
Fax: +356 21 497103  
info@gemalta.com  
www.gemalta.com

## Mexico

**Lapp Mexico S de RL de CV**  
Avenida del bosque 1190 Int. 1  
Parque Industrial del Bosque II  
45619, TLAQUEPAQUE, Jalisco  
Tel.: +52 33 36660250  
Fax: +52 33 36660075  
ventas@lappmexico.com  
www.lappmexico.com

## Republic of Moldova

**Lapp Kabel Romania SRL**  
A1 Business Park  
(Autostrada Bucuresti – Pitesti, Km 13.5)  
Aleea Camilla nr. 11, Unitatea G2  
Comuna Dragomiresti Deal  
Sat Dragomiresti Deal  
Judet ILFOV, 077096  
Tel.: +40 213 1009-61  
Fax: +40 213 1009-59  
office@lappkabel.ro  
www.lappkabel.ro

## Mongolia

**EUROCABLE G Co., Ltd.**  
Baruun Selbe 5/26  
1st Khoroo, Chingeltei District  
15160 ULAANBAATAR  
Tel.: +976 70 117171  
info@cable.mn  
www.cable.mn

## Morocco

**Fiabel**  
16 Rue des Dahlias (Beausite)  
Boulevard La Grande Ceinture  
Ain Sebâa, CASABLANCA  
Tel.: +212 522 403301, 522 404616  
Fax: +212 522 403303  
www.fiabel.ma

## Netherlands

**Lapp Benelux B.V.**  
Van Dijklaan 16,  
5581 WG WAALRE  
Postbus 74, 5580 AB WAALRE  
Tel.: +31 40 2285000  
Fax: +31 40 2285010  
sales.lappbenelux@lappgroup.com  
www.lappbenelux.com

## New Zealand

**Engineering Computer Services Ltd.**  
Cnr Te-Rapa & Ruffell Rd  
P.O. Box 20204  
HAMILTON, 3288  
Tel.: +64 7 8492211  
Fax: +64 7 8492220  
garry@lappgroup.co.nz  
www.lappgroup.co.nz

## Nicaragua

**Electronica Tecnica SA.**  
De la Óptica Nicaraguense  
3C al este, 1/2C al Sur  
Casa #38 Residencial Bolonia  
MANAGUA  
Tel.: +505 2254-4913  
info@n.elvatron.com  
nicaragua.elvatron.com

## Norway

**Miltronik AS**  
Eikveien 11  
3036 DRAMMEN  
Tel.: +47 32 261300  
Fax: +47 32 261398  
info@miltronik.no  
www.miltronik.no

## Oman

**see United Arab Emirates**  
LAPP CABLES MIDDLE EAST FZE

## Pakistan

**see United Arab Emirates**  
LAPP CABLES MIDDLE EAST FZE

## Panama

**Lapp Latinamerica Support Corporation**  
Edif. Global Bank Calle 50, piso 38  
Int. 3801-A, PANAMA  
Tel.: +507 3938-565  
soporte.latam@lappgroup.com

## Peru

**DIPROSOL PERU SAC**  
Av. Velasco Astete 2371  
Surco LIMA 33  
Tel.: +51 1 2752766  
Fax: +51 1 2752775  
ventas@diprosol.com.pe  
www.diprosol.com.pe

## Philippines

**JJ-LAPP Cable (P) Inc**  
Unit 704, Philplans Corporate Center  
1012 Triangle Drive  
Bonifacio Global City  
1634 TAGUIG CITY, MANILA  
Tel.: +632 786 7566  
Fax: +632 786 7544  
sales\_jjlp@jjsea.com  
www.jj-lappcable.com

## Poland

**Lapp Kabel Sp. z o.o.**  
Ulica: Profesjonalna 1  
Biskupice Podgórze  
55-040 KOBIERZYCE  
Tel.: +48 71 3306300  
Fax: +48 71 3306306  
info@lapppolska.pl  
www.lapppolska.pl

## Portugal

**Policabos S.A.**  
Av. Pedro Álvares Cabral  
Lugar da Capa Rota  
2710-144 SINTRA  
Tel.: +351 21 9178640  
Fax: +351 21 9178649  
policabos@policabos.pt  
www.policabos.pt

## Qatar

**see United Arab Emirates**  
LAPP CABLES MIDDLE EAST FZE

## Romania

**Lapp Kabel Romania SRL**  
A1 Business Park  
(Autostrada Bucuresti – Pitesti, Km 13.5)  
Aleea Camilla nr. 11, Unitatea G2  
Comuna Dragomiresti Vale  
Sat Dragomiresti Deal  
Judet ILFOV, 077096  
Tel.: +40 213 1009-61  
Fax: +40 213 1009-59  
office@lappkabel.ro  
www.lappkabel.ro

## Russia

**Lapp Russia OOO**  
Mira st., 7, Krutye Kluchi  
443028 SAMARA  
Tel.: +7 846 2310333  
Fax: +7 846 2310028  
info@lappgroup.ru  
www.lappgroup.ru

## Saudi Arabia

**see United Arab Emirates**  
LAPP CABLES MIDDLE EAST FZE

## Serbia

**VESIMPEX d.o.o.**  
Patrijarha Dimitrija 24 (DMB)  
11090 BEOGRAD-RAKOVICA  
Tel.: +381 11 4049-070, -071, -072, -073  
Magacin/warehouse: +381 11 4049-075  
Fax: +381 11 4049-077  
Mob: +381 63 693-373  
info@vesimpex.rs  
www.vesimpex.rs

## Singapore

**Lapp Logistics Pte. Ltd.**  
No.9 Tuas South St. 3  
SINGAPORE 638017  
Tel.: +65 6558-7176  
Fax: +65 6558-7081  
lappsea.lappgroup.com  
**JJ-LAPP Cable (S) Pte. Ltd.**  
No.9 Tuas South St 3  
SINGAPORE 638017  
Tel.: +65 6508-6200  
Fax: +65 6863-1271  
sales\_jjls@jjsea.com  
www.jj-lappcable.com

## Slovakia

**LAPP SLOVENSKO, s.r.o.**  
Piaristicka 2  
949 24 NITRA  
Tel.: +421 376 578095  
Fax: +421 376 578095  
info@lappgroup.sk  
www.lappgroup.sk

## Slovenia

**Lapp, d. o. o.**  
Limbuška cesta 2  
2341 LIMBUŠ  
Tel.: +386 2 4213550  
Fax: +386 2 4213571  
info@lappslovenia.com  
www.lappslovenia.com

## South Africa

**Lapp Group Southern Africa**  
51 Brunton Circle  
Founders View South  
Modderfontein  
1645 GAUTENG  
Tel.: +27 11 2013200  
Fax: +27 11 6095850  
info@lappkabel.co.za  
www.lappcable.co.za

## Spain

**Lapp Group España**  
Avda. de les Garrigues, 34 – 36  
Parque Empresarial Mas Blau II  
08820 EL PRAT DE LLOBREGAT  
(Barcelona)  
Tel.: +34 902 108 669  
Fax: +34 934 796 272  
info@lappgroup.es  
www.lappgroup.es

## Sweden

**Miltronik AB**  
Kungshagsvägen 7  
Box 1022  
611 29 NYKÖPING  
Tel.: +46 155 77780  
Fax: +46 155 77701  
info@miltronik.se  
www.miltronik.se

## Sales office Denmark

Korskildeeng 6  
2670 GREVE  
Tel.: +45 43 950000  
Fax: +45 43 950009  
info@miltronik.dk  
www.miltronik.dk

## Switzerland

**Volland AG**  
Ifangstrasse 103  
8153 RÜMLANG  
Tel.: +41 44 8179797  
Fax: +41 44 8179700  
info@volland.ch  
www.volland.ch

## EPIC®

**Bachofen AG**  
Ackerstraße 42  
8610 USTER  
Tel.: +41 44 9441111  
Fax: +41 44 9441233  
info@bachofen.ch  
www.bachofen.ch

## Syria

**see United Arab Emirates**  
LAPP CABLES MIDDLE EAST FZE

## Taiwan

**DKSH Taiwan Ltd.**  
10th Floor, No. 22, Lane 407  
Tiding Blvd., Sec. 2  
Neihu Technology Park  
TAIPEI CITY 114-93  
Tel.: +886 2 87527597  
Fax: +886 2 87518688  
edmund.foo@dksh.com

## Thailand

**JJ-LAPP Cable (T) Ltd.**  
23/110-117 Sorachai Building  
25-29th FL  
Soi Sukhumvit 63 (Ekamai),  
Sukhumvit Road, Klongton Nua,  
Wattana, BANGKOK 10110  
Tel.: +66 27 878288  
Fax: +66 27 878299  
sales\_jjlt@jjsea.com  
www.jj-lappcable.com

## Tunisia

**ELECSA TN, Groupe TTI**  
Zone industrielle  
8030 GROMBALIA  
Tel.: +216 72 255954  
Fax: +216 72 255980  
commercial@elecsa-tn.com  
www.elecsa-tn.com

## Turkey

**LAPP KABLO San. ve Tic.Ltd.Şti.**  
Atatürk Mah. Şeref Sok. No: 55/1  
34758 ATAŞEHİR-İSTANBUL  
Tel.: +90 216 4565699  
Fax: +90 216 4565687-89  
info@lapp.com.tr  
www.lapp.com.tr

## Ukraine

**Lapp Ukraine LLC**  
201 – 203, Kharkivske shose  
02121 KIEV  
Tel.: +38 044 495-6000  
Fax: +38 044 490-7630  
sales@lappukraine.com  
www.lappukraine.com

## United Arab Emirates

**LAPP CABLES MIDDLE EAST FZE**  
Wing A-502, P.O. Box 341223  
Dubai Silicon Oasis  
DUBAI  
Tel.: +971 4 3712905  
Fax: +971 4 3712918  
lappme@lappgroup.com  
www.lappgroup.com

## Uruguay

**Reprinter LTDA.**  
Avda. Italia 6481  
MONTEVIDEO  
Tel.: +598 2600-7343  
Fax: +598 2600-8658  
lapp@reprinter.com.uy  
www.reprinter.com.uy

## USA

**Lapp USA, Inc.**  
29 Hanover Road  
FLORHAM PARK, NJ 07932  
Tel.: +1 973 6609700  
Fax: +1 973 6609330  
sales@lappusa.com  
www.lappusa.com

## Lapp Tannehill, Inc.

8675 Eagle Creek Parkway Suite 900  
SAVAGE, MN 55378  
Tel.: +1 952 8816700  
Fax: +1 952 8810743  
sales@laptannehill.com  
www.laptannehill.com

## Uzbekistan

### Elektro Potential LLC

Y. Bodomzor str. 2 B, office 311  
Yunusabad area  
100084 TASHKENT  
Tel.: +998 71 1501220  
Fax: +998 71 1501220  
mz1958@yandex.ru

## Venezuela

### Somerinca, CA

Ota Corazón de Jesus  
4ta Transversal de Montecristo c/  
calle el Carmen, de los Dos Caminos  
1070 CARACAS  
Tel.: +212 235 1081/1696/2748,  
237 3003  
Fax: +212 239 9341  
klocmoeller@cantv.net  
www.somerinca.com

## Vietnam

**JJ-Lapp Cable Vietnam Co., Ltd**  
12th floor, Unit 1206, Sailing Tower  
111A Pasteur Street, District 1  
HO CHI MINH CITY  
Tel.: +84 8 62887668  
Fax: +84 8 38236776  
sales\_jjlv@jjsea.com  
www.jj-lappcable.com

## Yemen

**see United Arab Emirates**  
LAPP CABLES MIDDLE EAST FZE

# Cables & The Construction Product Regulation (CPR)

The use of cables in construction works is practically as old as the transmission of electrical power itself. However, the classification of cables as a construction product only gained momentum when (CPR) Regulation (EU) no. 305/2011 came into effect in July 2013, and when the European standard EN 50575 was published

in September 2014. There is often insufficient knowledge regarding the rules for classifying the performance of the respective construction product cables, the product marking and the related documentation. Lapp Kabel would like to assist manufacturers, distributors and users alike.

This refers to cables within the scope of application of a harmonised standard, namely EN 50575:2014+ A1:2016.

As an example please find below relevant documentation of our product ÖLFLEX® CLASSIC 100 H and references/links.

## Declaration of Performance (DoP)



**LEISTUNGSERKLÄRUNG**  
**Gemäß Anhang III der Verordnung (EU) Nr. 305/2011**  
*Declaration of Performance*  
*According to Annex III of Regulation (EU) no. 305/2011*

Dokument-Nr.  
Document no. **UILCPRDoP17\_0014150-1\_A**

1. Eindeutiger Kenncode des Produkttyps  
Unique identification code of the product type  
**ÖELFLEX\_CLASSIC\_100\_H-1**

2. Verwendungszweck  
Usage  
Kabel und Leitungen für allgemeine Anwendungen in Bauwerken in Bezug auf die Anforderungen an das Brandverhalten  
Cables for general applications in construction works subject to reaction to fire requirements

3. Hersteller  
Manufacturer  
**U.I. Lapp GmbH**  
**Schulze-Delitzsch-Straße 25**  
**D-70565 Stuttgart**

4. System zur Bewertung und Überprüfung der Leistungsbeständigkeit  
System of assessment and verification of consistency of performance  
**System 1+**

5. Diese Leistungserklärung betrifft ein Bauprodukt, das von der harmonisierten Norm EN 13501-4 erfasst ist  
This Declaration of Performance concerns a construction product which is covered by the harmonized standard EN 13501-4

6. Produktzertifizierungsstelle  
product certification body  
**No. 0366**

7. Erklärte Leistung  
Declared Performance

| Wesentliche Merkmale<br>Essential characteristics | Leistung<br>Performance | Harmonisierte technische Spezifikation<br>Harmonized technical standard |
|---------------------------------------------------|-------------------------|-------------------------------------------------------------------------|
| Brandverhalten<br>Reaction to fire                | <b>Cca-s2-d2-a1</b>     | <b>EN 50575:2014 + A1:2016</b>                                          |
| Gefährliche Stoffe<br>Hazardous substances        | <b>NPD</b>              |                                                                         |

8. Die Leistung des in Nummer 1 genannten Produkts ist in Übereinstimmung mit der erklärten Leistung in Punkt 7.  
The performance of the referred product in paragraph 1 is in conformity with the declared performance in Section 7.

Diese Leistungserklärung ist ausgestellt unter der allgemeinen Verantwortung des unter Punkt 3 genannten Herstellers.  
This declaration of performance is issued under the general responsibilities listed in section 3. Manufacturer.

Unterzeichnet für und im Namen des Herstellers von:  
Signed for and in name of the manufacturer by:

Stuttgart, 01/04/2017  
U.I. Lapp GmbH  
Leiter Kabelentwicklung  
Head of Cable Development

I.A. Harry Pfeffer

## Detailed information on our website:

[www.lappkabel.com/cpr](http://www.lappkabel.com/cpr)

This is where you can access the Lapp Kabel downloads concerning the European Construction Product Regulation (EU) No. 305/2011 within the scope of application of EN 50575:2014 + A1:2016:

(Power, control and communication cables – cables for general applications in construction works subject to reaction to fire requirements).

The download includes the declaration of performance (DoP) – (currently) in German and English.

There are two ways to find the relevant download.

1. Via the product name in the table below
2. Via the **list of Lapp article/order numbers (CPR articles)** with assignment of the DoP doc. no. and the product type identification code

There is a Readme text file in the download (CPR package) for guidance.

The legal obligation to ensure the consistency/continuity of CE marking on a product is not a new concept for the retail chain, but it is particularly important in relation to CPR. Manufacturers and distributors need to reach agreements on this matter. The Lapp CPR package offers a solution.

The answers in the Lapp Kabel **FAQs** go into more detail on this subject.

## CE-Marking, Label

<http://www.lappkabel.de/cpr>  
U.I. Lapp GmbH Schulze-Delitzsch-Straße 25 D-70565 Stuttgart

 **0366**

Document No. DoP: **UILCPRDoP17\_0014150-1\_A**

Ident.Code Producttype: **ÖELFLEX®\_CLASSIC\_100\_H-1**

First time labeling, year:  
Erstmalige Kennz., Jahr: **17**

European standard: **EN50575:2014+A1:2016**

Intended use/ Vorgesehene Verwendung:  
Cables for general applications in construction works subject to reaction to fire requirements.  
Kabel und Leitungen für allgemeine Anwendungen in Bauwerken in Bezug auf die Anforderungen an das Brandverhalten.

React. to fire/ Brandverhalten: **Cca-s2-d2-a1**  
Hazardous substances/ gefährliche Stoffe: **NPD**

|   | Productname           |
|---|-----------------------|
| 1 | ÖLFLEX® CLASSIC 100 H |
| 2 | ÖLFLEX® CLASSIC 110 H |
| 3 | ÖLFLEX® HEAT 125 MC   |

## Article number – Table

| Lapp Art. No. | Description                 | Number cores, Cross-Sect. mm², G: with Protect. core |   |     | Declar.o.Perform. Reaction-to-fire |
|---------------|-----------------------------|------------------------------------------------------|---|-----|------------------------------------|
| 0014150       | ÖLFLEX® CLASSIC 100 H 2X1.5 | 2                                                    | X | 1.5 | Cca-s2-d2-a1                       |
| 0014151       | ÖLFLEX® CLASSIC 100 H 3G1.5 | 3                                                    | G | 1.5 | Cca-s2-d2-a1                       |
| 0014152       | ÖLFLEX® CLASSIC 100 H 4G1.5 | 4                                                    | G | 1.5 | Cca-s2-d2-a1                       |
| 0014153       | ÖLFLEX® CLASSIC 100 H 5G1.5 | 5                                                    | G | 1.5 | Cca-s2-d2-a1                       |
| 0014156       | ÖLFLEX® CLASSIC 100 H 2X2.5 | 2                                                    | X | 2.5 | Cca-s2-d2-a1                       |
| 0014157       | ÖLFLEX® CLASSIC 100 H 3G2.5 | 3                                                    | G | 2.5 | Cca-s2-d2-a1                       |



## ÖLFLEX® CLASSIC 100 H

Halogen-free power and control cable, oil resistant and very flexible

### Info

- CPR: Article number choice under [www.lappkabel.com/cpr](http://www.lappkabel.com/cpr)



### Benefits

- Easy handling and installation due to very flexible cable type
- Wide application range due to excellent product features

### Application range

- Public buildings like airports or railway stations
- 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
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

### 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 61034-2
- Oil-resistant according to EN 50363-4-1 (TM5) and UL OIL RES I and UL OIL RES II
- Ozone-resistant according to EN 50396

### Norm references / Approvals

- Based on IEC 60227-5 and EN 50525-2-51
- Based on EN 50525-3-11

### Product Make-up

- 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

|  |                                                                                                                    |
|--|--------------------------------------------------------------------------------------------------------------------|
|  | <b>Classification</b><br>ETIM 5.0 Class-ID: EC001578<br>ETIM 5.0 Class-Description:<br>Flexible cable              |
|  | <b>Core identification code</b><br>Colours according to VDE 0293-308                                               |
|  | <b>Conductor stranding</b><br>Fine wire according to VDE 0295, class 5/IEC 60228 class 5                           |
|  | <b>Torsion movement in WTG</b><br>TW-0 & TW-2, refer to Appendix T0                                                |
|  | <b>Minimum bending radius</b><br>Occasional flexing: 15 x outer diameter<br>Fixed installation: 4 x outer diameter |
|  | <b>Nominal voltage</b><br>U0/U: 450/750 VAC<br>In protected and fixed installations:<br>U0/U: 600/1000 V           |
|  | <b>Test voltage</b><br>4000 V                                                                                      |
|  | <b>Protective conductor</b><br>G = with GN-YE protective conductor<br>X = without protective conductor             |
|  | <b>Temperature range</b><br>Occasional flexing: -30°C to +70°C<br>Fixed installation: -40°C to +80°C               |

| Article number               | Number of cores and mm <sup>2</sup> per conductor | Outer diameter (mm) | Copper index (kg/km) | Weight (kg/km) |
|------------------------------|---------------------------------------------------|---------------------|----------------------|----------------|
| <b>ÖLFLEX® CLASSIC 100 H</b> |                                                   |                     |                      |                |
| 0014150                      | 2 X 1.5                                           | 7.6                 | 28.8                 | 91             |
| 0014151                      | 3 G 1.5                                           | 8.3                 | 43.2                 | 114            |
| 0014152                      | 4 G 1.5                                           | 9.0                 | 57.6                 | 140            |
| 0014153                      | 5 G 1.5                                           | 10.1                | 72                   | 176            |
| 0014156                      | 2 X 2.5                                           | 9.0                 | 48                   | 133            |
| 0014157                      | 3 G 2.5                                           | 9.7                 | 72                   | 167            |
| 0014158                      | 4 G 2.5                                           | 10.8                | 96                   | 207            |
| 0014159                      | 5 G 2.5                                           | 11.9                | 120                  | 260            |
| 0014162                      | 3 G 4                                             | 11.4                | 115.2                | 240            |
| 0014163                      | 4 G 4                                             | 12.7                | 153.6                | 303            |
| 0014164                      | 5 G 4                                             | 13.9                | 192                  | 372            |
| 0014166                      | 3 G 6                                             | 12.7                | 172.8                | 320            |
| 0014167                      | 4 G 6                                             | 13.9                | 230.4                | 400            |
| 0014168                      | 5 G 6                                             | 15.8                | 288                  | 510            |
| 0014170                      | 4 G 10                                            | 17.9                | 384                  | 662            |
| 0014171                      | 5 G 10                                            | 19.9                | 480                  | 826            |
| 0014173                      | 4 G 16                                            | 20.7                | 614.4                | 957            |
| 0014174                      | 5 G 16                                            | 23.0                | 768                  | 1193           |
| 0014176                      | 4 G 25                                            | 25.4                | 960                  | 1480           |
| 0014177                      | 5 G 25                                            | 28.5                | 1200                 | 1860           |
| 0014179                      | 4 G 35                                            | 28.8                | 1344                 | 1985           |
| 0014180                      | 5 G 35                                            | 32.3                | 1680                 | 2490           |
| 0014182                      | 4 G 50                                            | 35.0                | 1920                 | 2830           |
| 0014184                      | 4 G 70                                            | 40.0                | 2688                 | 3890           |
| 0014186                      | 4 G 95                                            | 46.0                | 3648                 | 5110           |
| 0014188                      | 4 G 120                                           | 51.0                | 4608                 | 6315           |

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

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

Please find our standard lengths at: [www.lappkabel.de/en/cable-standardlengths](http://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® HEAT 125 MC
- ÖLFLEX® CLASSIC 130 H BK 0,6/1 kV

### Accessories

- SKINTOP® ST-HF-M



## ÖLFLEX® SERVO 719

Low capacitance servo cable with PVC outer sheath for static use - certified for North America

LAPP KABEL STUTTGART ÖLFLEX® SERVO 719 CE



### Info

- Successor of ÖLFLEX® SERVO 700
- Low-capacitance design

### Benefits

- One common cable for multiple circuits
- Longer installation lengths thanks to low capacitance cable design
- Multi-standard certification reduces part varieties and saves costs
- Space and weight-saving installation due to small cable diameters

### Application range

- Connecting cable between servo controller and motor
- For fixed installation and applications with occasional movements
- Plant construction
- Industrial machinery and machine tools
- Printing machines

### Product features

- Low capacitance
- Flame retardance:  
UL/CSA: VW-1, FT1  
IEC/EN: 60332-1-2
- Oil-resistant

### Norm references / approvals

- USA: UL AWM Style 2570  
Canada: cUL AWM Style I/II A/B FT1
- UL File No. E63634

### Design

- Fine-wire, bare copper conductor
- Core insulation: Polypropylene (PP)
- Individual design depending on the item:  
Power cores without or with one or two individually shielded control core pairs twisted together in short lay lengths
- PVC sheath, black (RAL 9005)

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC000104  
ETIM 5.0 Class-Description:  
Control cable



#### Core identification code

Power cores: black with marking  
U/L1/C/L+; V/L2; W/L3/D /L-; GN/YE  
protective conductor  
Single-paired versions: black; white  
Double-paired versions: black with  
white numbers 5; 6; 7; 8  
0.34 mm<sup>2</sup> pairs: WH/BN/GN/YE



#### Conductor design

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

Power cores and control cores:  
IEC U<sub>0</sub>/U: 600/1000 V  
UL & CSA: 1000 V



#### Test voltage

Core/Core: 4 kV  
Core/Shield: 4 kV



#### Protective conductor

G = with GN-YE protective conductor



#### Temperature range

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

| Article number           | Number of cores and mm <sup>2</sup> per conductor | Outer diameter (mm) approx. | Copper index (kg/km) | Weight (kg/km) |
|--------------------------|---------------------------------------------------|-----------------------------|----------------------|----------------|
| <b>ÖLFLEX® SERVO 719</b> |                                                   |                             |                      |                |
| 1020060                  | 4 G 1,5 + (2 x 0,75)                              | 9.7                         | 83                   | 177            |
| 1020065                  | 4 G 1,5 + (2 x 1,5)                               | 10.8                        | 108                  | 214            |
| 1020061                  | 5 G 1,5 + (2 x 0,75)                              | 10.6                        | 98                   | 203            |
| 1020062                  | 7 G 1,5 + (2 x 0,75)                              | 11.5                        | 127                  | 241            |
| 1020063                  | 4 G 2,5 + (2 x 0,75)                              | 11.1                        | 122                  | 238            |
| 1020066                  | 4 G 2,5 + (2 x 1,5)                               | 12.2                        | 147                  | 276            |
| 1020064                  | 7 G 2,5 + (2 x 0,75)                              | 12.7                        | 194                  | 325            |
| 1020067                  | 4 G 4 + (2 x 1,5)                                 | 13.9                        | 204                  | 360            |
| 1020068                  | 4 G 6 + (2 x 1,5)                                 | 16.1                        | 281                  | 478            |
| 1020069                  | 4 G 10 + (2 x 1,5)                                | 18.2                        | 435                  | 654            |
| 1020071                  | 4 G 0,75 + 2 x (2 x 0,34)                         | 9.0                         | 62                   | 121            |
| 1020072                  | 4 G 1,5 + 2 x (2 x 0,75)                          | 11.6                        | 112                  | 203            |
| 1020073                  | 4 G 2,5 + 2 x (2 x 1,0)                           | 13.6                        | 160                  | 286            |
| 1020074                  | 4 G 4 + 2 x (2 x 1,0)                             | 15.3                        | 217                  | 377            |
| 1020075                  | 4 G 4 + (2 x 1,0) + (2 x 1,5)                     | 15.5                        | 238                  | 396            |
| 1020076                  | 4 G 6 + (2 x 1,0) + (2 x 1,5)                     | 17.4                        | 314                  | 512            |

Unless otherwise specified, the product values shown are nominal values. You can receive further values, such as tolerances, upon request if they are available and have been released for publication.

Copper price basis: EUR 150/100 kg; see catalogue 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](http://www.lappkabel.de/en/cable-standardlengths)

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

### Similar products

- ÖLFLEX® SERVO 719 CY refer to page 13

### Accessories

- EPIC® POWER LS1
- SKINTOP® ST-M



## ÖLFLEX® SERVO 719 CY

Shielded, low capacitive servo cable with PVC sheath for fixed installation - certified for North America



### Info

- Successor of ÖLFLEX® SERVO 700 CY and ÖLFLEX® SERVO 709 CY
- Low-capacitance design
- EMC-compliant

LAPP KABEL STUTTGART ÖLFLEX® SERVO 719 CY DESINA, CE



### Benefits

- Suitable for use with servomotor systems from leading drive manufacturers
- Longer installation lengths thanks to low capacitance cable design
- Multi-standard certification reduces part varieties and saves costs
- Space and weight-saving installation due to small cable diameters
- Copper braiding complies with EMC requirements and screens the cable against electromagnetic interference

### Application range

- Connecting cable between servo controller and motor
- For fixed installation and applications with occasional movements
- Plant construction
- Industrial machinery and machine tools
- Printing machines

### Product features

- Low capacitance
- Flame retardance:  
UL/CSA: VW-1, FT1  
IEC/EN: 60332-1-2
- Oil-resistant
- EMC-compliant

### Norm references / approvals

- USA: UL AWM Style 2570  
Canada: cUL AWM Style I/II A/B FT1
- UL File No. E63634

### Design

- Fine-wire, bare copper conductor
- Core insulation: Polypropylene (PP)
- Individual design depending on the item:  
Power cores without or with one or two individually shielded control core pairs twisted together in short lay lengths;  
Power cores with control core triplet twisted together in short lay lengths
- Tin-plated copper braiding
- PVC sheath, orange (RAL 2003)

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC000104  
ETIM 5.0 Class-Description: Control cable



#### Core identification code

Power cores: black with marking U/L1/C/L+; V/L2; W/L3/D /L-; GN/YE protective conductor  
Single-paired versions: individual design depending on the item black; white or brown; white  
Double-paired versions: black with white numbers 5; 6; 7; 8  
0.34 mm² pairs: WH/BN/GN/YE  
Triplet: black with white numbers 1; 2; 3



#### Conductor design

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

Power cores and control cores:  
IEC U<sub>0</sub>/U: 600/1000 V  
UL & CSA: 1000 V



#### Test voltage

Core/Core: 4 kV  
Core/Shield: 4 kV



#### Protective conductor

G = with GN-YE protective conductor



#### Temperature range

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

| Article number              | Number of cores and mm² per conductor | Outer diameter (mm) approx. | Copper index (kg/km) | Weight (kg/km) |
|-----------------------------|---------------------------------------|-----------------------------|----------------------|----------------|
| <b>ÖLFLEX® SERVO 719 CY</b> |                                       |                             |                      |                |
| 1020010                     | 4 G 1,5                               | 8.4                         | 83                   | 130            |
| 1020011                     | 4 G 2,5                               | 9.9                         | 125                  | 190            |
| 1020012                     | 4 G 4                                 | 11.7                        | 191                  | 273            |
| 1020013                     | 4 G 6                                 | 13.7                        | 290                  | 394            |
| 1020014                     | 4 G 10                                | 16.7                        | 452                  | 581            |
| 1020015                     | 4 G 16                                | 20.1                        | 721                  | 884            |
| 1020016                     | 4 G 25                                | 24.3                        | 1100                 | 1348           |
| 1020017                     | 4 G 35                                | 27.7                        | 1548                 | 1840           |
| 1020018                     | 4 G 50                                | 33.7                        | 2151                 | 2645           |
| 1020040                     | 4 G 0,75 + (2 x 0,5)                  | 8.9                         | 78                   | 159            |
| 1020041                     | 4 G 1 + (2 x 0,5)                     | 9.3                         | 88                   | 147            |
| 1020044                     | 4 G 1 + (2 x 1,0)                     | 10.2                        | 107                  | 204            |
| 1020042                     | 4 G 1,5 + (2 x 0,5)                   | 10.3                        | 111                  | 180            |
| 1020045                     | 4 G 1,5 + (2 x 1,0)                   | 10.8                        | 130                  | 230            |
| 1020053                     | 4 G 1,5 + (3 x 1,0)                   | 11.5                        | 145                  | 225            |
| 1020019                     | 4 G 1,5 + (2 x 1,5)                   | 11.5                        | 146                  | 242            |
| 1020043                     | 4 G 2,5 + (2 x 0,5)                   | 11.7                        | 158                  | 247            |
| 1020046                     | 4 G 2,5 + (2 x 1,0)                   | 12.1                        | 173                  | 293            |
| 1020054                     | 4 G 2,5 + (3 x 1,0)                   | 12.9                        | 188                  | 290            |
| 1020020                     | 4 G 2,5 + (2 x 1,5)                   | 12.9                        | 189                  | 306            |
| 1020047                     | 4 G 4 + (2 x 1,0)                     | 14.3                        | 250                  | 373            |
| 1020055                     | 4 G 4 + (3 x 1,0)                     | 14.8                        | 270                  | 402            |
| 1020021                     | 4 G 4 + (2 x 1,5)                     | 15.0                        | 271                  | 420            |

| Article number | Number of cores and mm <sup>2</sup> per conductor | Outer diameter (mm) approx. | Copper index (kg/km) | Weight (kg/km) |
|----------------|---------------------------------------------------|-----------------------------|----------------------|----------------|
| 1020048        | 4 G 6 + (2 x 1,0)                                 | 16.0                        | 334                  | 485            |
| 1020022        | 4 G 6 + (2 x 1,5)                                 | 17.0                        | 351                  | 529            |
| 1020056        | 4 G 6 + (3 x 1,5)                                 | 17.0                        | 370                  | 537            |
| 1020049        | 4 G 10 + (2 x 1,0)                                | 18.8                        | 526                  | 712            |
| 1020023        | 4 G 10 + (2 x 1,5)                                | 19.5                        | 540                  | 752            |
| 1020057        | 4 G 10 + (3 x 1,5)                                | 19.5                        | 559                  | 758            |
| 1020050        | 4 G 16 + (2 x 1,0)                                | 22.3                        | 772                  | 991            |
| 1020058        | 4 G 16 + (3 x 1,5)                                | 23.0                        | 805                  | 1151           |
| 1020024        | 4 G 0,75 + 2 x (2 x 0,34)                         | 9.7                         | 99                   | 163            |
| 1020035        | 4 G 1 + 2 x (2 x 0,75)                            | 11.3                        | 126.4                | 207            |
| 1020025        | 4 G 1,5 + 2 x (2 x 0,75)                          | 12.3                        | 150                  | 245            |
| 1020026        | 4 G 2,5 + 2 x (2 x 1,0)                           | 14.7                        | 223                  | 357            |
| 1020027        | 4 G 4 + 2 x (2 x 1,0)                             | 16.4                        | 288                  | 452            |
| 1020028        | 4 G 4 + (2 x 1,0) + (2 x 1,5)                     | 16.6                        | 307                  | 469            |
| 1020029        | 4 G 6 + (2 x 1,0) + (2 x 1,5)                     | 18.5                        | 421                  | 617            |
| 1020030        | 4 G 10 + (2 x 1,0) + (2 x 1,5)                    | 22.1                        | 588                  | 852            |
| 1020031        | 4 G 16 + 2 x (2 x 1,5)                            | 25.0                        | 876                  | 1162           |
| 1020032        | 4 G 25 + 2 x (2 x 1,5)                            | 28.7                        | 1227                 | 1590           |
| 1020033        | 4 G 35 + 2 x (2 x 1,5)                            | 30.6                        | 1652                 | 2023           |
| 1020034        | 4 G 50 + 2 x (2 x 2,5)                            | 37.0                        | 2264                 | 2876           |

Unless otherwise specified, the product values shown are nominal values. You can receive further values, such as tolerances, upon request if they are available and have been released for publication.

Copper price basis: EUR 150/100 kg; see catalogue 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](http://www.lappkabel.de/en/cable-standardlengths)

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

#### Accessories

- EPIC® POWER LS1
- SKINTOP® MS-M BRUSH
- SKINTOP® MS-HF-M BRUSH



## ÖLFLEX® VFD 2XL

Multi-listed, flexible VFD cable

ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

SILVYN®

FLEXIMARK®

ACCESSORIES



### Info

- Suitable for inverter drives of various manufacturers
- Wide application range (NFPA 70/NEC)/compliance with NFPA 79 for industrial machinery
- EMC-compliant

### Benefits

- Reduced insulation wall thickness, therefore a space-saving installation
- Multi-standard certification reduces part varieties and saves costs
- Cost-saving, easy installation due to omission of closed cable systems (suitable for open wiring)
- Longer cable connection possible between converter and drive due to low capacitance design
- UL TC-ER and c(UL) CIC/TC approval

### Application range

- Connecting cable between frequency converter and motor
- For fixed installation and applications with occasional movements
- Areas at risk of explosion (class 1 division 2) in accordance with NEC articles 336, 501
- Plant construction
- Industrial machinery and machine tools

### Product features

- Oil-resistant according to UL OIL RES I & II
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- 90°C Wet or Dry; -40°C Cold Bend; -25°C Cold Impact
- Sunlight resistant (UV-resistant); direct burial (can be buried in the ground according to US standards)



### Norm references / approvals

- UL TC-ER (exposed run) according to UL 1277
- Class 1 division 2 in accordance with NEC art. 336, 501
- Flexible motor supply cable according to UL
- c(UL) CIC/TC FT4; cRU AWM I/II A/B FT4
- CE (50V - 1kV)

### Design

- Fine-wire, tin-plated copper conductor
- Core insulation: XLPE
- Aluminium-coated foil
- Screening braid made of tin-plated copper wires
- Outer sheath: Specially designed thermoplastic elastomer (TPE), black

### Technical data

|  |                                                                                                                                                             |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Classification</b><br>ETIM 5.0 Class-ID: EC000057<br>ETIM 5.0 Class-Description:<br>Power cable                                                          |
|  | <b>Core identification code</b><br>Black with white numbers                                                                                                 |
|  | <b>Certifications</b><br>USA: UL TC-ER, WTTTC, Flexible Motor Supply<br>Canada: c(UL) CIC/TC FT4, cRU AWM I/II A/B FT4                                      |
|  | <b>Conductor design</b><br>Fine wire                                                                                                                        |
|  | <b>Minimum bending radius</b><br>Occasional flexing: 15 x outer diameter<br>Fixed installation: 7.5 x outer diameter                                        |
|  | <b>Nominal voltage</b><br>UL TC: 600V/2000V<br>UL Flexible Motor Supply: 1000V<br>c(UL) CIC/TC: 600V<br>cRU AWM: 1000V<br>IEC U <sub>0</sub> /U: 600/1000 V |
|  | <b>Test voltage</b><br>6000 V                                                                                                                               |
|  | <b>Protective conductor</b><br>G = with GN-YE protective conductor                                                                                          |
|  | <b>Temperature range</b><br>Occasional flexing: -25°C to +90°C<br>Fixed installation: -40°C to +90°C                                                        |

| Article number         | Number of cores and mm <sup>2</sup> /AWG sizes per conductor | Outer diameter [mm] | Copper index (kg/km) | Weight (kg/km) |
|------------------------|--------------------------------------------------------------|---------------------|----------------------|----------------|
| <b>ÖLFLEX® VFD 2XL</b> |                                                              |                     |                      |                |
| 700700                 | 4 G 1,5                                                      | 12.9                | 104                  | 238            |
| 700701                 | 4 G 2,5                                                      | 14.8                | 149                  | 292            |
| 700702                 | 4 G 4                                                        | 16.7                | 214                  | 384            |
| 700703                 | 4 G 6                                                        | 18.0                | 296                  | 476            |
| 700704                 | 4 G 10                                                       | 22.5                | 443                  | 856            |
| 700705                 | 4 G 16                                                       | 25.9                | 771                  | 1317           |
| 700706                 | 4 G 4AWG                                                     | 29.4                | 955                  | 1570           |
| 700707                 | 4 G 2AWG                                                     | 33.8                | 1458                 | 2173           |

Unless otherwise specified, the product values shown are nominal values. You can receive further values, such as tolerances, upon request if they are available and have been released for publication.

Copper price basis: EUR 150/100 kg; see catalogue 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](http://www.lappkabel.de/en/cable-standardlengths)

Packaging: Ring ≤ 30 kg or ≤ 250 m, otherwise drum

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

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

### Similar products

- ÖLFLEX® SERVO 719 CY refer to page 13
- ÖLFLEX® TRAY II CY

### Accessories

- SKINTOP® BRUSH ADD-ON
- SKINTOP® MS-SC-M
- SKINTOP® MS-M BRUSH



## ÖLFLEX® VFD 2XL with Signal

Multi-listed, flexible VFD cable with a pair for brake or temperature sensor

LAPP KABEL STUTTGART ÖLFLEX® VFD 2XL WITH SIGNAL



### Info

- Suitable for inverter drives of various manufacturers
- Wide application range (NFPA 70/NEC)/ compliance with NFPA 79 for industrial machinery
- EMC-compliant

### Benefits

- One common cable for multiple circuits
- Multi-standard certification reduces part varieties and saves costs
- Cost-saving, easy installation due to omission of closed cable systems (suitable for open wiring)
- Longer cable connection possible between converter and drive due to low capacitance design
- UL TC-ER and c(UL) CIC/TC approval

### Application range

- Connecting cable between frequency converter and motor
- For fixed installation and applications with occasional movements
- Areas at risk of explosion (class 1 division 2) in accordance with NEC articles 336, 501
- Plant construction
- Industrial machinery and machine tools

### Product features

- Oil-resistant according to UL OIL RES I & II
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- 90°C Wet or Dry; -40°C Cold Bend; -25°C Cold Impact
- Sunlight resistant (UV-resistant); direct burial (can be buried in the ground according to US standards)

### Norm references / approvals

- UL TC-ER (exposed run) according to UL 1277
- Class 1 division 2 in accordance with NEC art. 336, 501
- Flexible motor supply cable according to UL
- c(UL) CIC/TC FT4; cRU AWM I/II A/B FT4
- CE (50V - 1kV)

### Design

- Fine-wire, tin-plated copper conductor
- Core insulation: XLPE
- Control pair with laminated aluminium film and tin-plated drain wire
- Barrier tape
- Aluminium-coated foil
- Tin-plated copper braiding with drain wire
- Outer sheath: Specially designed thermoplastic elastomer (TPE), black

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC000057  
ETIM 5.0 Class-Description:  
Power cable



#### Core identification code

Black with white numbers



#### Certifications

USA: UL TC-ER, WTTCC, Flexible Motor Supply  
Canada: c(UL) CIC/TC FT4,  
cRU AWM I/II A/B FT4



#### Conductor design

Fine wire



#### Minimum bending radius

Occasional flexing: 15 x outer diameter  
Fixed installation: 7.5 x outer diameter



#### Nominal voltage

UL TC: 600V/2000V  
UL Flexible Motor Supply: 1000V  
c(UL) CIC/TC: 600V  
cRU AWM: 1000V  
IEC U<sub>0</sub>/U: 600/1000 V



#### Test voltage

6000 V



#### Protective conductor

G = with GN-YE protective conductor



#### Temperature range

Occasional flexing: -25°C to +90°C  
Fixed installation: -40°C to +90°C

| Article number                     | Number of cores and mm <sup>2</sup> /AWG sizes per conductor | Outer diameter [mm] | Copper index (kg/km) | Weight (kg/km) |
|------------------------------------|--------------------------------------------------------------|---------------------|----------------------|----------------|
| <b>ÖLFLEX® VFD 2XL with Signal</b> |                                                              |                     |                      |                |
| 700710                             | 4 G 1,5 + (2 x 1,0)                                          | 16.6                | 135                  | 298            |
| 700711                             | 4 G 2,5 + (2 x 1,0)                                          | 17.4                | 196                  | 375            |
| 700712                             | 4 G 4 + (2 x 1,0)                                            | 19.1                | 238                  | 438            |
| 700713                             | 4 G 6 + (2 x 1,0)                                            | 20.3                | 320                  | 527            |
| 700714                             | 4 G 10 + (2 x 2,5)                                           | 25.0                | 497                  | 1027           |
| 700715                             | 4 G 16 + (2 x 2,5)                                           | 28.2                | 750                  | 1347           |
| 700716                             | 4 G 4AWG + (2 x 2,5)                                         | 32.0                | 993                  | 1674           |
| 700717                             | 4 G 2AWG + (2 x 2,5)                                         | 35.6                | 1528                 | 2351           |

Unless otherwise specified, the product values shown are nominal values. You can receive further values, such as tolerances, upon request if they are available and have been released for publication.

Copper price basis: EUR 150/100 kg; see catalogue 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](http://www.lappkabel.de/en/cable-standardlengths)

Packaging: Ring ≤ 30 kg or ≤ 250 m, otherwise drum

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

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

### Similar products

- ÖLFLEX® SERVO 719 CY refer to page 13
- ÖLFLEX® TRAY II CY

### Accessories

- SKINTOP® BRUSH ADD-ON
- SKINTOP® MS-SC-M
- SKINTOP® MS-M BRUSH



## ÖLFLEX® SOLAR XLWP

Electron beam cross-linked solar cables with improved performance in water - EN 50618 type

**Info**

- Optimised cable design - constant high contact resistance even after a long period in water
- H1Z2Z2-K (type according to EN 50618)
- Replaces previous ÖLFLEX® SOLAR XLR WP



### Benefits

- The alternative for long-term storage in water, e.g. as may be the case after flooding or in buried conduits
- Reduction of flame propagation and of toxic gases in the event of fire
- Robust against mechanical impacts
- Extruded colour stripe serves as reverse polarity protection during installation
- Exact quantity control during installation by meter marking on the cable sheath

### Application range

- For underground installation in protective pipes, in which water, heat and moisture can accumulate
- For floating PV / canal top installations where cables are in contact with water or exposed to high humidity (see data sheet for more details)
- Gable and flat roof photovoltaic systems
- Photovoltaic and solar parks
- Suitable for direct burial: see data sheet

### Product features

- Weather-/UV-resistant according to EN 50618, appendix E
- Ozone-resistant according to EN 50396
- Halogen-free and flame-retardant
- Good notch and abrasion resistance
- XLWP = X-Linked Water-Proof
- Proven electron beam cross-linked quality

### Norm references / approvals

- H1Z2Z2-K (type according to EN 50618)
- Versions with other cross-sections on request

### Design

- Fine-wire, tin-plated copper conductor
- Core insulation made of electron beam cross-linked copolymer
- Core colour: white
- Outer sheath made of electron beam cross-linked copolymer
- Outer sheath colour: black or black with red stripe

### Technical data

**Classification**  
 ETIM 5.0 Class-ID: EC001578  
 ETIM 5.0 Class-Description:  
 Flexible cable

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

**Minimum bending radius**  
 Fixed installation: 4 x outer diameter

**Nominal voltage**  
 AC  $U_0/U$ : 1.0/1.0 kV  
 DC  $U_0/U$ : 1.5/1.5 kV  
 Max. permissible operating voltage:  
 DC 1.8 kV

**Test voltage**  
 AC 6500 V

**Current load capacity**  
 In compliance with EN 50618, table A.3

**Temperature range**  
 -40°C to +120°C max. conductor temperature based on EN 60216-1  
 Ambient temperature range according to EN 50618: -40°C to +90°C

| Article number                                                      | Conductor cross-section (mm²) | Outer diameter [mm] | Copper index (kg/km) | Weight (kg/km) |
|---------------------------------------------------------------------|-------------------------------|---------------------|----------------------|----------------|
| <b>ÖLFLEX® SOLAR XLWP</b>                                           |                               |                     |                      |                |
| <b>Core insulation: white / outer sheath: black</b>                 |                               |                     |                      |                |
| 1023601                                                             | 4.0                           | 5.8                 | 38                   | 68             |
| 1023602                                                             | 6.0                           | 6.4                 | 58                   | 92             |
| 1023603                                                             | 10.0                          | 7.6                 | 96                   | 139            |
| 1023604                                                             | 16.0                          | 9.1                 | 154                  | 210            |
| <b>Core insulation: white / outer sheath: black with red stripe</b> |                               |                     |                      |                |
| 1023621                                                             | 4.0                           | 5.8                 | 38                   | 68             |
| 1023622                                                             | 6.0                           | 6.4                 | 58                   | 92             |
| 1023623                                                             | 10.0                          | 7.6                 | 96                   | 139            |
| 1023624                                                             | 16.0                          | 9.1                 | 154                  | 210            |

Unless otherwise specified, the product values shown are nominal values. You can receive further values, such as tolerances, upon request if they available and have been released for publication.

Copper price basis: EUR 150/100 kg; see catalogue 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](http://www.lappkabel.de/en/cable-standardlengths)

Packaging: Ring 100 m; drum (500; 1000) m

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

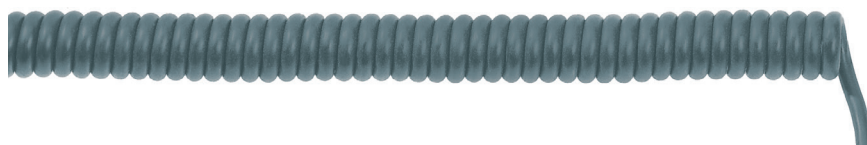
### Accessories

- Kabelschere mit Doppelschneide refer to page 51
- EPIC® SOLAR 4 M
- EPIC® SOLAR 4 F
- UNIVERSAL STRIP stripping tool
- KS 20 cable shears



## UNITRONIC® SPIRAL LiF2Y11Y

Spiral cable with PUR outer sheath for exact impulse transmission, unshielded



### Info

- New: the unshielded spiral cable with small cross-sections
- High recoiling forces
- PUR outer sheath

### Benefits

- Extended lengths of up to 4 times the unextended spiral length
- Suitable for transportable machines and appliances
- Transmission of control and measuring signals

### Application range

- For electronic industry requirements
- In measurement, regulation and control engineering
- Handling and measurement equipment
- Conveyor and transport systems

### Product features

- Abrasion-resistant, cut-resistant
- Very high flexibility
- Halogen-free and flame-retardant

### Design

- Conductor made of bare copper wires
- Polyolefin-based core insulation
- Outer sheath: Polyurethane (PUR) compound
- Outer sheath colour: grey
- Lengths of the straight ends:  
1st end 200 mm, 2nd end 600 mm
- Versions without the mandatory LAPP designation, but with other block lengths, end lengths and end forms available on request

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC000247  
ETIM 5.0 Class-Description:  
Helical cable



#### Core identification code

DIN 47100



#### Peak operating voltage

250 V (not for power applications)



#### Conductor design

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



#### Test voltage

1200 V



#### Temperature range

Flexing: -5°C to +50°C

| Article number                    | Number of cores and mm <sup>2</sup> per conductor | Spiral length, extended max. (mm) | Spiral length, unextended (mm) | Cable diameter (mm) | Spiral outer diameter (mm) |
|-----------------------------------|---------------------------------------------------|-----------------------------------|--------------------------------|---------------------|----------------------------|
| <b>UNITRONIC® SPIRAL LiF2Y11Y</b> |                                                   |                                   |                                |                     |                            |
| 73220300                          | 2 x 0.14                                          | 400                               | 100                            | 3.4                 | 14                         |
| 73220301                          | 2 x 0.14                                          | 800                               | 200                            | 3.4                 | 14                         |
| 73220302                          | 2 x 0.14                                          | 1200                              | 300                            | 3.4                 | 14                         |
| 73220303                          | 2 x 0.14                                          | 1600                              | 400                            | 3.4                 | 14                         |
| 73220304                          | 2 x 0.14                                          | 2000                              | 500                            | 3.4                 | 14                         |
| 73220305                          | 3 x 0.14                                          | 400                               | 100                            | 3.9                 | 15                         |
| 73220306                          | 3 x 0.14                                          | 800                               | 200                            | 3.9                 | 15                         |
| 73220307                          | 3 x 0.14                                          | 1200                              | 300                            | 3.9                 | 15                         |
| 73220308                          | 3 x 0.14                                          | 1600                              | 400                            | 3.9                 | 15                         |
| 73220309                          | 3 x 0.14                                          | 2000                              | 500                            | 3.9                 | 15                         |
| 73220310                          | 4 x 0.14                                          | 400                               | 100                            | 4.2                 | 17                         |
| 73220311                          | 4 x 0.14                                          | 800                               | 200                            | 4.2                 | 17                         |
| 73220312                          | 4 x 0.14                                          | 1200                              | 300                            | 4.2                 | 17                         |
| 73220313                          | 4 x 0.14                                          | 1600                              | 400                            | 4.2                 | 17                         |
| 73220314                          | 4 x 0.14                                          | 2000                              | 500                            | 4.2                 | 17                         |
| 73220315                          | 5 x 0.14                                          | 400                               | 100                            | 4.5                 | 19                         |
| 73220316                          | 5 x 0.14                                          | 800                               | 200                            | 4.5                 | 19                         |
| 73220317                          | 5 x 0.14                                          | 1200                              | 300                            | 4.5                 | 19                         |
| 73220318                          | 5 x 0.14                                          | 1600                              | 400                            | 4.5                 | 19                         |
| 73220319                          | 5 x 0.14                                          | 2000                              | 500                            | 4.5                 | 19                         |
| 73220320                          | 6 x 0.14                                          | 400                               | 100                            | 4.8                 | 19                         |
| 73220321                          | 6 x 0.14                                          | 800                               | 200                            | 4.8                 | 19                         |
| 73220322                          | 6 x 0.14                                          | 1200                              | 300                            | 4.8                 | 19                         |
| 73220323                          | 6 x 0.14                                          | 1600                              | 400                            | 4.8                 | 19                         |
| 73220324                          | 6 x 0.14                                          | 2000                              | 500                            | 4.8                 | 19                         |
| 73220325                          | 7 x 0.14                                          | 400                               | 100                            | 5.1                 | 20                         |
| 73220326                          | 7 x 0.14                                          | 800                               | 200                            | 5.1                 | 20                         |
| 73220327                          | 7 x 0.14                                          | 1200                              | 300                            | 5.1                 | 20                         |
| 73220328                          | 7 x 0.14                                          | 1600                              | 400                            | 5.1                 | 20                         |
| 73220329                          | 7 x 0.14                                          | 2000                              | 500                            | 5.1                 | 20                         |
| 73220330                          | 12 x 0.14                                         | 400                               | 100                            | 5.9                 | 21                         |
| 73220331                          | 12 x 0.14                                         | 800                               | 200                            | 5.9                 | 21                         |
| 73220332                          | 12 x 0.14                                         | 1200                              | 300                            | 5.9                 | 21                         |
| 73220333                          | 12 x 0.14                                         | 1600                              | 400                            | 5.9                 | 21                         |
| 73220334                          | 12 x 0.14                                         | 2000                              | 500                            | 5.9                 | 21                         |
| 73220335                          | 18 x 0.14                                         | 400                               | 100                            | 6.8                 | 27                         |
| 73220336                          | 18 x 0.14                                         | 800                               | 200                            | 6.8                 | 27                         |
| 73220337                          | 18 x 0.14                                         | 1200                              | 300                            | 6.8                 | 27                         |
| 73220338                          | 18 x 0.14                                         | 1600                              | 400                            | 6.8                 | 27                         |
| 73220339                          | 18 x 0.14                                         | 2000                              | 500                            | 6.8                 | 27                         |
| 73220340                          | 2 x 0.25                                          | 400                               | 100                            | 4.3                 | 18                         |
| 73220341                          | 2 x 0.25                                          | 800                               | 200                            | 4.3                 | 18                         |
| 73220342                          | 2 x 0.25                                          | 1200                              | 300                            | 4.3                 | 18                         |

| Article number | Number of cores and mm <sup>2</sup> per conductor | Spiral length, extended max. (mm) | Spiral length, unextended (mm) | Cable diameter (mm) | Spiral outer diameter (mm) |
|----------------|---------------------------------------------------|-----------------------------------|--------------------------------|---------------------|----------------------------|
| 73220343       | 2 x 0.25                                          | 1600                              | 400                            | 4.3                 | 18                         |
| 73220344       | 2 x 0.25                                          | 2000                              | 500                            | 4.3                 | 18                         |
| 73220345       | 3 x 0.25                                          | 400                               | 100                            | 4.5                 | 19                         |
| 73220346       | 3 x 0.25                                          | 800                               | 200                            | 4.5                 | 19                         |
| 73220347       | 3 x 0.25                                          | 1200                              | 300                            | 4.5                 | 19                         |
| 73220348       | 3 x 0.25                                          | 1600                              | 400                            | 4.5                 | 19                         |
| 73220349       | 3 x 0.25                                          | 2000                              | 500                            | 4.5                 | 19                         |
| 73220350       | 4 x 0.25                                          | 400                               | 100                            | 4.9                 | 20                         |
| 73220351       | 4 x 0.25                                          | 800                               | 200                            | 4.9                 | 20                         |
| 73220352       | 4 x 0.25                                          | 1200                              | 300                            | 4.9                 | 20                         |
| 73220353       | 4 x 0.25                                          | 1600                              | 400                            | 4.9                 | 20                         |
| 73220354       | 4 x 0.25                                          | 2000                              | 500                            | 4.9                 | 20                         |
| 73220355       | 5 x 0.25                                          | 400                               | 100                            | 5.3                 | 20                         |
| 73220356       | 5 x 0.25                                          | 800                               | 200                            | 5.3                 | 20                         |
| 73220357       | 5 x 0.25                                          | 1200                              | 300                            | 5.3                 | 20                         |
| 73220358       | 5 x 0.25                                          | 1600                              | 400                            | 5.3                 | 20                         |
| 73220359       | 5 x 0.25                                          | 2000                              | 500                            | 5.3                 | 20                         |
| 73220360       | 6 x 0.25                                          | 400                               | 100                            | 5.4                 | 20                         |
| 73220361       | 6 x 0.25                                          | 800                               | 200                            | 5.4                 | 20                         |
| 73220362       | 6 x 0.25                                          | 1200                              | 300                            | 5.4                 | 20                         |
| 73220363       | 6 x 0.25                                          | 1600                              | 400                            | 5.4                 | 20                         |
| 73220364       | 6 x 0.25                                          | 2000                              | 500                            | 5.4                 | 20                         |
| 73220365       | 7 x 0.25                                          | 400                               | 100                            | 6.1                 | 21                         |
| 73220366       | 7 x 0.25                                          | 800                               | 200                            | 6.1                 | 21                         |
| 73220367       | 7 x 0.25                                          | 1200                              | 300                            | 6.1                 | 21                         |
| 73220368       | 7 x 0.25                                          | 1600                              | 400                            | 6.1                 | 21                         |
| 73220369       | 7 x 0.25                                          | 2000                              | 500                            | 6.1                 | 21                         |
| 73220370       | 12 x 0.25                                         | 400                               | 100                            | 6.7                 | 25                         |
| 73220371       | 12 x 0.25                                         | 800                               | 200                            | 6.7                 | 25                         |
| 73220372       | 12 x 0.25                                         | 1200                              | 300                            | 6.7                 | 25                         |
| 73220373       | 12 x 0.25                                         | 1600                              | 400                            | 6.7                 | 25                         |
| 73220374       | 12 x 0.25                                         | 2000                              | 500                            | 6.7                 | 25                         |
| 73220375       | 18 x 0.25                                         | 400                               | 100                            | 8.5                 | 31                         |
| 73220376       | 18 x 0.25                                         | 800                               | 200                            | 8.5                 | 31                         |
| 73220377       | 18 x 0.25                                         | 1200                              | 300                            | 8.5                 | 31                         |
| 73220378       | 18 x 0.25                                         | 1600                              | 400                            | 8.5                 | 31                         |
| 73220379       | 18 x 0.25                                         | 2000                              | 500                            | 8.5                 | 31                         |

Unless otherwise specified, the product values shown are nominal values. You can receive further values, such as tolerances, upon request if they are available and have been released for publication.

Copper price basis: EUR 150/100 kg; see catalogue appendix T17 for the application and definition of "Metal price basis" and "Metal index"

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

Versions without the mandatory LAPP designation, but with other block lengths, end lengths and end forms available on request

#### Accessories

- SKINTOP® CLICK

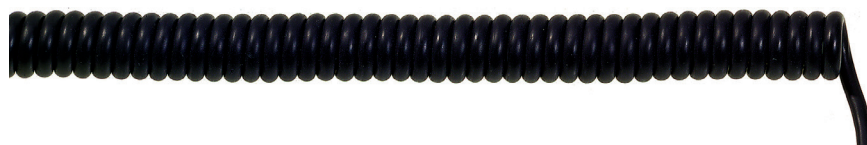
# Power and control cables

ÖLFLEX® CONNECT system solutions • Spiralled



## UNITRONIC® SPIRAL

Spiral cable with PUR outer sheath and overall shielding for exact impulse transmission



### Info

- Secure against electrical interferences
- PUR outer sheath
- New: Now available in cross-section 0.25 mm<sup>2</sup>

### Benefits

- Overall shielding prevents high frequency interference and guarantees accurate impulse transmission
- Extended lengths of up to 4 times the unextended spiral length

### Application range

- In measurement, regulation and control engineering
- When shielded cables with smallest dimensions are required
- For electronic industry requirements
- Handling and measurement equipment
- Conveyor and transport systems

### Product features

- Abrasion-resistant, cut-resistant
- Very high flexibility

### Design

- Conductor made of bare copper wires
- PVC-based core insulation
- Screening with copper wrapping
- Outer sheath: Polyurethane (PUR) compound
- Outer sheath colour: Black
- Lengths of the straight ends:  
1st end 200 mm, 2nd end 600 mm
- Versions without the mandatory LAPP designation, but with other block lengths, end lengths and end forms available on request

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC000247  
ETIM 5.0 Class-Description:  
Helical cable



#### Core identification code

DIN 47100



#### Peak operating voltage

250 V (not for power applications)



#### Conductor design

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



#### Test voltage

1200 V



#### Temperature range

Flexing: -5°C to +50°C

| Article number           | Number of cores and mm <sup>2</sup> per conductor | Spiral length, extended max. (mm) | Spiral length, unextended (mm) | Cable diameter (mm) | Spiral outer diameter (mm) |
|--------------------------|---------------------------------------------------|-----------------------------------|--------------------------------|---------------------|----------------------------|
| <b>UNITRONIC® SPIRAL</b> |                                                   |                                   |                                |                     |                            |
| 73220200                 | 2 x 0.14                                          | 400                               | 100                            | 4.1                 | 15                         |
| 73220201                 | 2 x 0.14                                          | 800                               | 200                            | 4.1                 | 15                         |
| 73220202                 | 2 x 0.14                                          | 1200                              | 300                            | 4.1                 | 15                         |
| 73220203                 | 2 x 0.14                                          | 1600                              | 400                            | 4.1                 | 15                         |
| 73220204                 | 2 x 0.14                                          | 2000                              | 500                            | 4.1                 | 15                         |
| 73220205                 | 3 x 0.14                                          | 400                               | 100                            | 4.3                 | 18                         |
| 73220206                 | 3 x 0.14                                          | 800                               | 200                            | 4.3                 | 18                         |
| 73220207                 | 3 x 0.14                                          | 1200                              | 300                            | 4.3                 | 18                         |
| 73220208                 | 3 x 0.14                                          | 1600                              | 400                            | 4.3                 | 18                         |
| 73220209                 | 3 x 0.14                                          | 2000                              | 500                            | 4.3                 | 18                         |
| 73220210                 | 4 x 0.14                                          | 400                               | 100                            | 4.5                 | 19                         |
| 73220211                 | 4 x 0.14                                          | 800                               | 200                            | 4.5                 | 19                         |
| 73220212                 | 4 x 0.14                                          | 1200                              | 300                            | 4.5                 | 19                         |
| 73220213                 | 4 x 0.14                                          | 1600                              | 400                            | 4.5                 | 19                         |
| 73220214                 | 4 x 0.14                                          | 2000                              | 500                            | 4.5                 | 19                         |
| 73220215                 | 5 x 0.14                                          | 400                               | 100                            | 4.8                 | 20                         |
| 73220216                 | 5 x 0.14                                          | 800                               | 200                            | 4.8                 | 20                         |
| 73220217                 | 5 x 0.14                                          | 1200                              | 300                            | 4.8                 | 20                         |
| 73220218                 | 5 x 0.14                                          | 1600                              | 400                            | 4.8                 | 20                         |
| 73220219                 | 5 x 0.14                                          | 2000                              | 500                            | 4.8                 | 20                         |
| 73220220                 | 6 x 0.14                                          | 400                               | 100                            | 5.5                 | 21                         |
| 73220221                 | 6 x 0.14                                          | 800                               | 200                            | 5.5                 | 21                         |
| 73220222                 | 6 x 0.14                                          | 1200                              | 300                            | 5.5                 | 21                         |
| 73220223                 | 6 x 0.14                                          | 1600                              | 400                            | 5.5                 | 21                         |
| 73220224                 | 6 x 0.14                                          | 2000                              | 500                            | 5.5                 | 21                         |
| 73220225                 | 7 x 0.14                                          | 400                               | 100                            | 5.9                 | 23                         |
| 73220226                 | 7 x 0.14                                          | 800                               | 200                            | 5.9                 | 23                         |
| 73220227                 | 7 x 0.14                                          | 1200                              | 300                            | 5.9                 | 23                         |
| 73220228                 | 7 x 0.14                                          | 1600                              | 400                            | 5.9                 | 23                         |
| 73220229                 | 7 x 0.14                                          | 2000                              | 500                            | 5.9                 | 23                         |
| 73220230                 | 12 x 0.14                                         | 400                               | 100                            | 7.2                 | 28                         |
| 73220231                 | 12 x 0.14                                         | 800                               | 200                            | 7.2                 | 28                         |
| 73220232                 | 12 x 0.14                                         | 1200                              | 300                            | 7.2                 | 28                         |
| 73220233                 | 12 x 0.14                                         | 1600                              | 400                            | 7.2                 | 28                         |
| 73220234                 | 12 x 0.14                                         | 2000                              | 500                            | 7.2                 | 28                         |
| 73220235                 | 18 x 0.14                                         | 400                               | 100                            | 8                   | 29                         |
| 73220236                 | 18 x 0.14                                         | 800                               | 200                            | 8                   | 29                         |
| 73220237                 | 18 x 0.14                                         | 1200                              | 300                            | 8                   | 29                         |
| 73220238                 | 18 x 0.14                                         | 1600                              | 400                            | 8                   | 29                         |
| 73220239                 | 18 x 0.14                                         | 2000                              | 500                            | 8                   | 29                         |
| 73220240                 | 2 x 0.25                                          | 400                               | 100                            | 4.7                 | 18                         |
| 73220241                 | 2 x 0.25                                          | 800                               | 200                            | 4.7                 | 18                         |
| 73220242                 | 2 x 0.25                                          | 1200                              | 300                            | 4.7                 | 18                         |
| 73220243                 | 2 x 0.25                                          | 1600                              | 400                            | 4.7                 | 18                         |

| Article number | Number of cores and mm <sup>2</sup> per conductor | Spiral length, extended max. (mm) | Spiral length, unextended (mm) | Cable diameter (mm) | Spiral outer diameter (mm) |
|----------------|---------------------------------------------------|-----------------------------------|--------------------------------|---------------------|----------------------------|
| 73220244       | 2 x 0.25                                          | 2000                              | 500                            | 4.7                 | 18                         |
| 73220245       | 3 x 0.25                                          | 400                               | 100                            | 5.3                 | 19                         |
| 73220246       | 3 x 0.25                                          | 800                               | 200                            | 5.3                 | 19                         |
| 73220247       | 3 x 0.25                                          | 1200                              | 300                            | 5.3                 | 19                         |
| 73220248       | 3 x 0.25                                          | 1600                              | 400                            | 5.3                 | 19                         |
| 73220249       | 3 x 0.25                                          | 2000                              | 500                            | 5.3                 | 19                         |
| 73220250       | 4 x 0.25                                          | 400                               | 100                            | 5.6                 | 20                         |
| 73220251       | 4 x 0.25                                          | 800                               | 200                            | 5.6                 | 20                         |
| 73220252       | 4 x 0.25                                          | 1200                              | 300                            | 5.6                 | 20                         |
| 73220253       | 4 x 0.25                                          | 1600                              | 400                            | 5.6                 | 20                         |
| 73220254       | 4 x 0.25                                          | 2000                              | 500                            | 5.6                 | 20                         |
| 73220255       | 5 x 0.25                                          | 400                               | 100                            | 6                   | 21                         |
| 73220256       | 5 x 0.25                                          | 800                               | 200                            | 6                   | 21                         |
| 73220257       | 5 x 0.25                                          | 1200                              | 300                            | 6                   | 21                         |
| 73220258       | 5 x 0.25                                          | 1600                              | 400                            | 6                   | 21                         |
| 73220259       | 5 x 0.25                                          | 2000                              | 500                            | 6                   | 21                         |
| 73220260       | 6 x 0.25                                          | 400                               | 100                            | 6.8                 | 25                         |
| 73220261       | 6 x 0.25                                          | 800                               | 200                            | 6.8                 | 25                         |
| 73220262       | 6 x 0.25                                          | 1200                              | 300                            | 6.8                 | 25                         |
| 73220263       | 6 x 0.25                                          | 1600                              | 400                            | 6.8                 | 25                         |
| 73220264       | 6 x 0.25                                          | 2000                              | 500                            | 6.8                 | 25                         |
| 73220265       | 7 x 0.25                                          | 400                               | 100                            | 7.3                 | 26                         |
| 73220266       | 7 x 0.25                                          | 800                               | 200                            | 7.3                 | 26                         |
| 73220267       | 7 x 0.25                                          | 1200                              | 300                            | 7.3                 | 26                         |
| 73220268       | 7 x 0.25                                          | 1600                              | 400                            | 7.3                 | 26                         |
| 73220269       | 7 x 0.25                                          | 2000                              | 500                            | 7.3                 | 26                         |
| 73220270       | 12 x 0.25                                         | 400                               | 100                            | 8.4                 | 30                         |
| 73220271       | 12 x 0.25                                         | 800                               | 200                            | 8.4                 | 30                         |
| 73220272       | 12 x 0.25                                         | 1200                              | 300                            | 8.4                 | 30                         |
| 73220273       | 12 x 0.25                                         | 1600                              | 400                            | 8.4                 | 30                         |
| 73220274       | 12 x 0.25                                         | 2000                              | 500                            | 8.4                 | 30                         |
| 73220275       | 18 x 0.25                                         | 400                               | 100                            | 9.5                 | 31                         |
| 73220276       | 18 x 0.25                                         | 800                               | 200                            | 9.5                 | 31                         |
| 73220277       | 18 x 0.25                                         | 1200                              | 300                            | 9.5                 | 31                         |
| 73220278       | 18 x 0.25                                         | 1600                              | 400                            | 9.5                 | 31                         |
| 73220279       | 18 x 0.25                                         | 2000                              | 500                            | 9.5                 | 31                         |

Unless otherwise specified, the product values shown are nominal values. You can receive further values, such as tolerances, upon request if they are available and have been released for publication.

Copper price basis: EUR 150/100 kg; see catalogue appendix T17 for the application and definition of "Metal price basis" and "Metal index"

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

Versions without the mandatory LAPP designation, but with other block lengths, end lengths and end forms available on request

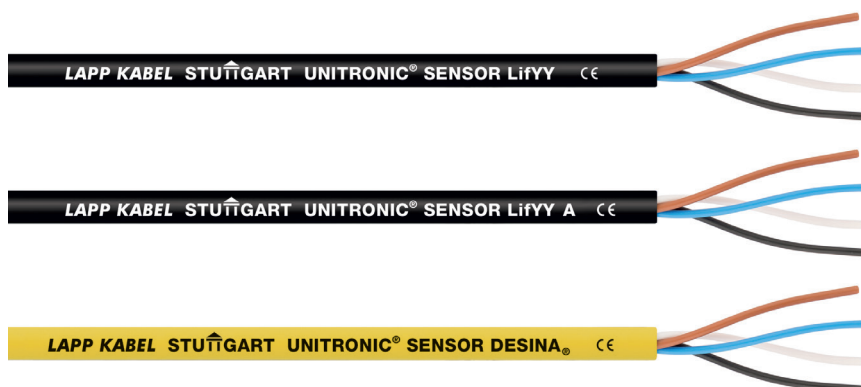
#### Accessories

- SKINTOP® CLICK



## UNITRONIC® SENSOR

Flexible cable for sensor/actuator cabling



### Info

- Good processability

### Benefits

- Easy stripping and processing
- Space-saving due to compact dimensions

### Application range

- Automation technology
- Sensor/actuator cabling
- For medium mechanical stress in dry conditions

### Product features

- Core colour code in accordance with DIN EN 50044
- Black version: UV-resistant
- PWIS-free
- Partly oil- and chemical-resistant

### Norm references / approvals

- LifYY A: UL-Style 2464

### Design

- Extra-fine wire strand made of bare copper wires
- Core insulation: PVC
- Core colours:
  - 3-pin: bn, bu, bk
  - 4-pin: bn, wh, bu, bk
  - 5-pin: bn, wh, bu, bk, gy
- DESINA® 4x0.34: bn, wh, bu, bk
- Outer sheath: PVC or PUR
- Sheath colour: black (RAL 9005)
- DESINA® yellow (RAL 1021)

### Suitable tools

- SENSOR STRIP stripping tool

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC001578  
ETIM 5.0 Class-Description:  
Flexible cable



#### Peak operating voltage

300 V (not for power applications)



#### Conductor design

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



#### Minimum bending radius

Flexing: 15 x outer diameter  
Fixed installation: 8 x outer diameter



#### Temperature range

PVC/PVC:  
Fixed installation: -40°C to +80°C  
Flexing: -5°C to +80°C  
PVC/PUR:  
Fixed installation: -30°C to +80°C  
Flexing: -10°C to +80°C

| Article number                   | Article designation | Dimensions (mm²) | Outer diameter [mm] | Core/outer sheath material | Colour | UL  | Copper index [kg/km] |
|----------------------------------|---------------------|------------------|---------------------|----------------------------|--------|-----|----------------------|
| <b>UNITRONIC® SENSOR PVC</b>     |                     |                  |                     |                            |        |     |                      |
| 7038898                          | LifYY               | 3x0.25           | 3.8                 | PVC/PVC                    | black  |     | 7.5                  |
| 7038899                          | LifYY               | 4x0.25           | 4.2                 | PVC/PVC                    | black  |     | 10.2                 |
| 7038900                          | LifYY               | 3 x 0.34         | 4.1                 | PVC/PVC                    | black  |     | 9.8                  |
| 7038901                          | LifYY               | 4 x 0.34         | 4.4                 | PVC/PVC                    | black  |     | 13                   |
| 7038902                          | LifYY               | 5 x 0.34         | 4.8                 | PVC/PVC                    | black  |     | 16                   |
| <b>UNITRONIC® SENSOR PVC UL</b>  |                     |                  |                     |                            |        |     |                      |
| 7038903                          | LifYY A             | 3x0.25           | 4.3                 | PVC/PVC                    | black  | yes | 7.5                  |
| 7038904                          | LifYY A             | 4x0.25           | 4.6                 | PVC/PVC                    | black  | yes | 10.2                 |
| 7038905                          | LifYY A             | 3 x 0.34         | 4.4                 | PVC/PVC                    | black  | yes | 9.8                  |
| 7038906                          | LifYY A             | 4 x 0.34         | 4.8                 | PVC/PVC                    | black  | yes | 13                   |
| 7038907                          | LifYY A             | 5 x 0.34         | 5.2                 | PVC/PVC                    | black  | yes | 16                   |
| <b>UNITRONIC® SENSOR PVC/PUR</b> |                     |                  |                     |                            |        |     |                      |
| 7038861                          | LifY 11Y            | 4 x 0.34         | 4.8                 | PVC/PUR                    | black  |     | 13.1                 |
| 7038862                          | LifY 11Y            | 5 x 0.25         | 4.9                 | PVC/PUR                    | black  |     | 12                   |
| 0040434                          | DESINA              | 4 x 0.34         | 5.2                 | PVC/PUR                    | yellow |     | 13.5                 |

Unless otherwise specified, the product values shown are nominal values. You can receive further values, such as tolerances, upon request if they are available and have been released for publication.

Copper price basis: EUR 150/100 kg; see catalogue 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](http://www.lappkabel.de/en/cable-standardlengths)

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

### Accessories

- EPIC® SENSOR M12
- EPIC® SENSOR M12 V4A
- EPIC® SENSOR M8



## UNITRONIC® BUS HEAT 6722



### Info

- Designed according to ISO 6722
- Tested according to ECE-R 118.01

### Benefits

- Twisted-quad strand, thus lower space requirement and weight
- Extended temperature range
- Good resistance to oil, petrol, acids and alkalis

### Application range

- Connection cable for wiring camera systems, passenger infotainment systems, ticketing systems
- For fixed, occasionally flexible and protected use inside of utility vehicles

### Product features

- Halogen-free outer sheath
- Maximum bit rate: 1 Mbit/s for 40 m Bus length
- Temperature class B on the basis of ISO 6722-1
- ISO 11898 makes recommendations for the segment length, cable cross-section and bit rate
- Flame-retardant according to IEC 60332-1-2

### Norm references / approvals

- Standardised internationally in ISO 11898
- UL/CSA type CMX (UL 444)

### Design

- Bare stranded wire
- PUR outer sheath
- Colour: black
- UV-resistant (colour may change over time)
- Screening with copper wrapping



### Technical data

|  |                                                                                                |
|--|------------------------------------------------------------------------------------------------|
|  | <b>Classification</b><br>ETIM 5.0 Class-ID: EC000830<br>ETIM 5.0 Class-Description: Data cable |
|  | <b>Operating capacitance</b><br>40 nF/km (800 Hz)                                              |
|  | <b>Peak operating voltage</b><br>250 V (not for power applications)                            |
|  | <b>Conductor resistance</b><br>(loop): max. 159.8 ohm/km                                       |
|  | <b>Minimum bending radius</b><br>Flexing: 15 x outer diameter                                  |
|  | <b>Test voltage</b><br>Core/Core: 1500 V eff.                                                  |
|  | <b>Characteristic impedance</b><br>120 ohm                                                     |
|  | <b>Temperature range</b><br>Fixed installation: -40°C to +105°C<br>Flexing: -30°C to +105°C    |

| Article number                  | Article designation               | Number of cores and mm² per conductor | Outer diameter [mm] | Copper index [kg/km] | Weight [kg/km] |
|---------------------------------|-----------------------------------|---------------------------------------|---------------------|----------------------|----------------|
| <b>UNITRONIC® BUS HEAT 6722</b> |                                   |                                       |                     |                      |                |
| 2170385                         | UNITRONIC® BUS HEAT 6722 1X4X0,25 | 1 x 4 x 0,25                          | 6.45                | 26                   | 46             |
| 2170386                         | UNITRONIC® BUS HEAT 6722 1X4X0,34 | 1 x 4 x 0,34                          | 7.54                | 33                   | 61             |
| 2170387                         | UNITRONIC® BUS HEAT 6722 1X4X0,5  | 1 x 4 x 0,5                           | 8.36                | 41                   | 70             |
| 2170388                         | UNITRONIC® BUS HEAT 6722 1X4X0,75 | 1 x 4 x 0,75                          | 9.79                | 59                   | 95             |

Unless otherwise specified, the product values shown are nominal values. You can receive further values, such as tolerances, upon request if they are available and have been released for publication.

Copper price basis: EUR 150/100 kg; see catalogue 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](http://www.lappkabel.de/en/cable-standardlengths)

Packaging: Ring ≤ 30 kg or ≤ 250 m, otherwise drum

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

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

### Accessories

- SILVYN® CHAIN
- Multipurpose shears A and B
- SMART STRIP stripping tool
- SENSOR STRIP stripping tool

**ETHERLINE® Cat.7 FLEX**

Flexible use

LAPP KABEL STUTTGART ETHERLINE® Cat.7 FLEX 4x2xAWG26/7

**Info**

- Industrial Ethernet cable
- Cat.7 qualified for 10Gbit/s

**Benefits**

- Can be used in dry or damp rooms
- Shielded against interference signals
- Can be used for Industrial Ethernet in harsh industrial environments
- 4-pair: 100 Mbit/s up to 10 Gbit/s for Industrial Ethernet

**Application range**

- Wiring machines, devices, and control cabinets
- Max. cable length for 100 Mbit/s is 60 m  
max. cable length for 10 Gbit/s is 60 m
- Suitable for EtherCAT and EtherNet/IP applications

**Product features**

- PUR outer sheath is highly resistant to mineral oils and abrasion
- Robust, halogen-free outer sheath
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference

**Norm references / approvals**

- Electrical requirements according to IEC 61156-6
- AWM certification for USA and Canada
- UL AWM Style 21576
- Flame-retardant according to IEC 60332-1-2

**Design**

- Braided conductor, bare, 7-wire
- Core insulation made of polyethylene (PE)
- S/FTP: Copper braid as overall shielding and pair screening with aluminium compound foil
- Colour: green (similar to RAL 6018)

**Technical data****Classification**

ETIM 5.0 Class-ID: EC000830  
ETIM 5.0 Class-Description: Data cable

**Peak operating voltage**

(not for power applications)  
125 V

**Minimum bending radius**

Fixed installation: 4 x outer diameter  
Flexing: 10 x outer diameter

**Characteristic impedance**

nom. 100 ohm according to  
IEC 61156-6

**Temperature range**

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

| Article number               | Number of pairs and AWG per conductor | Outer diameter [mm] |
|------------------------------|---------------------------------------|---------------------|
| <b>ETHERLINE® Cat.7 FLEX</b> |                                       |                     |
| 2170934                      | 4x2xAWG26                             | 6.4                 |

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

**Accessories**

- EPIC® DATA AX RJ45 Cat.6A
- EPIC® DATA 90 RJ45 Cat.6A
- EPIC® DATA AX RJ45 Cat.6A IP68
- EPIC® DATA M12X
- EPIC® DATA CCR FA



## ETHERLINE® TORSION Cat.7

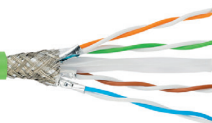
Highly flexible application



## Info

- For Torsion applications ( $\pm 180^\circ$ )
- For PROFINET applications with 4 pairs
- Cat.7 qualified for 10Gbit/s

LAPP KABEL STUTTGART ETHERLINE® TORSION Cat.7 4x2x24/7AWG



## Benefits

- Many applications with Industrial Ethernet, e.g. PROFINET, i.e. fixed installation, flexible use as well as TORSION.
- 4-pair: 100 Mbit/s up to 10 Gbit/s for Industrial Ethernet
- Premium screening against electromagnetic interference
- Can be used for Industrial Ethernet in harsh industrial environments

## Application range

- For industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702
- Wiring machines, devices, and control cabinets
- Max. cable length for 100 Mbit/s is 85 m  
Max. cable length for 10 Gbit/s is 85 m
- Suitable for EtherCAT and EtherNet/IP applications

## Product features

- Halogen-free according to IEC 60754-1
- Oil-resistant according to IEC 60811-2-1
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference
- Cable suitable for high torsion stress.  
Tested with up to 5 million bending cycles and a right/left movement of  $180^\circ$  per metre.

## Norm references / approvals

- Electrical requirements according to IEC 61156-6
- UL/CSA-certified (CMX)
- UL AWM Style 21576
- Flame-retardant according to IEC 60332-1-2

## Design

- 7-wire stranded wire made of tin-plated copper wires
- Core insulation made of polyethylene (PE)
- S/FTP: Copper braid as overall shielding and pair screening with aluminium compound foil
- Colour: green (similar to RAL 6018)

## Technical data



## Classification

ETIM 5.0 Class-ID: EC000830  
ETIM 5.0 Class-Description: Data cable



## Peak operating voltage

(not for power applications)  
125 V



## Minimum bending radius

Fixed installation: 8 x outer diameter  
Flexing: 15 x outer diameter



## Characteristic impedance

nom. 100 ohm according to  
IEC 61156-6



## Temperature range

Fixed installation:  $-40^\circ\text{C}$  to  $+80^\circ\text{C}$   
Flexing:  $-30^\circ\text{C}$  to  $+70^\circ\text{C}$

| Article number                  | Number of pairs and AWG per conductor | Outer diameter [mm] | Copper index (kg/km) |
|---------------------------------|---------------------------------------|---------------------|----------------------|
| <b>ETHERLINE® TORSION Cat.7</b> |                                       |                     |                      |
| 2170481                         | 4x2xAWG24                             | 9.4                 | 44                   |

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

## Accessories

- EPIC® DATA 90 RJ45 Cat.6A
- EPIC® DATA M12X
- EPIC® DATA CCR FA

## Customized Pre-Assembled FO Cable Solutions

**ÖLFLEX® CONNECT – integrated solutions made by Lapp**

Lapp is offering an integrated solution with **ÖLFLEX® CONNECT** – cables assembled exactly to your requirements. Everything is possible – from traditional cable assemblies to industry standard servo connections right up to highly complex drag chain systems. With **ÖLFLEX® CONNECT** Lapp offers as well customized fibre optic system assemblies (FO trunks).

Customers can choose the right cable from the wide range of HITRONIC® fibre optic cables which can be assembled exactly as per customer specification.

By using factory assembled fibre optic cable solutions the installation for industry, telecommunication and office applications are significantly simplified.

Depending on the planning approach, time consuming connector installation or splicing at site can be avoided. Just lay the trunk system and simply plug it in with the factory pre-assembled connectors.

**A plug & play solution from Lapp.**

**Technical benefits**

- No splice connections are necessary during installation. This saves time and costs for equipment and special tooling.
- Low attenuation values by factory preassembled plugs
- Trunk-system are easy to use without any further time consuming on-site processing
- Available with all major cable and connector types (Lapp HITRONIC® range)
- Ready to use fibre optic cabling system
- IP 68 metallic cable unit splitter for glass fibre (GOF) loose tube cables up to 48 fibres

**In a few steps to a customized FO-trunk-system:****1. Determination of the required fibre type**

- POF (980/1000)
- PCF (200/230)
- GOF (single-mode 9/125 OS2)  
(multimode 62,5/125 OM1)  
(multimode 50/125 OM2; OM3; OM4)

**2. Selection of cable type and version**

See HITRONIC® cable range  
(POF, PCF und GOF and number of fibers)

**3. Determination of the system length****4. Connector configuration**

Selection of connector type – side 1 and 2

**5. Cable pulling device**

Selection cable pulling device  
side 1 and/or side 2

**6. Specific requirements**

Regarding packaging and marking

**7. Lapp in-house**

Lapp will check the technical feasibility  
and plausibility (fibre – cable – connector)  
and make a quotation

**8. Easy ordering and fast shipping**

For questions about customized packaging and special issues we are happy to assist you.

**Selection example:****Short designation:**

TRUNK GOF HUN 1500-4E9/125-SC/LC-85m

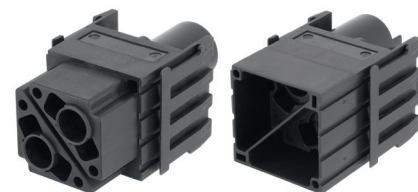
**Description:**

- Customized pre-assembled fibre optic cable solution
- Based on cable version  
HITRONIC® HUN 4E9/125 OS2
- Assembled at both ends with connectors
  - side 1: 2 x SC-duplex connector
  - side 2: 2 x LC-duplex connector
- Cable splitter unit IP68:
  - up to zu 24 fibres
  - M20 through hole
- Side 1 protected with a cable pulling device
  - outer diameter < 30 mm
- System length 85 m
- On disposable drum
- With test protocol



## EPIC® MH 2

High flexibility through any combination of inserts in one connector



## Info

- Modular connector system, pluggable with the market standard
- High power module 2-pin for compact power transmission

## Suitable housing

- EPIC MH 6 R Page 40
- EPIC MH 10 R Page 40
- EPIC MH 16 R Page 40
- EPIC MH 24 R Page 40
- EPIC® H-B housing, use in high version

## Suitable contacts:

- EPIC MH 8.0mm Contacts Page 42

## Benefits

- High power module 2-pin for compact power transmission
- Crimp termination for permanent vibration-proof contact
- EPIC® MH system is pluggable with the market standard
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.

## Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction

## Technical data

|                                                                                   |                                                                                                                              |                                                                                                                                                                         |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Classification</b><br>ETIM 5.0 Class-ID: EC002641<br>ETIM 5.0 Class-Description: Modular connector (industrial connector) | <b>Contact resistance</b><br>< 5 mOhm                                                                                                                                   |
|  | <b>Rated voltage (V)</b><br>1000 V                                                                                           |  <b>Number of contacts</b><br>2                                                      |
|                                                                                   | <b>Rated impulse voltage</b><br>8 kV                                                                                         |  <b>Cable connection</b><br>Crimp termination: 10 mm <sup>2</sup> 35 mm <sup>2</sup> |
|  | <b>Rated current in A</b><br>100 A                                                                                           |  <b>Material</b><br>Polyamide, glass-fibre reinforced                                |
|  | <b>Pollution degree</b><br>3                                                                                                 |  <b>Plug cycles</b><br>500                                                           |
|                                                                                   |                                                                                                                              |  <b>Temperature range</b><br>-40 °C<br>+125 °C                                       |

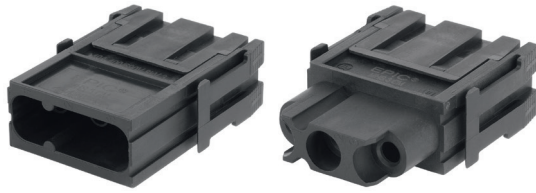
| Article number    | Article description | Contact type | Number of working contacts | Slots | Pieces / PU |
|-------------------|---------------------|--------------|----------------------------|-------|-------------|
| <b>EPIC® MH 2</b> |                     |              |                            |       |             |
| 44423212          | EPIC® MHS 2 CM      | male         | 2                          | 2     | 10          |
| 44423213          | EPIC® MHB 2 CM      | female       | 2                          | 2     | 10          |

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



## EPIC® MH 3

High flexibility through any combination of inserts in one connector



### Info

- Modular connector system, pluggable with the market standard
- Power module 3-pin for compact power transmission

### Suitable housing

- EPIC MH 6 R Page 40
- EPIC MH 10 R Page 40
- EPIC MH 16 R Page 40
- EPIC MH 24 R Page 40
- EPIC® H-B housing, use in high version

### Suitable contacts:

- EPIC MH 4.0mm Contacts Page 43

### Benefits

- Power module 3-pin for compact power transmission
- Crimp termination for permanent vibration-proof contact
- EPIC® MH system is pluggable with the market standard
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.

### Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction

### Technical data

|                                                                                   |                                                                                                     |                                                           |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
|  | <b>Classification</b>                                                                               | <b>Contact resistance</b>                                 |
|                                                                                   | ETIM 5.0 Class-ID: EC002641<br>ETIM 5.0 Class-Description: Modular connector (industrial connector) | < 5 mOhm                                                  |
|  | <b>Rated voltage (V)</b>                                                                            | <b>Number of contacts</b>                                 |
|                                                                                   | 830 V                                                                                               | 3                                                         |
|                                                                                   | <b>Rated impulse voltage</b>                                                                        | <b>Cable connection</b>                                   |
|                                                                                   | 8 kV                                                                                                | Crimp termination: 1.5 mm <sup>2</sup> 10 mm <sup>2</sup> |
|  | <b>Rated current in A</b>                                                                           | <b>Material</b>                                           |
|                                                                                   | 40 A                                                                                                | Polyamide, glass-fibre reinforced                         |
|  | <b>Pollution degree</b>                                                                             | <b>Plug cycles</b>                                        |
|                                                                                   | 3                                                                                                   | 500                                                       |
|                                                                                   |                                                                                                     | <b>Temperature range</b>                                  |
|                                                                                   |                                                                                                     | -40°C<br>+125°C                                           |

| Article number    | Article description | Contact type | Number of working contacts | Slots | Pieces / PU |
|-------------------|---------------------|--------------|----------------------------|-------|-------------|
| <b>EPIC® MH 3</b> |                     |              |                            |       |             |
| 44423214          | EPIC® MHS 3 CM      | male         | 3                          | 1     | 10          |
| 44423215          | EPIC® MHB 3 CM      | female       | 3                          | 1     | 10          |

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



## EPIC® MH 4

High flexibility through any combination of inserts in one connector



## Info

- Modular connector system, pluggable with the market standard
- Power module 4-pin for compact power transmission

## Suitable housing

- EPIC MH 6 R Page 40
- EPIC MH 10 R Page 40
- EPIC MH 16 R Page 40
- EPIC MH 24 R Page 40
- EPIC® H-B housing, use in high version

## Suitable contacts:

- EPIC MH 4.0mm Contacts Page 43

## Benefits

- Power module 4-pin for compact power transmission
- Crimp termination for permanent vibration-proof contact
- EPIC® MH system is pluggable with the market standard
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.

## Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction



## Technical data

|                                                                                    |                                                                                                                              |                                                                                                                                                                          |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <b>Classification</b><br>ETIM 5.0 Class-ID: EC002641<br>ETIM 5.0 Class-Description: Modular connector (industrial connector) | <b>Contact resistance</b><br>< 5 mOhm                                                                                                                                    |
|   | <b>Rated voltage (V)</b><br>830 V                                                                                            |  <b>Number of contacts</b><br>4                                                       |
|                                                                                    | <b>Rated impulse voltage</b><br>8 kV                                                                                         |  <b>Cable connection</b><br>Crimp termination: 1.5 mm <sup>2</sup> 10 mm <sup>2</sup> |
|   | <b>Rated current in A</b><br>40 A                                                                                            |  <b>Material</b><br>Polyamide, glass-fibre reinforced                                 |
|   | <b>Pollution degree</b><br>3                                                                                                 |  <b>Plug cycles</b><br>500                                                            |
|  | <b>Flammability</b><br>UL94 V-0                                                                                              |  <b>Temperature range</b><br>-40 °C<br>+125 °C                                        |

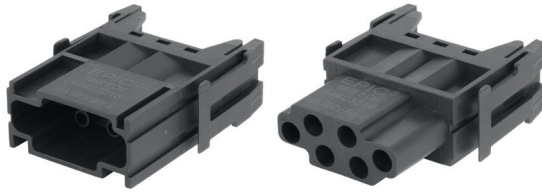
| Article number    | Article description | Contact type | Number of working contacts | Slots | Pieces / PU |
|-------------------|---------------------|--------------|----------------------------|-------|-------------|
| <b>EPIC® MH 4</b> |                     |              |                            |       |             |
| 44423216          | EPIC® MHS 4 CM      | male         | 4                          | 1     | 10          |
| 44423217          | EPIC® MHB 4 CM      | female       | 4                          | 1     | 10          |

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



## EPIC® MH 6

High flexibility through any combination of inserts in one connector



### Info

- Modular connector system, pluggable with the market standard
- Module 6-pin for control signals

### Suitable housing

- EPIC MH 6 R Page 40
- EPIC MH 10 R Page 40
- EPIC MH 16 R Page 40
- EPIC MH 24 R Page 40
- EPIC® H-B housing, use in high version

### Suitable contacts:

- EPIC® H-BE 2.5 machined contacts

### Benefits

- Module 6-pin for control signals
- Crimp termination for permanent vibration-proof contact
- EPIC® MH system is pluggable with the market standard
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.

### Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction

### Technical data

|                                                                                   |                                                                                                                              |                                                                                                                                                  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Classification</b><br>ETIM 5.0 Class-ID: EC002641<br>ETIM 5.0 Class-Description: Modular connector (industrial connector) | <b>Contact resistance</b><br>< 5 mOhm                                                                                                            |
|  | <b>Rated voltage (V)</b><br>500 V                                                                                            |  <b>Number of contacts</b><br>6                               |
|                                                                                   | <b>Rated impulse voltage</b><br>6 kV                                                                                         |  <b>Cable connection</b><br>Crimp termination: 0.14 - 4.0 mm² |
|  | <b>Rated current in A</b><br>16 A                                                                                            |  <b>Material</b><br>Polyamide, glass-fibre reinforced         |
|  | <b>Pollution degree</b><br>3                                                                                                 |  <b>Plug cycles</b><br>500                                    |
|                                                                                   |                                                                                                                              |  <b>Temperature range</b><br>-40°C<br>+125°C                  |

| Article number    | Article description | Contact type | Number of working contacts | Slots | Pieces / PU |
|-------------------|---------------------|--------------|----------------------------|-------|-------------|
| <b>EPIC® MH 6</b> |                     |              |                            |       |             |
| 44423218          | EPIC® MHS 6 CM      | male         | 6                          | 1     | 10          |
| 44423219          | EPIC® MHB 6 CM      | female       | 6                          | 1     | 10          |

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



## EPIC® MH 8

High flexibility through any combination of inserts in one connector



## Info

- Modular connector system, pluggable with the market standard
- Module 8-pin for control signals

## Suitable housing

- EPIC MH 6 R Page 40
- EPIC MH 10 R Page 40
- EPIC MH 16 R Page 40
- EPIC MH 24 R Page 40
- EPIC® H-B housing, use in high version

## Suitable contacts:

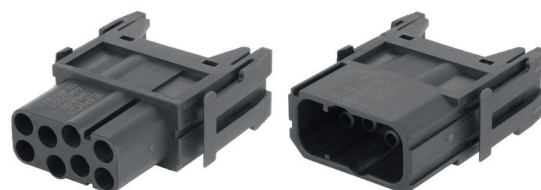
- EPIC® H-BE 2.5 machined contacts ]

## Benefits

- Module 8-pin for control signals
- Crimp termination for permanent vibration-proof contact
- EPIC® MH system is pluggable with the market standard
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.

## Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction



## Technical data

|                                                                                   |                                                                                                                              |                                                                                                                                                              |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Classification</b><br>ETIM 5.0 Class-ID: EC002641<br>ETIM 5.0 Class-Description: Modular connector (industrial connector) | <b>Contact resistance</b><br>< 5 mOhm                                                                                                                        |
|  | <b>Rated voltage (V)</b><br>400 V                                                                                            |  <b>Number of contacts</b><br>8                                           |
|                                                                                   | <b>Rated impulse voltage</b><br>6 kV                                                                                         |  <b>Cable connection</b><br>Crimp termination: 0.14 - 4.0 mm <sup>2</sup> |
|  | <b>Rated current in A</b><br>16 A                                                                                            |  <b>Material</b><br>Polyamide, glass-fibre reinforced                     |
|  | <b>Pollution degree</b><br>3                                                                                                 |  <b>Plug cycles</b><br>500                                                |
|                                                                                   |                                                                                                                              |  <b>Temperature range</b><br>-40 °C<br>+125 °C                            |

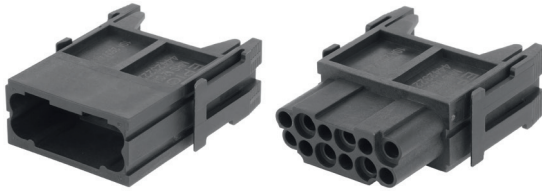
| Article number    | Article description | Contact type | Number of working contacts | Slots | Pieces / PU |
|-------------------|---------------------|--------------|----------------------------|-------|-------------|
| <b>EPIC® MH 8</b> |                     |              |                            |       |             |
| 44423220          | EPIC® MHS 8 CM      | male         | 8                          | 1     | 10          |
| 44423221          | EPIC® MHB 8 CM      | female       | 8                          | 1     | 10          |

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



## EPIC® MH 12

High flexibility through any combination of inserts in one connector



### Info

- Modular connector system, pluggable with the market standard
- Module 12-pin for control signals

### Suitable housing

- EPIC MH 6 R Page 40
- EPIC MH 10 R Page 40
- EPIC MH 16 R Page 40
- EPIC MH 24 R Page 40
- EPIC® H-B housing, use in high version

### Suitable contacts:

- EPIC® H-D 1.6 machined contacts

### Benefits

- Module 12-pin for control signals
- Crimp termination for permanent vibration-proof contact
- EPIC® MH system is pluggable with the market standard
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.

### Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC002641  
ETIM 5.0 Class-Description: Modular connector (industrial connector)



**Rated voltage (V)**  
250 V

**Rated impulse voltage**  
4 kV



**Rated current in A**  
10 A



**Pollution degree**  
3

#### Contact resistance

< 5 mOhm



**Number of contacts**  
12



#### Cable connection

Crimp termination: 0.14 2.5 mm²



#### Material

Polyamide, glass-fibre reinforced



#### Plug cycles

500



#### Temperature range

-40°C  
+125°C

| Article number     | Article description | Contact type | Number of working contacts | Slots | Pieces / PU |
|--------------------|---------------------|--------------|----------------------------|-------|-------------|
| <b>EPIC® MH 12</b> |                     |              |                            |       |             |
| 44423222           | EPIC® MHS 12 CM     | male         | 12                         | 1     | 10          |
| 44423223           | EPIC® MHB 12 CM     | female       | 12                         | 1     | 10          |

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



## EPIC® MH 17

High flexibility through any combination of inserts in one connector



## Info

- Modular connector system, pluggable with the market standard
- Universal module for 17 contacts in the smallest space

## Suitable housing

- EPIC MH 6 R Page 40
- EPIC MH 10 R Page 40
- EPIC MH 16 R Page 40
- EPIC MH 24 R Page 40
- EPIC® H-B housing, use in high version

## Suitable contacts:

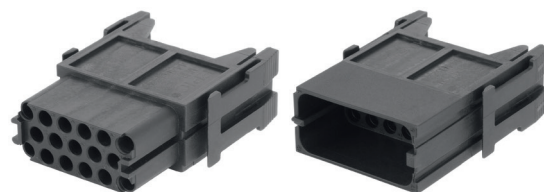
- EPIC® H-D 1.6 machined contacts

## Benefits

- Universal module for 17 contacts in the smallest space
- Crimp termination for permanent vibration-proof contact
- EPIC® MH system is pluggable with the market standard
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.

## Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction



## Technical data



## Classification

ETIM 5.0 Class-ID: EC002641  
ETIM 5.0 Class-Description: Modular connector (industrial connector)



## Rated voltage (V)

160 V

## Rated impulse voltage

2.5 kV



## Rated current in A

10 A



## Pollution degree

3

## Contact resistance

&lt; 5 mOhm



## Number of contacts

17



## Cable connection

Crimp termination: 0.14 2.5 mm<sup>2</sup>

## Material

Polyamide, glass-fibre reinforced



## Plug cycles

500



## Temperature range

-40 °C  
+125 °C

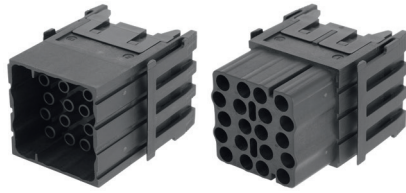
| Article number     | Article description | Contact type | Number of working contacts | Slots | Pieces / PU |
|--------------------|---------------------|--------------|----------------------------|-------|-------------|
| <b>EPIC® MH 17</b> |                     |              |                            |       |             |
| 44423224           | EPIC® MHS 17 CM     | male         | 17                         | 1     | 10          |
| 44423225           | EPIC® MHB 17 CM     | female       | 17                         | 1     | 10          |

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



## EPIC® MH 20

High flexibility through any combination of inserts in one connector



### Info

- Modular connector system, pluggable with the market standard
- Double module 20-pin for control signals

### Suitable housing

- EPIC MH 6 R Page 40
- EPIC MH 10 R Page 40
- EPIC MH 16 R Page 40
- EPIC MH 24 R Page 40
- EPIC® H-B housing, use in high version

### Suitable contacts:

- EPIC® H-BE 2.5 machined contacts

### Benefits

- Double module 20-pin for control signals
- Crimp termination for permanent vibration-proof contact
- EPIC® MH system is pluggable with the market standard
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.

### Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC002641  
ETIM 5.0 Class-Description: Modular connector (industrial connector)



**Rated voltage (V)**  
500 V

**Rated impulse voltage**  
6 kV



**Rated current in A**  
16 A



**Pollution degree**  
3

#### Contact resistance

< 5 mOhm



**Number of contacts**  
20



**Cable connection**  
Crimp termination: 0.14 - 4.0 mm²



**Material**  
Polyamide, glass-fibre reinforced



**Plug cycles**  
500



**Temperature range**  
-40°C  
+125°C

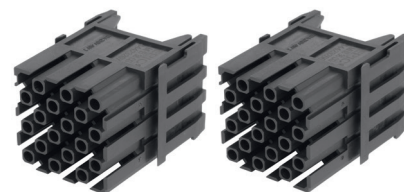
| Article number     | Article description | Contact type | Number of working contacts | Slots | Pieces / PU |
|--------------------|---------------------|--------------|----------------------------|-------|-------------|
| <b>EPIC® MH 20</b> |                     |              |                            |       |             |
| 44423226           | EPIC® MHS 20 CM     | male         | 20                         | 2     | 10          |
| 44423227           | EPIC® MHB 20 CM     | female       | 20                         | 2     | 10          |

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



## EPIC® MH 36

High flexibility through any combination of inserts in one connector



## Info

- Modular connector system, pluggable with the market standard
- Double module for 36 contacts in the smallest space

## Suitable housing

- EPIC MH 6 R Page 40
- EPIC MH 10 R Page 40
- EPIC MH 16 R Page 40
- EPIC MH 24 R Page 40
- EPIC® H-B housing, use in high version

## Suitable contacts:

- EPIC® H-D 1.6 machined contacts

## Benefits

- Double module for 36 contacts in the smallest space
- Crimp termination for permanent vibration-proof contact
- EPIC® MH system is pluggable with the market standard
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.

## Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction

## Technical data



## Classification

ETIM 5.0 Class-ID: EC002641  
ETIM 5.0 Class-Description: Modular connector (industrial connector)



## Rated voltage (V)

250 V

## Rated impulse voltage

4 kV



## Rated current in A

10 A



## Pollution degree

3

## Contact resistance

&lt; 5 mOhm



## Number of contacts

36



## Cable connection

Crimp termination: 0.14 2.5 mm<sup>2</sup>

## Material

Polyamide, glass-fibre reinforced



## Plug cycles

500



## Temperature range

-40 °C  
+125 °C

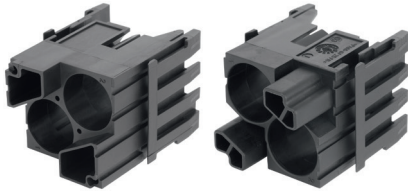
| Article number     | Article description | Contact type | Number of working contacts | Slots | Pieces / PU |
|--------------------|---------------------|--------------|----------------------------|-------|-------------|
| <b>EPIC® MH 36</b> |                     |              |                            |       |             |
| 44423266           | EPIC® MHS 36 CM     | male         | 36                         | 2     | 10          |
| 44423267           | EPIC® MHB 36 CM     | female       | 36                         | 2     | 10          |

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



## EPIC® MH Bus

High flexibility through any combination of inserts in one connector



### Info

- Modular connector system, pluggable with the market standard
- Shielded module for data and signal transmission

## EPIC® MH Bus PIN 1x(4) contact holder

High flexibility through any combination of inserts in one connector



### Info

- Modular connector system, pluggable with the market standard
- Shielded module for data and signal transmission

### Suitable housing

#### EPIC® MH Bus

- EPIC MH 6 R Page 40
- EPIC MH 10 R Page 40
- EPIC MH 16 R Page 40
- EPIC MH 24 R Page 40
- EPIC® H-B housing, use in high version

### Suitable contacts:

#### EPIC® MH Bus

- EPIC® H-D 1.6 machined contacts
- EPIC MH Bus PIN 1x(4) Page 36
- EPIC MH Coax 1.6mm Page 37
- EPIC MH Coax 2.5mm Page 37

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC002641  
ETIM 5.0 Class-Description: Modular connector (industrial connector)



#### Rated voltage (V)

50

#### Rated impulse voltage

0.8 kV



#### Rated current in A

10



#### Pollution degree

3



#### EPIC® MH Bus PIN 1x(4) contact holder

4



#### Cable connection

Crimp termination: 0.14 2.5 mm<sup>2</sup>



#### Material

PA



#### Plug cycles

500



#### Temperature range

-40°C  
+125°C

### Benefits

- Shielded module for data and signal transmission
- EPIC® MH system is pluggable with the market standard
- Crimp termination for permanent vibration-proof contact
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.

### Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction

| Article number                               | Article description        | Contact type | Number of working contacts | Slots | Pieces / PU |
|----------------------------------------------|----------------------------|--------------|----------------------------|-------|-------------|
| <b>EPIC® MH Bus</b>                          |                            |              |                            |       |             |
| 44423228                                     | EPIC® MHS Bus              | male         | 2                          | 2     | 10          |
| 44423230                                     | EPIC® MHB Bus              | female       | 2                          | 2     | 10          |
| <b>EPIC® MH Bus PIN 1x(4) contact holder</b> |                            |              |                            |       |             |
| 44423229                                     | EPIC® MHS Bus PIN 1x(4) CM | male         | 4 + shield                 |       | 10          |
| 44423231                                     | EPIC® MHB Bus PIN 1x(4) CM | female       | 4 + shield                 |       | 10          |

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



## EPIC® MH Coax 1.6mm

The mixed assembly guarantees high flexibility. For applications in mechanical and plant engineering, for printing machines and rack technology.



## EPIC® MH Coax 2.5mm

The mixed assembly guarantees high flexibility. For applications in mechanical and plant engineering, for printing machines and rack technology.



### Suitable contacts:

#### EPIC® MH Coax 1.6mm

- EPIC® H-D 1.6 machined contacts

#### EPIC® MH Coax 2.5mm

- EPIC® H-BE 2.5 machined contacts

### Technical data

|  |                                                                                                     |  |                                              |
|--|-----------------------------------------------------------------------------------------------------|--|----------------------------------------------|
|  | <b>Classification</b>                                                                               |  | <b>Pollution degree</b>                      |
|  | ETIM 5.0 Class-ID: EC002641<br>ETIM 5.0 Class-Description: Modular connector (industrial connector) |  | <b>Flammability</b><br>UL94 V-0              |
|  | <b>Rated voltage (V)</b><br>50                                                                      |  | <b>Number of contacts</b><br>1               |
|  | <b>Rated impulse voltage</b><br>0.8 kV                                                              |  | <b>Plug cycles</b><br>500                    |
|  | <b>Rated current in A</b><br>16                                                                     |  | <b>Temperature range</b><br>-40°C ... +125°C |

| Article number             | Article description    | Contact type | Number of working contacts | Pieces / PU |
|----------------------------|------------------------|--------------|----------------------------|-------------|
| <b>EPIC® MH Coax 1.6mm</b> |                        |              |                            |             |
| 44423260                   | EPIC® MHS Coax D=1.6mm | male         | 1                          | 10          |
| 44423261                   | EPIC® MHB Coax D=1.6mm | female       | 1                          | 10          |
| <b>EPIC® MH Coax 2.5mm</b> |                        |              |                            |             |
| 44423262                   | EPIC® MHS Coax D=2.5mm | male         | 1                          | 10          |
| 44423263                   | EPIC® MHB Coax D=2.5mm | female       | 1                          | 10          |

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

# EPIC® industrial connectors

Rectangular connectors • EPIC® MH modular system



## EPIC® MH Potential set

High flexibility through any combination of inserts in one connector



### Info

- Equipotential springs for multi frame

### Benefits

- Equipotential springs for multi frame
- For use in EPIC® MH BUS modules

### Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC000796  
ETIM 5.0 Class-Description:  
Contact for industrial connectors

| Article number                | Article description     | Contact type | Pieces / PU |
|-------------------------------|-------------------------|--------------|-------------|
| <b>EPIC® MH Potential set</b> |                         |              |             |
| 44423265                      | EPIC® MHS Potential Set | male         | 20          |
| 44423275                      | EPIC® MHB Potential Set | female       | 20          |

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



## EPIC® MH 0 dummy module

High flexibility through any combination of inserts in one connector



### Info

- Modular connector system, pluggable with the market standard
- Dummy module as a placeholder for future expansion

### Suitable housing

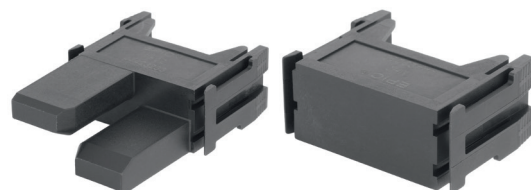
- EPIC MH 6 R Page 40
- EPIC MH 10 R Page 40
- EPIC MH 16 R Page 40
- EPIC MH 24 R Page 40
- EPIC® H-B housing, use in high version

### Benefits

- Dummy module as a placeholder for future expansion
- EPIC® MH system is pluggable with the market standard
- “Z” version with centring function for rack technology
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.

### Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction



### Technical data



#### Classification

ETIM 5.0 Class-ID: EC002641  
ETIM 5.0 Class-Description: Modular connector (industrial connector)



#### Number of contacts

0



#### Material

Polyamide, glass-fibre reinforced



#### Temperature range

-40 °C  
+125 °C

| Article number                               | Article description | Slots | Pieces / PU |
|----------------------------------------------|---------------------|-------|-------------|
| <b>EPIC® MH 0 dummy module</b>               |                     |       |             |
| 44423232                                     | EPIC® MH 0          | 1     | 10          |
| <b>EPIC® MH 0 dummy module with centring</b> |                     |       |             |
| 44423233                                     | EPIC® MH 0 Z        | 1     | 10          |

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

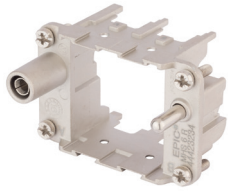
## EPIC® industrial connectors

Rectangular connectors • EPIC® MH modular system frame



### EPIC® MH 6 multi-frame

High flexibility through any combination of inserts in one connector

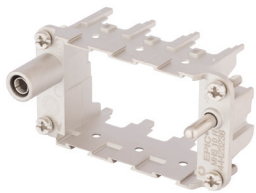


#### Info

- Modular connector system, pluggable with the market standard
- Frame system for mounting modules

### EPIC® MH 10 multi-frame

High flexibility through any combination of inserts in one connector

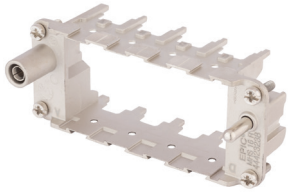


#### Info

- Modular connector system, pluggable with the market standard
- Frame system for mounting modules

### EPIC® MH 16 multi-frame

High flexibility through any combination of inserts in one connector

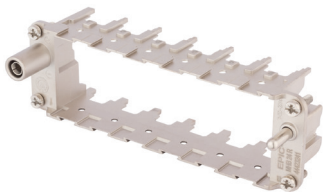


#### Info

- Modular connector system, pluggable with the market standard
- Frame system for mounting modules

### EPIC® MH 24 multi-frame

High flexibility through any combination of inserts in one connector

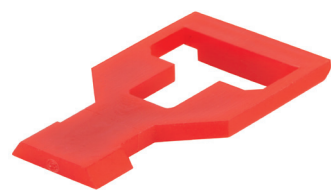


#### Info

- Modular connector system, pluggable with the market standard
- Frame system for mounting modules

### EPIC® MH Clip

High flexibility through any combination of inserts in one connector



#### Info

- Modular connector system, pluggable with the market standard
- Adapter clip for third-party modules

**Suitable housing****EPIC® MH 6 multi-frame**

- EPIC® ULTRA H-B 6
- EPIC® H-B 6 housing
- EPIC® Quick & Easy assembly system
- EPIC® docking frame

**EPIC® MH 10 multi-frame**

- EPIC® ULTRA H-B 10
- EPIC® H-B 10 housing
- EPIC® Quick & Easy assembly system
- EPIC® docking frame

**EPIC® MH 16 multi-frame**

- EPIC® ULTRA H-B 16
- EPIC® H-B 16 housing
- EPIC® Quick & Easy assembly system
- EPIC® docking frame

**EPIC® MH 24 multi-frame**

- EPIC® ULTRA H-B 24
- EPIC® H-B 24 housing
- EPIC® Quick & Easy assembly system
- EPIC® docking frame

**Technical data****Classification**

ETIM 5.0 Class-ID: EC002641  
ETIM 5.0 Class-Description:  
Modular connector

**Material**

**EPIC® MH 6 multi-frame**  
Zinc die-cast

**Plug cycles**

**EPIC® MH 6 multi-frame**  
500

**Temperature range**

-40°C  
+125°C

**Benefits****EPIC® MH 6 multi-frame**

- Multi-frame for mounting own and third-party modules
- EPIC® MH system is pluggable with the market standard
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.
- PE connection from 1mm<sup>2</sup> up to 6mm<sup>2</sup> with conductor end sleeve, 10mm<sup>2</sup> with adapter

**EPIC® MH Clip**

- EPIC® MH clip for mounting third-party modules in EPIC® MH frame
- EPIC® MH system is pluggable with the market standard
- The mix of different functions in one connector guarantees a high level of flexibility
- Railway applications
  - Fire protection on railway vehicles: Test according to EN 45545-2. Requirement set R22 and R23. Hazard level HL1, HL2 and HL3.

**Application range**

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction

| Article number                 | Article description               | Contact type | Slots | Pieces / PU |
|--------------------------------|-----------------------------------|--------------|-------|-------------|
| <b>EPIC® MH 6 multi-frame</b>  |                                   |              |       |             |
| 44423234                       | EPIC® MHS 6 R (A,B)               | male         | 2     | 10          |
| 44423235                       | EPIC® MHB 6 R (a, b)              | female       | 2     | 10          |
| <b>EPIC® MH 10 multi-frame</b> |                                   |              |       |             |
| 44423236                       | EPIC® MHS 10 R (A, B, C)          | male         | 3     | 10          |
| 44423237                       | EPIC® MHB 10 R (a, b, c)          | female       | 3     | 10          |
| <b>EPIC® MH 16 multi-frame</b> |                                   |              |       |             |
| 44423238                       | EPIC® MHS 16 R (A, B, C, D)       | male         | 4     | 10          |
| 44423239                       | EPIC® MHB 16 R (a, b, c, d)       | female       | 4     | 10          |
| <b>EPIC® MH 24 multi-frame</b> |                                   |              |       |             |
| 44423240                       | EPIC® MHS 24 R (A, B, C, D, E, F) | male         | 6     | 10          |
| 44423241                       | EPIC® MHB 24 R (a, b, c, d, e, f) | female       | 6     | 10          |
| <b>EPIC® MH Clip</b>           |                                   |              |       |             |
| 44423264                       | EPIC® MH Clip                     |              |       | 20          |

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

**Accessories****EPIC® MH 6 multi-frame**

- EPIC MH Clip refer to page 40



## EPIC® MH 8.0 mm contacts

High flexibility through any combination of inserts in one connector



### Info

- Modular connector system, pluggable with the market standard

### Benefits

- Crimp termination for permanent vibration-proof contact
- EPIC® MH system is pluggable with the market standard

### Application range

- Mechanical engineering
- Robot building
- Plant construction
- Renewable energy
- Railway applications / vehicle construction

### Suitable tools

- For use in battery-operated hydraulic crimping tool Klauke type EK 120/42-L

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC000796  
ETIM 5.0 Class-Description:  
Contact for industrial connectors

**Contact resistance**  
< 5 mOhm



#### Cable connection

Crimp termination: 10 mm<sup>2</sup> 35 mm<sup>2</sup>

**Stripping length (mm)**  
18



**Plug cycles**  
500

| Article number                 | Article description           | Contact type | Connection cross section (mm <sup>2</sup> ) | Pieces / PU |
|--------------------------------|-------------------------------|--------------|---------------------------------------------|-------------|
| <b>EPIC® MH D=8.0 contacts</b> |                               |              |                                             |             |
| 44423242                       | EPIC® MH SCEM AG 10sqmm D=8.0 | male         | 10                                          | 10          |
| 44423246                       | EPIC® MH BCEM AG 10sqmm D=8.0 | female       | 10                                          | 10          |
| 44423243                       | EPIC® MH SCEM AG 16sqmm D=8.0 | male         | 16                                          | 10          |
| 44423247                       | EPIC® MH BCEM AG 16sqmm D=8.0 | female       | 16                                          | 10          |
| 44423244                       | EPIC® MH SCEM AG 25sqmm D=8.0 | male         | 25                                          | 10          |
| 44423248                       | EPIC® MH BCEM AG 25sqmm D=8.0 | female       | 25                                          | 10          |
| 44423245                       | EPIC® MH SCEM AG 35sqmm D=8.0 | male         | 35                                          | 10          |
| 44423249                       | EPIC® MH BCEM AG 35sqmm D=8.0 | female       | 35                                          | 10          |

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



## EPIC® MH 4.0 mm contacts

High flexibility through any combination of inserts in one connector



### Info

- Modular connector system, pluggable with the market standard

### Benefits

- Crimp termination for permanent vibration-proof contact
- EPIC® MH system is pluggable with the market standard

### Application range

- Mechanical engineering
- Robotics industry
- Plant construction
- Renewable energy
- Railway applications / vehicle construction

### Suitable tools

- EPIC MH contact removal tool 4.0mm

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC000796  
ETIM 5.0 Class-Description:  
Contact for industrial connectors

#### Contact resistance

< 5 mOhm



#### Cable connection

Crimp termination: 1.5 mm² 10 mm²

#### Stripping length (mm)

10



#### Plug cycles

500

| Article number                  | Article description            | Contact type | Connection cross section (mm²) | Pieces / PU |
|---------------------------------|--------------------------------|--------------|--------------------------------|-------------|
| <b>EPIC® MH 4.0 mm contacts</b> |                                |              |                                |             |
| 44423250                        | EPIC® MH SCEM AG 1.5sqmm D=4.0 | male         | 1.5                            | 100         |
| 44423255                        | EPIC® MH BCEM AG 1.5sqmm D=4.0 | female       | 1.5                            | 100         |
| 44423251                        | EPIC® MH SCEM AG 2.5sqmm D=4.0 | male         | 2.5                            | 100         |
| 44423256                        | EPIC® MH BCEM AG 2.5sqmm D=4.0 | female       | 2.5                            | 100         |
| 44423252                        | EPIC® MH SCEM AG 4sqmm D=4.0   | male         | 4                              | 100         |
| 44423257                        | EPIC® MH BCEM AG 4sqmm D=4.0   | female       | 4                              | 100         |
| 44423253                        | EPIC® MH SCEM AG 6sqmm D=4.0   | male         | 6                              | 100         |
| 44423258                        | EPIC® MH BCEM AG 6sqmm D=4.0   | female       | 6                              | 100         |
| 44423254                        | EPIC® MH SCEM AG 10sqmm D=4.0  | male         | 10                             | 100         |
| 44423259                        | EPIC® MH BCEM AG 10sqmm D=4.0  | female       | 10                             | 100         |

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

## EPIC® industrial connectors



Rectangular connectors • EPIC® MH modular system contacts and accessories

### EPIC® TOOL DIE 8.0mm

High flexibility through any combination of inserts in one connector



#### Info

- Crimping insert for electro-hydraulic crimping tool

### EPIC® MH contact removal tool 8.0 mm

High flexibility through any combination of inserts in one connector



#### Info

- Tool for removing the 8.0mm contacts from the EPIC® MH modules

#### Suitable contacts:

##### EPIC® TOOL DIE 8.0mm

- EPIC MH 8.0mm Contacts Page 42

#### Benefits

##### EPIC® MH contact removal tool 8.0 mm

- Tool for removing the 8.0mm contacts from the EPIC® MH modules

#### Suitable tools

##### EPIC® TOOL DIE 8.0mm

- For use in battery-operated hydraulic crimping tool Klauke type EK 120/42-L

| Article number                              | Article description                 | Connection cross section (mm²) | Pieces / PU |
|---------------------------------------------|-------------------------------------|--------------------------------|-------------|
| <b>Crimping inserts</b>                     |                                     |                                |             |
| 44423271                                    | EPIC® TOOL DIE D=8.0 16sqmm         | 16                             | 1           |
| 44423272                                    | EPIC® TOOL DIE D=8.0 25sqmm         | 25                             | 1           |
| 44423273                                    | EPIC® TOOL DIE D=8.0 35sqmm         | 35                             | 1           |
| <b>EPIC® MH contact removal tool 8.0 mm</b> |                                     |                                |             |
| 44423269                                    | EPIC® MH contact removal tool D=8.0 |                                | 1           |

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

## EPIC® industrial connectors



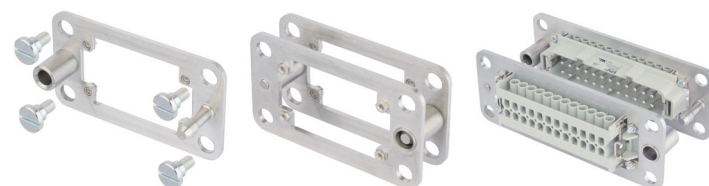
Rectangular connectors • EPIC® mounting systems

### EPIC® docking frame



#### Info

- Mounting system for control cabinets
- For floating mounting of the inserts



#### Application range

- Control cabinet construction
- Wind power plants

#### Product features

- Scope of delivery for one article: 1 frame + 4 screws
- Special screws adapted to frame
- Pulling range in x and y axis: + -1.5mm

#### Technical data



##### Classification

ETIM 5.0 Class-ID: EC002312  
ETIM 5.0 Class-Description: Contact insert holder for industrial connectors



##### Material

Docking frame: stainless steel  
Screws: Galvanized steel



##### Plug cycles

500

| Article number             | Article description | Version                       | Pieces / PU |
|----------------------------|---------------------|-------------------------------|-------------|
| <b>EPIC® docking frame</b> |                     |                               |             |
| 44429440                   | H-B 6 DF            | 4 fixing screws each included | 2           |
| 44429441                   | H-B 10 DF           | 4 fixing screws each included | 2           |
| 44429442                   | H-B 16 DF           | 4 fixing screws each included | 2           |
| 44429443                   | H-B 24 DF           | 4 fixing screws each included | 2           |

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



## EPIC® ULTRA H-A 3 TG

Housing EPIC® ULTRA: For higher functional reliability



## EPIC® ULTRA H-A 3 TS

Housing EPIC® ULTRA: For higher functional reliability



## EPIC® ULTRA H-A 3 TBF

Housing EPIC® ULTRA: For higher functional reliability



**i Info**

- EMC protection
- Corrosion-resistant
- Protection rating tested according to UL50E

**i Info**

- EMC protection
- Corrosion-resistant
- Protection rating tested according to UL50E

**i Info**

- EMC protection
- Corrosion-resistant
- Protection rating tested according to UL50E

### Benefits

- Optimum, low-resistance 360° screening
- All-purpose thanks to high corrosion resistance and high protection against environmental influences.
- Space-saving due to compact dimensions
- High mechanical and chemical resistance

### Application range

- In EMC-sensitive environments
- For fixed and flexible applications in machine construction and wind turbine engineering
- Construction machinery
- Electric motor manufacturing

### Technical data

|                                                               |                 |
|---------------------------------------------------------------|-----------------|
| <b>Classification</b>                                         | <b>ETIM</b>     |
| ETIM 5.0 Class-ID: EC000437                                   |                 |
| ETIM 5.0 Class-Description: Housing for industrial connectors |                 |
| <b>Material</b>                                               | <b>Material</b> |
| Housing: Nickel-plated zinc die-cast                          |                 |
| Lever: Stainless steel                                        |                 |
| Seal: NBR                                                     |                 |

|                                          |                                      |
|------------------------------------------|--------------------------------------|
| <b>IP</b>                                | <b>Protection rating</b>             |
| IP 65                                    |                                      |
|                                          | NEMA 250, UL50E: 12, 4, 4X (latched) |
| <b>Temperature range</b>                 |                                      |
| -40°C to +100°C, short-term up to +125°C |                                      |

### Product features

- Pluggable with standard housings
- Salt spray test according to IEC 68-2-52, severity level 2
- Salt spray testing according to DIN EN ISO 9227, method NSS, test duration 480 hours
- Corrosion-resistant according to DIN EN 6988
- Delivery including stainless steel screw for the inserts

### Suitable inserts

- Refer to selection table A10 for help selecting inserts and housing

| Article number               | Article description | M  | Pieces / PU |
|------------------------------|---------------------|----|-------------|
| <b>EPIC® ULTRA H-A 3 TG</b>  |                     |    |             |
| 10423300                     | ULTRA H-A 3 TG      | 20 | 10          |
| <b>EPIC® ULTRA H-A 3 TS</b>  |                     |    |             |
| 10423201                     | ULTRA H-A 3 TS      | 20 | 10          |
| <b>EPIC® ULTRA H-A 3 TBF</b> |                     |    |             |
| 10423204                     | ULTRA H-A 3 TBF     | 20 | 10          |

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

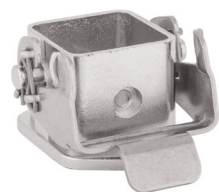
# EPIC® industrial connectors

Rectangular connectors • EPIC® ULTRA H-B 6



## EPIC® ULTRA H-A 3 AG

Housing EPIC® ULTRA: For higher functional reliability

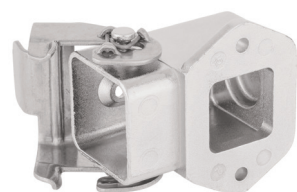


### Info

- EMC protection
- Corrosion-resistant
- Protection rating tested according to UL50E

## EPIC® ULTRA H-A 3 AGS

Housing EPIC® ULTRA: For higher functional reliability



### Info

- EMC protection
- Corrosion-resistant
- Protection rating tested according to UL50E

## EPIC® ULTRA H-A 3 AGSV

Housing EPIC® ULTRA: For higher functional reliability



### Info

- EMC protection
- Corrosion-resistant
- Protection rating tested according to UL50E

### Benefits

- Optimum, low-resistance 360° screening
- All-purpose thanks to high corrosion resistance and high protection against environmental influences.
- Space-saving due to compact dimensions
- High mechanical and chemical resistance

### Application range

- In EMC-sensitive environments
- For fixed and flexible applications in machine construction and wind turbine engineering
- Construction machinery
- Electric motor manufacturing

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC000437  
ETIM 5.0 Class-Description: Housing for industrial connectors



#### Material

Housing: Nickel-plated zinc die-cast  
Lever: Stainless steel  
Seal: NBR



#### Protection rating

IP 65  
NEMA 250, UL50E: 12, 4, 4X (latched)



#### Temperature range

-40°C to +100°C, short-term up to +125°C

### Product features

- Pluggable with standard housings
- Salt spray test according to IEC 68-2-52, severity level 2
- Salt spray testing according to DIN EN ISO 9227, method NSS, test duration 480 hours
- Corrosion-resistant according to DIN EN 6988
- Delivery including stainless steel screw for the inserts

### Suitable inserts

- Refer to selection table A10 for help selecting inserts and housing

| Article number                | Article description | M  | Pieces / PU |
|-------------------------------|---------------------|----|-------------|
| <b>EPIC® ULTRA H-A 3 AG</b>   |                     |    |             |
| 10423200                      | ULTRA H-A 3 AG      |    | 10          |
| <b>EPIC® ULTRA H-A 3 AGS</b>  |                     |    |             |
| 10423202                      | ULTRA H-A 3 AGS     |    | 10          |
| <b>EPIC® ULTRA H-A 3 AGSV</b> |                     |    |             |
| 10423203                      | ULTRA H-A 3 AGSV    | 20 | 10          |

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

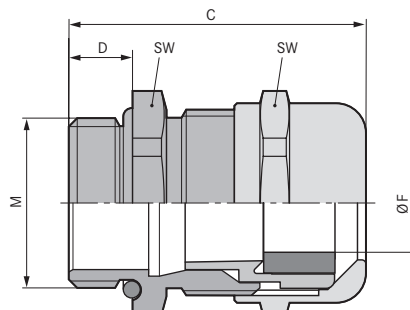


## SKINTOP® COLD NPT



## Info

- For extreme sub-zero temperatures



## Benefits

- High resistance to cold
- Cold impact resistance
- High mechanical stability
- Optimum strain relief
- Wide, variable clamping ranges

## Application range

- In areas where mechanical stability and high cold resistance are critical.
- Air-conditioning technology
- Refrigerated goods plants, cold storage
- Offshore sector
- Plant construction

## Design

- Metric connection thread according to DIN EN 60423
- Basis for technical information DIN IEC 62444

## Note

- UL pending
- Counter nut to be used: SKINDICHT® SM-M
- Refer to SKINTOP® metric accessories for suitable accessories

## Technical data

**Classification**  
ETIM 5.0 Class-ID: EC000441  
ETIM 5.0 Class-Description:  
Cable gland

**Material**  
Body: Nickel-plated brass  
Insert: Special polyamide  
Sealing ring: Silicone  
O-ring: Silicone

**Protection rating**  
IP 68 - 10 bar (M12 - M20)  
IP 68 - 5 bar (M25 - M63)

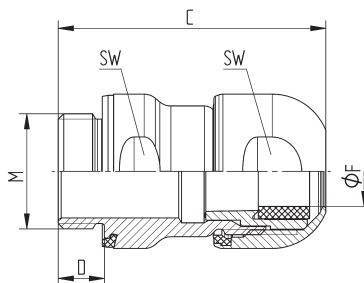
**Temperature range**  
-70°C to +100°C

| Article number             | Article designation / size | Clamping range ØF (mm) | SW mm | Total length C (mm) | Thread length, D (mm) | Pieces / PU |
|----------------------------|----------------------------|------------------------|-------|---------------------|-----------------------|-------------|
| <b>SKINTOP® COLD NPT</b>   |                            |                        |       |                     |                       |             |
| 53113700                   | 1/4"                       | 3,5 - 7                | 16    | 36.0                | 15                    | 100         |
| 53113701                   | 3/8"                       | 4,5 - 10               | 20    | 39.7                | 15                    | 100         |
| 53113702                   | 1/2"                       | 7 - 13                 | 24    | 42.5                | 15                    | 50          |
| 53113703                   | 3/4"                       | 9 - 17                 | 29    | 44.5                | 15                    | 25          |
| 53113704                   | 1"                         | 11 - 21                | 36    | 49.0                | 15                    | 25          |
| 53113705                   | 1 1/4"                     | 19 - 28                | 45    | 57.5                | 15                    | 10          |
| 53113706                   | 1 1/2"                     | 27 - 35                | 54    | 61.5                | 17                    | 5           |
| 53113707                   | 2"                         | 34 - 45                | 67    | 63.5                | 17                    | 5           |
| <b>SKINTOP® COLD-R NPT</b> |                            |                        |       |                     |                       |             |
| 53113710                   | 1/4"                       | 1 - 5                  | 16    | 36.0                | 15                    | 100         |
| 53113711                   | 3/8"                       | 2 - 7                  | 20    | 39.7                | 15                    | 100         |
| 53113712                   | 1/2"                       | 5 - 10                 | 24    | 42.5                | 15                    | 50          |
| 53113713                   | 3/4"                       | 6 - 13                 | 29    | 44.5                | 15                    | 25          |
| 53113714                   | 1"                         | 7 - 15                 | 36    | 49.0                | 15                    | 25          |
| 53113715                   | 1 1/4"                     | 15 - 23                | 45    | 57.5                | 15                    | 10          |
| 53113716                   | 1 1/2"                     | 22 - 29                | 54    | 61.5                | 17                    | 5           |
| 53113717                   | 2"                         | 28 - 39                | 67    | 63.5                | 17                    | 5           |

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



## SKINTOP® HYGIENIC SC / SKINTOP® HYGIENIC-R SC



### Info

- Ideal for hygienic critical areas - resistant, edge-free, robust and reliable
- No gaps, cavities or outer lying thread - so no risk of contamination of food machines, facilities or components.

### Benefits

- Low-resistance screen contact, optimum EMC protection
- Highly conductive, flexible EMC contact spring for easy installation of various screen diameters
- Hygienic design for optimum cleaning results
- Smooth surfaces and no edges prevent the accumulation of fluids and the formation of micro-organisms

### Application range

- For EMC-compliant earthing of the copper braided shield, or for cables with copper corrugated sheath
- Food machinery, systems and components
- For use in the **product zone**
- Pharmaceutical industry

### Norm references / approvals

- **EHEDG (TYPE EL Class I AUX)**  
Hygienic design for machinery, apparatus and components
- **ECOLAB®**  
Industry standard in the field of professional cleaning and disinfection in the food and beverage industry

### FDA 21 CFR 177.2600

Special sealing element for the food and beverage industry in North America

### DIN EN 1672-2

Food machines General principles for design

### DIN EN ISO 14159

Security of machinery hygienic requirements for the design of machinery

### Design

- Material and shape mean it is easy and safe to clean
- The blue colouring makes the sealing material clearly distinguishable from foodstuffs
- A complete assembly is easily mounted from the outside
- Metric connection thread according to DIN EN 60423
- Basis for technical information DIN IEC 62444

### Note

- UL pending
- Installation wrench for very high packing density on request

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC000441  
ETIM 5.0 Class-Description: Cable gland



#### Material

Body: Stainless steel V4A (1.4404 / 316L)  
Insert: Polyamide  
Sealing material: Special elastomer



#### Protection rating

IP 68 - 10 bar  
IP 69



#### Temperature range

-20°C to +100°C

| Article number              | Article designation / size | Clamping range ØF (mm) | SW mm | Total length C (mm) | Thread length, D (mm) | Pieces / PU |
|-----------------------------|----------------------------|------------------------|-------|---------------------|-----------------------|-------------|
| <b>SKINTOP® HYGIENIC SC</b> |                            |                        |       |                     |                       |             |
| 53105300                    | M 12 x 1,5                 | 4-6                    | 16    | 39.9                | 6.5                   | 5           |
| 53105301                    | M 16 x 1,5                 | 6,5-9                  | 20    | 43.4                | 7                     | 5           |
| 53105302                    | M 20 x 1,5                 | 9-12                   | 24    | 46.4                | 8                     | 5           |
| 53105303                    | M 25 x 1,5                 | 11,5-15,5              | 29    | 48.9                | 8                     | 5           |

Other sizes are available upon request

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

### Similar products

- SKINTOP® INOX / SKINTOP® INOX-R
- SKINTOP® INOX SC / SKINTOP® INOX-R SC

### Accessories

- Suitable counter nut SKINDICHT® SM CrNi M



## SKINTOP® MULTI



## Info

- Compact multi-insertion system with innovative gel technology



## Benefits

- Large clamping range of 4 mm and AS-I BUS entry system by elastic gel technology with innovative membrane technology
- Easy assembly with high packing density
- Optimum strain relief at the entire cable bundle
- Error reduction through clear assignment of the cables to be installed by clear marking of the implementing points
- Unoccupied points remain securely sealed

## Application range

- Used in areas where a lot of cables and wires need to be inserted into housing with minimum space requirements
- For cables that have not been assembled and media conduits
- Control system, control cabinet and apparatus construction
- Automation technology

## Product features

- Integrated seal for the cable & housing (captive)
- Halogen-free
- UV-, ozone and oil-resistant
- The adhesive effect of the gel enables very easy positioning at the housing during assembling

## Norm references / approvals

- UL 508A for SKINTOP® MULTI versions 1 + 2
- UL pending for SKINTOP® MULTI versions 3 + 4

## Design

- For connector mounting cut-outs 24-pin (36 x 112 mm)

## Included in delivery

- SKINTOP® MULTI including mounting material

## Technical data

|  |                                                                                                    |
|--|----------------------------------------------------------------------------------------------------|
|  | <b>Classification</b><br>ETIM 5.0 Class-ID: EC000240<br>ETIM 5.0 Class-Description:<br>Cable entry |
|  | <b>Certifications</b><br>UL File No. E349737<br>Fire behaviour according to UL94 V-2               |
|  | <b>Note</b><br>Individual hole configuration on request                                            |
|  | <b>Material</b><br>Frame: Polycarbonate<br>Seal: Gel                                               |
|  | <b>Protection rating</b><br>IP 68                                                                  |
|  | <b>Temperature range</b><br>-30°C to +100°C                                                        |

| Article number        | Article designation / size | Max. number of executions | Number of cables x clamping range                                                           | Pieces / PU |
|-----------------------|----------------------------|---------------------------|---------------------------------------------------------------------------------------------|-------------|
| <b>SKINTOP® MULTI</b> |                            |                           |                                                                                             |             |
| 52220065              | SKINTOP® MULTI Version 1   | 22                        | 6 x 8-12 mm, 16 x 3-7 mm                                                                    | 1           |
| 52220073              | SKINTOP® MULTI Version 2   | 21                        | 5 x 2-6 mm, 8 x 4-8 mm, 3 x 5-9 mm, 2 x 8-12 mm, 1 x 12-16 mm, 2 x AS-I BUS oder 2 x 2-4 mm | 1           |
| 52220080              | SKINTOP® MULTI Version 3   | 30                        | 30 x 2-6 mm                                                                                 | 1           |
| 52220085              | SKINTOP® MULTI Version 4   | 11                        | 8 x 8-12 mm, 2 x 12-16 mm, 1 x 16-20 mm                                                     | 1           |

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

## Similar products

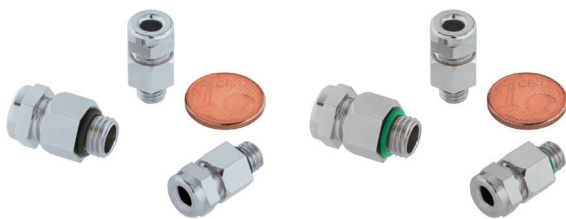
- SKINTOP® CUBE MULTI

## Accessories

- SKINTOP® DIX-DV
- Kraftform Kompakt® 10

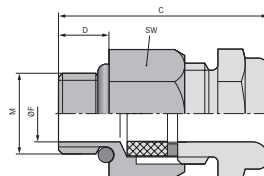
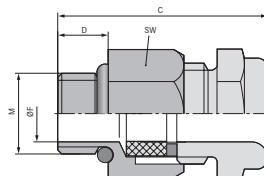


## SKINDICHT® MINI NBR / SKINDICHT® MINI FKM



SKINDICHT® MINI NBR

SKINDICHT® MINI FKM

**Benefits**

- High protection rating
- For the smallest conductor cross-sections
- Low installation height
- Gentle cable clamping
- High packing density

**Application range**

- For use wherever a compact design is required due to limited space.
- Sensors
- Measurement, control and regulation technology

**Product features****SKINDICHT® MINI FKM**

- Particularly suitable for high temperatures and use in aggressive media

**Technical data****Classification**

ETIM 5.0 Class-ID: EC000441  
ETIM 5.0 Class-Description:  
Cable gland

**Caution**

Recommendation of torque  
M 6 x 1 1.5 Nm  
M 8 x 1 3.0 Nm

**Material**

**SKINDICHT® MINI NBR**  
Body: Nickel-plated brass  
Sealing: CR/NBR  
**SKINDICHT® MINI FKM**  
Body: Nickel-plated brass  
Sealing: FKM

**Protection rating**

IP 66  
IP 68 - 5 bar

**Temperature range**

**SKINDICHT® MINI NBR**  
-20°C to +100°C  
**SKINDICHT® MINI FKM**  
-20°C to +200°C

| Article number                     | Article designation / size | Clamping range ØF (mm) | SW mm | Total length C (mm) | Thread length, D (mm) | Clear opening F (mm) | Pieces / PU |
|------------------------------------|----------------------------|------------------------|-------|---------------------|-----------------------|----------------------|-------------|
| <b>SKINDICHT® MINI NBR</b>         |                            |                        |       |                     |                       |                      |             |
| 52001860                           | MINI 6 x 1                 | 2 - 3                  | 9     | 19.7                | 5                     | 3                    | 50          |
| 52001880                           | MINI 8 x 1                 | 3,5 - 5,5              | 11    | 20.5                | 5                     | 5                    | 50          |
| 52001895                           | MINI 10 x 1                | 5 - 7                  | 14    | 22.3                | 5                     | 7                    | 50          |
| <b>SKINDICHT® MINI counter nut</b> |                            |                        |       |                     |                       |                      |             |
| 52102998                           | MINI 6 x 1                 | -                      | 10    | 11.2                | 3.1                   |                      | 50          |
| 52102997                           | MINI 8 x 1                 | -                      | 13    | 14.4                | 3.9                   |                      | 50          |
| 52102999                           | MINI 10 x 1                | -                      | 17    | 19.2                | 4.9                   |                      | 50          |
| <b>SKINDICHT® MINI FKM</b>         |                            |                        |       |                     |                       |                      |             |
| 52001889                           | MINI 6 x 1                 | 2 - 3                  | 9     | 19.7                | 5                     | 3                    | 50          |
| 52001887                           | MINI 8 x 1                 | 3,5 - 5,5              | 11    | 20.5                | 5                     | 5                    | 50          |
| 52001894                           | MINI 10 x 1                | 5 - 7                  | 14    | 22.3                | 5                     | 7                    | 50          |

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

## Diagnoal cutter



### Info

- Available from June 2017

### Benefits

- SESI 16: narrow head style for use in confined areas
- SXSI 16: less force required due to optimum co-ordination of the cutting edge angle
- KSSI 18: high cutting performance with minimum effort
- High ergonomics thanks to multi-component handles
- Insulated handles allow working under voltage up to 1000V

### Application range

- SESI 16: for soft and hard wire
- SXSI 16: for both thicker cables as well as for fine copper wires
- KSSI 18: for all sorts of wire including piano wire

### Product features

- Precision ground, hardened blades
- Made in Germany

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC000142  
ETIM 5.0 Class-Description:  
Cable shears



#### Certifications

Insulated according to IEC 60900,  
applicable up to 1000V AC / 1500V DC  
VDE-tested



#### Material

Vanadium steel, forged, multi stage  
oil-hardened

| Article number                        | Article designation | Soft wire mm | Medium hard wire mm | Hard wire mm | Pianowire mm | Cable diameter mm | Weight (kg) | Length (mm) |
|---------------------------------------|---------------------|--------------|---------------------|--------------|--------------|-------------------|-------------|-------------|
| <b>Diagnoal cutter</b>                |                     |              |                     |              |              |                   |             |             |
| 62120520                              | SESI 16             | 4            | 3                   | 2            |              |                   | 0.216       | 160         |
| <b>X-Cut® Compact diagonal cutter</b> |                     |              |                     |              |              |                   |             |             |
| 62120521                              | SXSI 16             | 4.8          | 3.8                 | 2.7          | 2.2          | 12                | 0.175       | 160         |
| <b>High leverage diagonal cutter</b>  |                     |              |                     |              |              |                   |             |             |
| 62120522                              | KSSI 18             |              | 3.8                 | 2.7          | 2.2          |                   | 0.28        | 180         |

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

## Cable shear



### Benefits

- Special two-blade structure divides the cutting process into pre-cut and post-cut
- Easy and clean cut by using only one hand
- Less power required due to favourable transmission ratio and new blade geometry
- High ergonomics thanks to multi-component handles
- Insulated handles allow working under voltage up to 1000V

### Application range

- Cuts copper and aluminium cables

### Product features

- Precision ground, hardened blades
- Made in Germany

### Technical data



#### Classification

ETIM 5.0 Class-ID: EC000142  
ETIM 5.0 Class-Description:  
Cable shears



#### Certifications

Insulated according to IEC 60900,  
applicable up to 1000V AC / 1500V DC  
VDE-tested



#### Material

High-grade special tool steel, forged,  
chrome plated

| Article number     | Article designation | Cable diameter mm | Weight (kg) | Length (mm) |
|--------------------|---------------------|-------------------|-------------|-------------|
| <b>Cable shear</b> |                     |                   |             |             |
| 62120523           | KASI 20             | 20                | 0.34        | 200         |

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

## Tools and cable accessories

Cutting, Holding, Stripping, Skinning • Cutting tools

### Ratchet cutter



#### Info

- Available from June 2017

#### Benefits

- One-hand operation thanks to the ratchet principle
- Less power required due to very high transmission ratio
- High ergonomics thanks to multi-component handles
- Insulated handles allow working under voltage up to 1000V

#### Product features

- Precision ground, hardened blades
- Swivel knife can be unlocked in any cutting position with the press of a thumb
- Made in Germany

#### Technical data



##### Classification

ETIM 5.0 Class-ID: EC000142  
ETIM 5.0 Class-Description:  
Cable shears



##### Certifications

Insulated according to IEC 60900, applicable up to 1000V AC / 1500V DC VDE-tested



##### Material

High-grade special tool steel, forged, oil-hardened

#### Application range

- Cuts copper and aluminium cables
- Not suitable for steel wire and wire ropes

| Article number        | Article designation | Cable diameter mm | Weight (kg) | Length (mm) |
|-----------------------|---------------------|-------------------|-------------|-------------|
| <b>Ratchet cutter</b> |                     |                   |             |             |
| 62120524              | KSRI 525            | 32                | 0.652       | 250         |
| 62120525              | KSRI 628            | 52                | 0.835       | 280         |

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

## Tools and cable accessories

Cutting, Holding, Stripping, Skinning • Pliers

### Flat nose and snipe nose side cutting pliers



#### Benefits

- High ergonomics thanks to multi-component handles
- Insulated handles allow working under voltage up to 1000V

#### Product features

- FLZI 16: flat, short, wide jaws, knurled gripping surfaces
- FRZI 16: pointed, half-rounded jaws, knurled gripping surfaces, with cutting edges
- Made in Germany

#### Technical data



##### Classification

ETIM 5.0 Class-ID: EC000833  
ETIM 5.0 Class-Description:  
Flat nose plier



##### Certifications

Insulated according to IEC 60900, applicable up to 1000V AC / 1500V DC VDE-tested



##### Material

Vanadium electric steel, forged, oil-hardened

| Article number                       | Article designation | Medium hard wire mm | Hard wire mm | Weight (kg) | Length (mm) |
|--------------------------------------|---------------------|---------------------|--------------|-------------|-------------|
| <b>Flat nose plier</b>               |                     |                     |              |             |             |
| 62120502                             | FLZI 16             |                     |              | 0.176       | 160         |
| <b>Snipe nose side cutting plier</b> |                     |                     |              |             |             |
| 62120503                             | FRZI 16             | 2.5                 | 1.6          | 0.144       | 160         |

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

## High leverage combination plier



## Benefits

- 35 % less effort required than with conventional combination pliers
- Easier work due to optimised leverage
- High ergonomics thanks to multi-component handles
- Insulated handles allow working under voltage up to 1000V

## Application range

- With gripping zones for suitable for versatile use
- With cutting edges for heavy duty and thicker cables

## Product features

- Long cutting edges for thicker cables
- Made in Germany

## Technical data



## Classification

ETIM 5.0 Class-ID: EC000836

ETIM 5.0 Class-Description:

Combination pliers



## Certifications

Insulated according to IEC 60900, applicable up to 1000V AC / 1500V DC VDE-tested



## Material

High-grade special tool steel, forged, multi stage oil-hardened

| Article number                         | Article designation | Hard wire mm | Pianowire mm | Cable diameter mm | Weight (kg) | Length (mm) |
|----------------------------------------|---------------------|--------------|--------------|-------------------|-------------|-------------|
| <b>High leverage combination plier</b> |                     |              |              |                   |             |             |
| 62120504                               | KKZI 20             | 2.8          | 2.2          | 13                | 0.343       | 200         |

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



## Info

- Available from June 2017

## Water pump plier



## Benefits

- Good access to the workpiece due to slim size
- Self-locking on pipes and nuts: no slipping on the workpiece and low handforce required
- High ergonomics thanks to multi-component handles
- Insulated handles allow working under voltage up to 1000V

## Application range

- Insensitive to dirt due to robust construction, hence particularly suitable for outdoor work

## Product features

- 9-notch adjustment positioning
- High wear resistance of the gripping surfaces
- Made in Germany

## Technical data



## Classification

ETIM 5.0 Class-ID: EC000164

ETIM 5.0 Class-Description:

Water pump plier



## Certifications

Insulated according to IEC 60900, applicable up to 1000V AC / 1500V DC VDE-tested



## Material

Chrome vanadium electric steel, forged, multi stage oilhardened

| Article number          | Article designation | Clamping width mm | Jaw distance mm | Weight (kg) | Length (mm) |
|-------------------------|---------------------|-------------------|-----------------|-------------|-------------|
| <b>Water pump plier</b> |                     |                   |                 |             |             |
| 62120505                | WPZI 25             | 50                | 46              | 0.374       | 250         |

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

## Tools and cable accessories

Cutting, Holding, Stripping, Skinning • Electronics pliers

### Electronics pliers



#### Benefits

- Smoothly movement for minimum operator fatigue
- Electrically discharging handles
- High ergonomics thanks to multi-component handles

#### Application range

- For fine assembly and cutting work, e.g. in electronics and fine mechanics
- EGZE 12: For gripping, holding and bending

- ESSE 12: Precise cutting through hardened cutting edges
- ESKE 13: Also for cutting wires resting on a board

#### Product features

- EGZE 12, ESSE 12: Head mirror polished, hence good rust protection
- ESKE 13: Head polished
- Made in Germany

#### Technical data



##### Classification

ETIM 5.0 Class-ID: EC000836  
ETIM 5.0 Class-Description:  
Combination pliers



##### Material

EGZE 12, ESSE 12: High-grade special tool steel, forged, oil-hardened  
ESKE 13: INOX - stainless steel

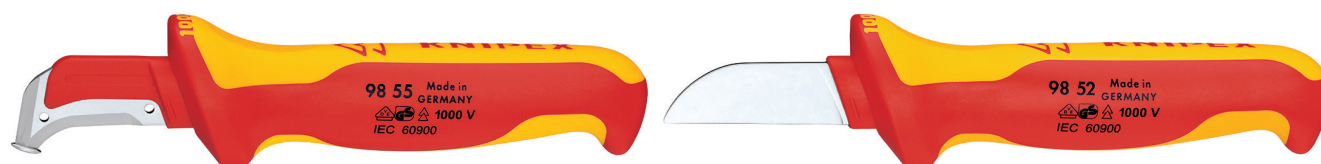
| Article number                         | Article designation | Soft wire mm | Medium hard wire mm | Hard wire mm | Weight (kg) | Length (mm) |
|----------------------------------------|---------------------|--------------|---------------------|--------------|-------------|-------------|
| <b>Electronics plier ESD</b>           |                     |              |                     |              |             |             |
| 62120530                               | EGZE 12             |              |                     |              | 0.074       | 115         |
| <b>Electronics diagonal cutter ESD</b> |                     |              |                     |              |             |             |
| 62120531                               | ESSE 12             | 1.6          | 1.2                 | 0.6          | 0.082       | 115         |
| <b>Electronic Super Knips® ESD</b>     |                     |              |                     |              |             |             |
| 62120532                               | ESKE 13             | 1.6          | 1                   |              | 0.055       | 125         |

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

## Tools and cable accessories

Cutting, Holding, Stripping, Skinning • Stripping tools

### Cable and dismantling knives



#### Benefits

- Particularly confident grip thanks to slip-proof soft components
- Thumb recess and "finger hook" at the end of the handle ensure a good transmission of force when the blade is pulled
- High ergonomics thanks to multi-component handles
- Insulated handles allow working under voltage up to 1000V

#### Application range

- KAMI 19: Solid straight blade for insulation of large cables
- ABMI 18: Dismantling without damaging the conductor insulation

#### Product features

- Transparent protective cap
- ABMI 18: With guide shoe at the blade point
- Made in Germany

#### Technical data



##### Classification

ETIM 5.0 Class-ID: EC000155  
ETIM 5.0 Class-Description:  
Cable knife



##### Certifications

Insulated according to IEC 60900, applicable up to 1000V AC / 1500V DC VDE-tested



##### Material

KAMI 19: Special tool steel, oil-hardened  
ABMI 18: Surgical steel, stainless, vacuum-hardened

| Article number           | Article designation | Blade length mm | Radius mm | Weight (kg) | Length (mm) |
|--------------------------|---------------------|-----------------|-----------|-------------|-------------|
| <b>Cable knife</b>       |                     |                 |           |             |             |
| 62120510                 | KAMI 19             | 50              |           | 0.067       | 190         |
| <b>Dismantling knife</b> |                     |                 |           |             |             |
| 62120511                 | ABMI 18             | 38              | 23.5      | 0.068       | 180         |

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

## Notes

## Notes

# Reach us around the world

...or closer to home. To contact your local Lapp Group representative:

PLEASE VISIT

[www.lappgroup.com/worldwide](http://www.lappgroup.com/worldwide)

Enter the world  
of Lapp:



Our apps are available from  
the following stores:



## The following applies for the use of our products

The conformity of our products to 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 authorised 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 defined 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 0891 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 the current main 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 specialist 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®**  
Power and control cables



**UNITRONIC®**  
Data communication systems



**ETHERLINE®**  
Data communication systems  
for ETHERNET technology



**HITRONIC®**  
Optical transmission systems



**EPIC®**  
Industrial connectors



**SKINTOP®**  
Cable glands



**SILVYN®**  
Protective cable conduit systems  
and cable carrier systems



**FLEXIMARK®**  
Marking systems

Follow the Lapp Group on



**Terms of Trade:**

Our general conditions of sale  
can be downloaded from our website  
[www.lappgroup.com/terms](http://www.lappgroup.com/terms)



**LAPP GROUP**

[www.lappgroup.com](http://www.lappgroup.com)

To contact your local Lapp Group representative,  
please visit [www.lappgroup.com/worldwide](http://www.lappgroup.com/worldwide)