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Selection tables, Technical tables, Item number list, Product list,
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For the second time Lapp Kabel presents new high-tech cables ÖLFLEX TRAIN for Rolling Stock at INNOTRANS 2012.

The product line of the world-famous brand ÖLFLEX® was extended by the line of "TRAIN"- cables. This offers perfect solutions for the market of railway-vehicle and wagon building. Special features: ÖLFLEX® TRAIN-cables are electron-beam cross-linked and fulfils the extremely high requirements of

resistance against mechanical, thermal and chemical stress. Top priority during the development was, to fulfill the typical international Standards for Rolling Stock. If British (BS), French(NF), German(VDE) or European(EN) Standards, all possibilities has been checked and-if realizable-tested and certified.



Electron-beam accelerator to cross-link the new LAPP KABEL TRAIN - cables

Further important criteria

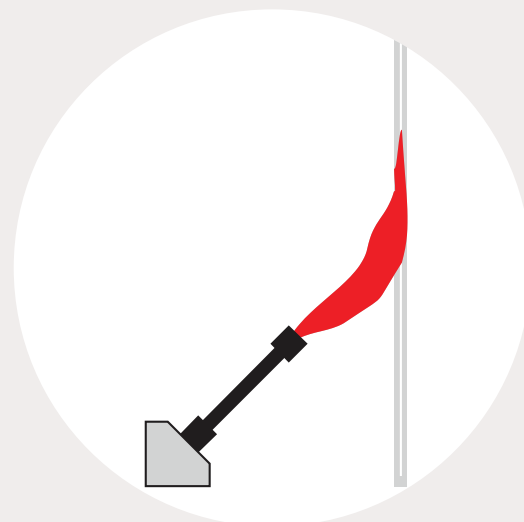
Further important criteria of the new product line: halogen free, highly flexible, thin and light, extremely robust, UV-resistant, very low minus-temperatur range (-45°C), high resistance to fuel and EMC-optimized copper screen for the shielded cables.

ÖLFLEX® TRAIN-cables are characterized by highest fire performance: low fire load, non-flame propagation, self-extinguishing, halogen free (no corrosive and low toxic gases) and low smoke density.

The applications

The applications of the new ÖLFLEX® TRAIN-cables are manifold: for fixed and protected installation (channel, tray, tube) inside and outside of railway-vehicles, for wiring of switchgear, converter and distribution boxes. Also the connection of components like lighting, door opener, step tread, speaker, blower, air conditioner, control panel or between frequency-converter and motor is not a

problem. Especially in areas, where the installation of cables is difficult because of shortage of space, the light and thin products make an impact. In comparison of traditional cables for Rolling Stock the handling of the new ÖLFLEX® TRAIN-cables is much easier, faster and better. If stripping or skinning, these cables can be named as "new generation".



Fire performance of a single cable according to IEC/CEI 60332-1, EN 50265

Technical description and definitions

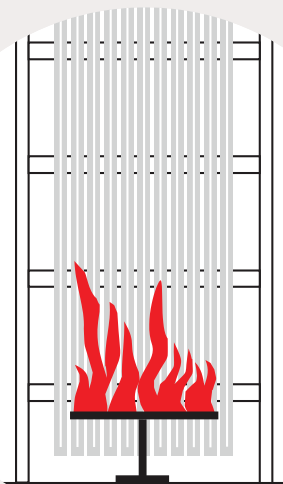


Corrosive gases

Corrosive active gases link with humidity and generate aggressive acids which attack metal parts, thus causing great subsequent damages, even if initial fire damage was small. These damages also do not regard directly the area

affected by the event of fire. Most endangered are electric contacts, electronic devices and apparatus, machines and metal constructions. Even the iron of the concrete reinforcement could be attacked by these acids.

Test procedures



Fire performance of a cable bundle according to IEC/CEI 60332-3, BS 6853: 1999 Clause 6.2.

Halogen free

Halogens are elements of the 7th group in the Periodic Table of elements: chlorine (Cl), fluorine (F), bromine (Br), iodine (I). They are called halogens because in reaction with bases they build salts. (hals: Greek for salt); chlorine reacts with sodium and builds table salt (NaCl).

The halogens are an integrated component of many acids
HCl = Salt acid (hydrochloric acid)

HF = Hydrogenfluorid

HBr = Hydrogenbromid

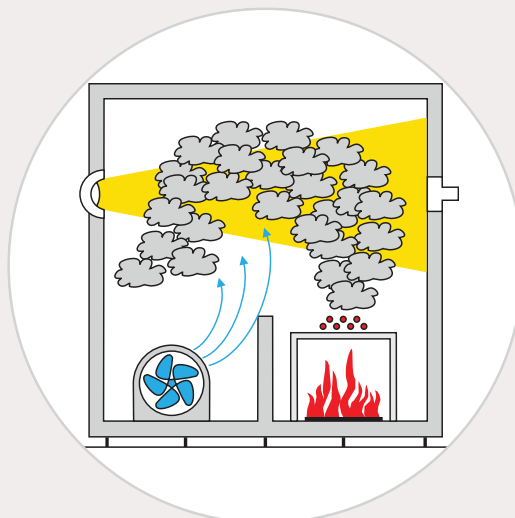
The most popular plastic containing halogens is PVC (polyvinylchloride). In case of fire the chlorine separates and builds in reaction with water

the salt acid (HCl). Therefore the current trend is to replace the halogen containing plastics with halogen free ones. For instance PVC is currently being replaced at a large scale with polyolefin i.e. polyethylene. Thanks to halogen free cables the formation of corrosive and toxic gases can be prevented.

Toxic gases

During combustion small amounts of toxic gases such as CO and CO₂ are inevitably emitted. Combustion gases may not contain any halogen hydrogen compounds (HCl, HF, HBr) nor any strong toxic gases Phosgene, HCN). The same

applies to sulphur and nitric oxides. The toxicity of gases is defined by the so called mortality rates L50. The most relevant international norms hereto are: BS 6853: 1999 Annex B1.



The density of smoke emission can be determined by measuring of the light penetrability according IEC 61034, BS 6853: 1999 Clause 6.2.

The Lapp Group: Three divisions at your service

In 1957, Oskar Lapp, founder of the company, developed **ÖLFLEX®**, the first industrially manufactured control cable in the world. Today, about 2,500 employees in 50 companies around the world contribute daily to the Lapp Group with their dedication, knowledge and ideas. As a result, the range of products extends from cables, cable accessories, cable handling

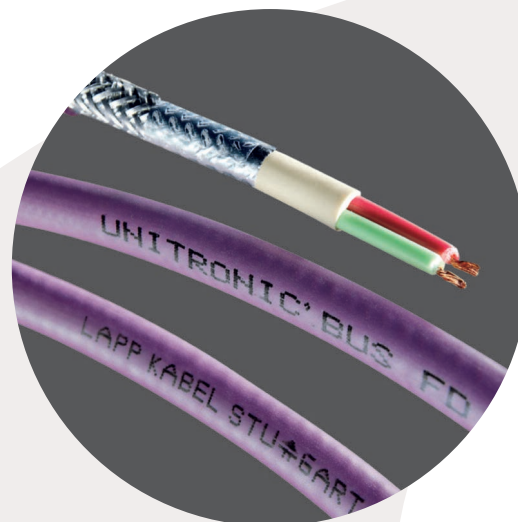
systems, cable harnessing to industrial connectors and communication technology. Based on mutually adapted systems, the range of products and services has been continuously expanded over the years. The Lapp Group provides you a unique product and service portfolio with manufacturer competence.

Wire & Cable, Cable accessories

Lapp Kabel is one of the leading suppliers for wires, cables and cable accessories for machine and plant building, automotive industry, measurement and control technology, electrical and installation engineering, IT and many other industries. To offer you optimum quality, our products are constantly tested at our own Lapp test centres.

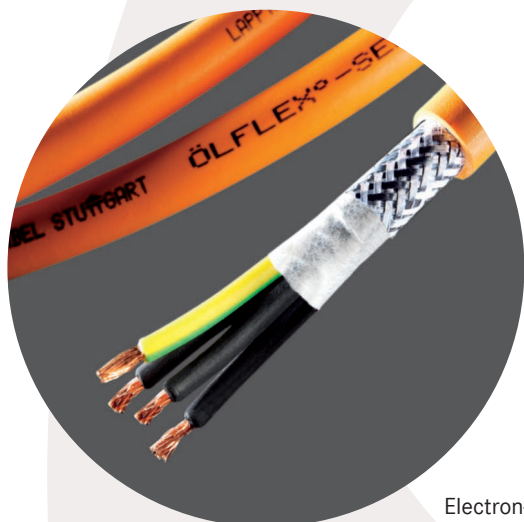
Our product range, for example

- **ÖLFLEX®** connection and control cables
- **ÖLFLEX® – FD** highly flexible cables for power chains
- **ÖLFLEX® – SERVO** cables for servo motors
- **UNITRONIC®** data, LAN and BUS cables
- **HITRONIC®** optical fibre cables
- **SKINTOP®** cable glands
- **SILVYN®** protective cable conduit systems
- **SILVYN® CHAIN** cable carrier systems
- **FLEXIMARK®** cable marking systems

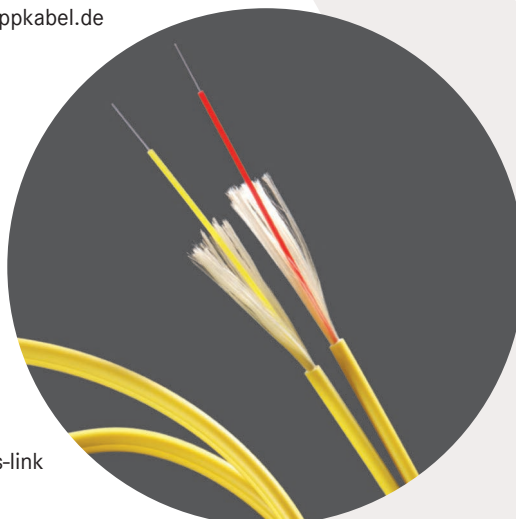


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Electron-beam accelerator to cross-link
the new **ÖLFLEX TRAIN** - cables



Customized cable systems



Industrial connectors

You are making the right decision with **EPIC®** industrial connectors from Contact. More than 30 years of experience have gone into developing connectors for communications engineering, measuring, testing and control engineering, mechanical engineering and instrumentation. Worldwide solutions for customer-specific applications and future-oriented innovations set new standards for passive components in the market.

Our product range

- **EPIC®** rectangular connector housing, series H-A
- **EPIC®** rectangular connector housing, series H-B
- **EPIC®** rectangular connector inserts, series H-A and H-B
- **EPIC®** "Quick & Easy" assembly system for rectangular connector inserts H-B
- **EPIC®** circular connectors "CIRCON"
- **EPIC®** automation products for Profibus and Interbus applications



The more complex the application, the more the cable must be customized. Customer-specific cable systems and spiral cables - Lapp Systems is your specialist in this area. From development to logistics right until production, every thing is under one roof. Always close to you, for example in Germany with four locations in Cologne, Dresden, Bamberg and Stuttgart.

System solutions for

- Mechanical engineering
- Telecommunication
- Medical engineering
- Transportation industry
- Elevator and stage engineering

- Harnessed energy supply systems
- Woven cables
- Harnessed servo conductor systems
- Spiralled conduits with single cores and/or cables
- Spiral cables for trucks
- Harnessed **HITRONIC®** fibre optic cables

Our product range

- Customer-specific cable systems
- **SPIREX®** spiral cables as required

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EPIC®
Industrial connectors



LAPP KABEL

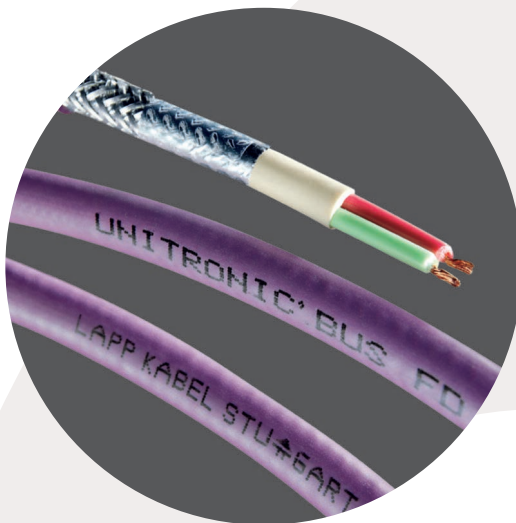
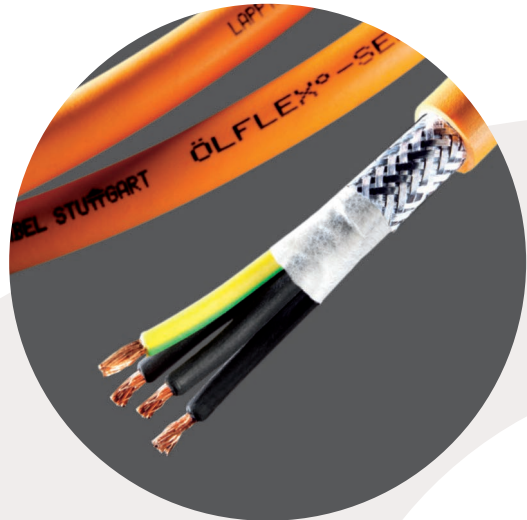
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Our international brands

ÖLFLEX® Connection and control cables

ÖLFLEX® is used in machinery, machine tools, system and appliance engineering, measuring, control, heating and air conditioning technologies.

For permanent connections or in cable chains, halogen-free or internationally certified, you can choose from our comprehensive range of standard products.



UNITRONIC® Data cables

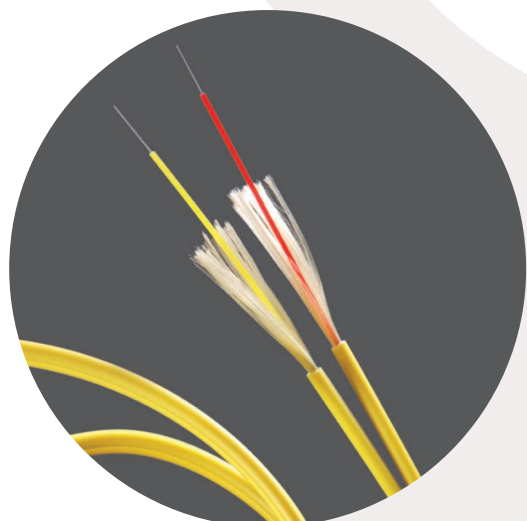
Lapp produces a full range of data cables for fast and secure transfers of large volumes of data. From machine electronics and bus systems

to super-fast LAN data networks or highly-versatile applications: We have the data cables you need for virtually any situation.

HITRONIC® Fibre optic cables

HITRONIC® fibre optic cables are designed to transfer large volumes of data. Communications media via fibre optics are fast, efficient, and secure. Not even electromagnetic interference can affect HITRONIC® fibre optic

cable. The HITRONIC® range of products includes cables for office communications, industrial applications, simplex, duplex, hybrid wiring, or cable chain applications.



SKINTOP® Cable Glands

SKINTOP® cable glands guarantee secure connections every time. Simply thread the cable and twist. That's all! Your cables are perfectly centered, secured, hermetically sealed,

and ready for action. Choose from a wide range of models in plastic or brass, for EX and EMC applications, Halogen-free types or anti-kink protection, metric, PG or NPT.



EPIC® Industrial connectors

When we talk about secure connections, you can take us at our word. EPIC® industrial connectors produce an absolutely secure connection in combination with cables.

We provide the right contact for all your needs: From rectangular or circular connectors, to casings, inserts, contacts and accessories, bus or fibre optic cable applications.

SILVYN® Cable protection and guiding systems

In many applications cables have to be additionally protected against mechanical and chemical stress. For this type of application, Lapp Kabel can supply the universal SILVYN® Protective cable conduit program. Cable conduits manufactured from metal or plastic material, which can be used with matching glands to

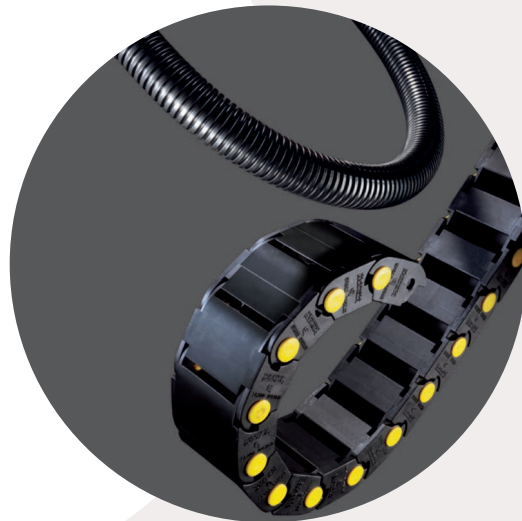
form a perfect system connection. The complete system results in all round protection for cables in indoor and outdoor installations. With SILVYN® CHAIN, Lapp Kabel's widely variable programme of power chains we offer both cable protection and guidance for highly dynamic applications.



FLEXIMARK® Marking systems

Labels on single cores, cables, and control cabinets need to remain legible for years to come. This is the best way to keep things well organized and avoid potential problems.

From plastic to durable stainless steel, manual or electronic identification, with FLEXIMARK® you can be sure that your labels will last a lifetime.



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LAPP KABEL STUTTGART ÖLFLEX® SERVO FD 796 CP

Special application

Rolling Stock

ÖLFLEX TRAIN GKW SC
ÖLFLEX TRAIN GKW MC
ÖLFLEX TRAIN GKW C MC
ÖLFLEX TRAIN 3GKW SC
ÖLFLEX TRAIN 3GKW MC
ÖLFLEX TRAIN 3GKW C MC
ÖLFLEX TRAIN 4GKW
ÖLFLEX TRAIN 4GKW HF (HIGH FLEXIBLE)
ÖLFLEX TRAIN 4GKW C
ÖLFLEX TRAIN 9GKW
ÖLFLEX TRAIN 9GKW C

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ÖLFLEX®

Power and control cables



ÖLFLEX TRAIN GKW SC

ÖLFLEX TRAIN GKW SC

CE



Info

- Meets highest fire protection requirements

Benefits

- High flexibility and slim diameters enable small bending radii at fixed installation
- Easy to strip and to dismantle
- Resistant to mechanical influences in harsh environmental conditions
- Expanded temperature range
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railed vehicles and busses
- Suitable for the connection of fixed and moving objects such as lamps, heating, electrical equipment, wiring of vehicles, terminal boxes and power supply

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame retardant (IEC 60332-1-2)
 - No fire spreading (IEC 60332-3-24, BS6853)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)

Approval(Norm reference)



Design

- Tinned copper strand, special round conductor
- Insulation: Electron beam cross-linked polyolefin copolymer
- Colour: Grey, Black or Green-yellow

Technical data



Conductor stranding

Fine wired according VDE 0295, Class 5 (SRC=Special Round Conductor)



Harsh environment

BS6853 Interior use Ia, Ib, II
Exterior use Ia, Ib, II



Minimum bending radius

fixed installation > 3 X D
Occasional movement > 4 X D



Rated voltage

U_o/U AC 300 / 500 V
U_o/U DC 450 / 750 V



Test voltage

3 KV AC



Range of temperature

Fixed installation:
-45°C up to +125°C max.
Occasional flexing:
-35°C up to +90°C max.
Short circuit: +200°C

No. of core	conductor size (mm ²)	Average out diameter (mm)	Copper Index (kg/km)	Weight (Kg/Km) approx.	Grey	Part Number Black	Green-Yellow
1	0.5	1.5	4.8	6.1	3833220-	3823220-	3843220-
1	0.75	1.7	7.2	8.7	3833221-	3823221-	3843221-
1	1	1.9	9.6	10.9	3833222-	3823222-	3843222-
1	1.5	2.3	14.4	17.2	3833223-	3823223-	3843223-
1	2.5	2.8	24.0	27.8	3833224-	3823224-	3843224-

ÖLFLEX TRAIN GKW MC



Info

- Meets highest fire protection requirements

Benefits

- High flexibility and slim diameters enable small bending radii at fixed installation
- Easy to strip and to dismantle
- Resistant to mechanical influences in harsh environmental conditions
- Expanded temperature range
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railed vehicles and busses
- Suitable for the connection of fixed and moving objects such as lamps, heating, electrical equipment, wiring of vehicles, terminal boxes and power supply

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame retardant (IEC 60332-1-2)
 - No fire spreading (IEC 60332-3-24, BS6853)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)

Approval(Norm reference)



Design

- Tinned copper strand, special round conductor
- Insulation: Electron beam cross-linked polyolefin copolymer
- Core Colour: Grey with black printed numbers
- Outer sheath: Electron beam cross-linked polyolefin copolymer
- Outer sheath colour: Black

Technical data



Conductor stranding

Fine wired according VDE 0295, Class 5 (SRC=Special Round Conductor)



Harsh environment

BS6853 Interior use Ia, Ib, II
Exterior use Ia, Ib, II



Minimum bending radius

≤12mm fixed installation > 3 X D
Occasional movement > 4 X D
>12mm fixed installation > 4 X D
Occasional movement > 5 X D



Rated voltage

U₀/U AC 300 / 500 V
U₀/U DC 450 / 750 V



Test voltage

2 KV AC



Range of temperature

Fixed installation:
-45°C up to +125°C max.
Occasional flexing:
-35°C up to +90°C max.
Short circuit: +200°C

Part Number	No. of core	conductor size (mm²)	Average out diameter (mm)	Copper Index (kg/km)	Weight (Kg/Km) approx.
3823827-	4	0.5	4.9	19.2	36.7
3824230-	7	0.5	5.8	33.6	57.9
3824236-	13	0.5	7.9	62.4	104.0
3824242-	19	0.5	9.0	91.2	145.1
3824260-	37	0.5	12.1	177.6	267.1
3823791-	4	0.75	5.4	28.8	48.9
3824432-	7	0.75	6.5	50.4	78.6
3824438-	13	0.75	8.8	93.6	142.2
3824444-	19	0.75	10.1	136.8	200.1
3824462-	37	0.75	13.5	266.4	372.6
3824473-	48	0.75	15.5	345.6	477.5
3823527-	4	1	5.9	38.4	58.9
3823530-	7	1	7.0	67.2	95.6
3823536-	13	1	9.5	124.8	173.4
3823542-	19	1	11.0	182.4	245.1
3823560-	37	1	14.8	355.2	458.8
3824436-	4	1.5	6.9	57.6	87.1
3824439-	7	1.5	8.4	108.0	147.5
3824445-	13	1.5	11.3	187.2	262.2
3824451-	19	1.5	13.0	273.6	373.4
3824469-	37	1.5	17.7	532.8	705.4
3823378-	2	2.5	7.1	48.0	77.2
3823379-	3	2.5	7.5	72.0	106.8
3823376-	4	2.5	8.3	96.0	137.4

ÖLFLEX TRAIN GKW C MC

ÖLFLEX TRAIN GKW C MC

C €



Info

- Meets highest fire protection requirements

Benefits

- High flexibility and slim diameters enable small bending radii at fixed installation
- Easy to strip and to dismantle
- Resistant to mechanical influences in harsh environmental conditions
- Expanded temperature range
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railed vehicles and busses
- Suitable for the connection of fixed and moving objects such as lamps, heating, electrical equipment, wiring of vehicles, terminal boxes and power supply

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame retardant (IEC 60332-1-2)
 - No fire spreading (IEC 60332-3-24, BS6853)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)

Approval(Norm reference)



Design

- Tinned copper strand, special round conductor
- Insulation: Electron beam cross-linked polyolefin copolymer
- Core Colour: Grey with black printed numbers
- Tinned copper braid
- Outer sheath: Electron beam cross-linked polyolefin copolymer
- Outer sheath colour: Black

Technical data



Conductor stranding

Fine wired according VDE 0295, Class 5 (SRC=Special Round Conductor)



Harsh environment

BS6853 Interior use Ia, Ib, II
Exterior use Ia, Ib, II



Minimum bending radius

≤12mm fixed installation > 5 X D
Occasional movement > 6 X D
>12mm fixed installation > 7 X D
Occasional movement > 8 X D



Rated voltage

U₀/U AC 300 / 500 V
U₀/U DC 450 / 750 V



Test voltage

2 KV AC



Range of temperature

Fixed installation:
-45°C up to +125°C max.
Occasional flexing:
-35°C up to +90°C max.
Short circuit: +200°C

Part Number	No. of core	conductor size (mm²)	Average out diameter (mm)	Copper Index (kg/km)	Weight (Kg/Km) approx.
3823380-	2	0.5	4.9	20.2	34.7
3823381-	3	0.5	5.1	25.1	42.3
3823382-	4	0.5	5.5	30.3	50.7
3823383-	6	0.5	6.4	50.2	68.4
3823385-	8	0.5	7.0	57.7	89.8
3823386-	2	0.75	5.3	25.5	42.8
3823387-	3	0.75	5.6	33.2	53.0
3823388-	4	0.75	6.0	48.5	64.4
3824450-	6	0.75	7.2	68.1	94.8
3824452-	8	0.75	7.7	87.8	116.4
3823389-	2	1	5.7	38.0	48.9
3823390-	3	1	6.0	48.5	61.9
3823391-	4	1	6.4	60.7	76.0
3823395-	6	1	7.7	77.1	111.8
3823396-	8	1	8.5	96.8	141.9
3823392-	2	1.5	6.5	51.1	66.6
3823393-	3	1.5	7.0	67.2	92.3
3823394-	4	1.5	7.6	84.2	113.9
3824458-	6	1.5	9.2	119.0	163.0
3824460-	8	1.5	9.9	146.0	202.9
3824454-	2	2.5	7.8	72.7	104.6
3824455-	3	2.5	8.3	98.1	135.7
3824456-	4	2.5	9.0	125.3	169.6

ÖLFLEX TRAIN 3GKW SC

ÖLFLEX TRAIN 3GKW SC CE



Info

- Meets highest fire protection requirements

Benefits

- High flexibility and slim diameters enable small bending radii at fixed installation
- Easy to strip and to dismantle
- Resistant to mechanical influences in harsh environmental conditions
- Expanded temperature range
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railed vehicles and busses
- Suitable for the connection of fixed and moving objects such as lamps, heating, electrical equipment, wiring of vehicles, terminal boxes and power supply

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame retardant (IEC 60332-1-2)
 - No fire spreading (IEC 60332-3-24)
 - Low fire load (DIN 51900)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)
 - No fluorine (EN 60684-2)

Approval(Norm reference)



Design

- Tinned copper strand, fine wired
- Insulation: Electron beam cross-linked polyolefin copolymer
- Outer sheath colour: Grey, Black or Green-yellow

Technical data



Conductor stranding

Fine wired according VDE 0295, Class 5
(SRC=Special Round Conductor)



Harsh environment

BS6853 Interior use Ia, Ib, II
Exterior use Ia, Ib, II



Minimum bending radius

≤12mm fixed installation > 4 X D
Occasional movement > 5 X D
>12mm fixed installation > 5 X D
Occasional movement > 6 X D



Rated voltage

U₀/U AC 0.6 / 1(1.2) KV
U₀/U DC 0.9 / 1.5 KV



Test voltage

3.5 KV AC



Range of temperature

Fixed installation:
-45°C up to +120°C max.
Occasional flexing:
-35°C up to +90°C max.
Short circuit: +200°C

No. of core	conductor size (mm²)	Average out diameter (mm)	Copper Index (kg/km)	Weight (Kg/Km) approx.	Grey	Black	Green-Yellow
1	0.5	2.1	4.8	8.6	3833293-	3823293-	3843293-
1	0.75	2.3	7.2	11.6	3833294-	3823294-	3843294-
1	1	2.5	9.6	13.8	3833295-	3823295-	3843295-
1	1.5	3.0	14.4	21.5	3833296-	3823296-	3843296-
1	2.5	3.5	24.0	33.1	3833297-	3823297-	3843297-
1	4	3.9	38.4	41.8	3833298-	3823298-	3843298-
1	6	4.5	57.6	59.8	3833299-	3823299-	3843299-
1	10	5.5	96.0	99.0	3833300-	3823300-	3843300-
1	16	7.1	154.0	164.6	3833301-	3823301-	3843301-
1	25	8.9	240.0	254.1	3833302-	3823302-	3843302-
1	35	10.2	336.0	354.2	3833303-	3823303-	3843303-
1	50	12.3	480.0	503.1	3833304-	3823304-	3843304-
1	70	14.4	672.0	698.9	3833305-	3823305-	3843305-
1	95	16.3	912.0	925.3	3833306-	3823306-	3843306-
1	120	18.2	1,152.0	1,154.2	3833307-	3823307-	
1	150	20.4	1,440.0	1,426.0	3833308-	3823308-	
1	185	22.8	1,776.0	1,781.6	3833309-	3823309-	
1	240	25.9	2,304.0	2,309.4	3833310-	3823310-	

ÖLFLEX TRAIN 3GKW MC

ÖLFLEX TRAIN 3GKW MC CE



Info

- Meets highest fire protection requirements

Benefits

- High flexibility and slim diameters enable small bending radii at fixed installation
- Easy to strip and to dismantle
- Resistant to mechanical influences in harsh environmental conditions
- Expanded temperature range
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railed vehicles and busses
- Suitable for the connection of fixed and moving objects such as lamps, heating, electrical equipment, wiring of vehicles, terminal boxes and power supply

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame retardant (IEC 60332-1-2)
 - No fire spreading (IEC 60332-3-24)
 - Low fire load (DIN 51900)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)
 - No fluorine (EN 60684-2)

Approval(Norm reference)



Design

- Tinned copper strand, fine wired
- Insulation: Electron beam cross-linked polyolefin copolymer
- Core Colour: Grey with black printed numbers
- Outer sheath: Electron beam cross-linked polyolefin copolymer
- Outer sheath colour: Black

Technical data



Conductor stranding

Fine wired according VDE 0295, Class 5 (SRC=Special Round Conductor)



Harsh environment

BS6853 Interior use Ia, Ib, II
Exterior use Ia, Ib, II



Minimum bending radius

≤12mm fixed installation > 5 X D
Occasional movement > 6 X D
>12mm fixed installation > 7 X D
Occasional movement > 8 X D



Rated voltage

U₀/U AC 0.6 / 1(1.2) KV
U₀/U DC 0.9 / 1.5 KV



Test voltage

3.5 KV AC



Range of temperature

Fixed installation:
-45°C up to +120°C max.
Occasional flexing:
-35°C up to +90°C max.
Short circuit: +200°C

Part Number	No. of core	conductor size (mm²)	Average out diameter (mm)	Copper Index (kg/km)	Weight (Kg/Km) approx.
3823410-	2	1.5	7.5	28.8	74.9
3823411-	3	1.5	8.0	43.2	96.1
3823413-	4	1.5	8.8	57.6	122.0
3823417-	2	2.5	8.5	48.0	104.7
3823418-	3	2.5	9.1	72.0	137.0
3823420-	4	2.5	10.0	96.0	175.5
3823424-	2	4	9.3	76.8	127.7
3823425-	3	4	9.9	115.2	168.4
3823427-	4	4	11.1	153.6	221.6
3823429-	2	6	10.6	115.2	177.6
3823430-	3	6	11.3	172.8	236.0
3823432-	4	6	12.9	230.4	315.9
3823434-	2	10	13.0	192.0	285.8
3823435-	3	10	13.9	288.0	382.8
3823436-	4	10	15.3	384.0	494.4
3823438-	2	16	16.3	307.2	454.6
3823439-	3	16	17.4	460.8	614.4
3823440-	4	16	19.7	614.4	815.9
3823447-	2	25	20.2	480.0	698.5
3823448-	3	25	21.6	720.0	944.9
3823449-	4	25	24.3	960.0	1,250.2
3823457-	2	35	22.9	672.0	942.0
3823458-	3	35	24.5	1,008.0	1,284.7
3823459-	4	35	27.6	1,344.0	1,700.5
3823493-	2	50	27.5	960.0	1,339.4
3823494-	3	50	29.4	1,440.0	1,825.2
3823495-	4	50	33.0	1,920.0	2,410.7

ÖLFLEX TRAIN 3GKW C MC


Info

- Meets highest fire protection requirements

Benefits

- Cooper screening complies with EMC requirements and protects against electromagnetic interference
- High flexibility and slim diameters enable small bending radii at fixed installation
- Resistant to mechanical influences in harsh environmental conditions
- Expanded temperature range
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railed vehicles and busses
- Suitable for the connection of fixed and moving objects such as lamps, heating, electrical equipment, wiring of vehicles, terminal boxes and power supply

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame retardant (IEC 60332-1-2)
 - No fire spreading (IEC 60332-3-24)
 - Low fire load (DIN 51900)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)
 - No fluorine (EN 60684-2)

Approval(Norm reference)

Design

- Tinned copper strand, fine wired
- Insulation: Electron beam cross-linked polyolefin copolymer
- Core Colour: Grey with black printed numbers
- Tinned copper braid
- Outer sheath: Electron beam cross-linked polyolefin copolymer
- Outer sheath colour: Black

Technical data

Conductor stranding

Fine wired according VDE 0295, Class 5 (SRC=Special Round Conductor)


Harsh environment

BS6853 Interior use Ia, Ib, II
Exterior use Ia, Ib, II


Minimum bending radius

≤12mm fixed installation > 5 X D
Occasional movement > 6 X D
>12mm fixed installation > 7 X D
Occasional movement > 8 X D


Rated voltage

U₀/U AC 0.6 / 1(1.2) KV
U₀/U DC 0.9 / 1.5 KV


Test voltage

C/C 3.5 KV, S/S 3 KV


Range of temperature

Fixed installation:
-45°C up to +120°C max.
Occasional flexing:
-35°C up to +90°C max.
Short circuit: +200°C

Part Number	No. of core	conductor size (mm²)	Average out diameter (mm)	Copper Index (kg/km)	Weight (Kg/Km) approx.
3823460-	2	1.5	8.2	58.8	103.9
3823461-	3	1.5	8.7	73.4	127.1
3823463-	4	1.5	9.5	90.4	156.0
3823467-	2	2.5	9.2	79.0	137.8
3823468-	3	2.5	9.8	106.0	172.4
3823470-	4	2.5	10.9	133.0	219.9
3823474-	2	4.0	10.2	112.0	169.7
3823475-	3	4.0	10.8	153.0	213.4
3823477-	4	4.0	11.8	199.0	266.4
3823479-	2	6.0	11.4	155.0	219.9
3823480-	3	6.0	12.1	218.0	281.4
3823482-	4	6.0	13.6	278.0	366.9
3823484-	2	10.0	13.7	240.0	335.0
3823485-	3	10.0	14.6	340.0	435.5
3823487-	4	10.0	16.0	464.0	552.7
3823490-	2	16.0	17.4	392.0	557.1
3823491-	3	16.0	18.9	553.0	742.3
3823492-	4	16.0	20.8	721.0	939.4
3823500-	2	25.0	21.3	545.3	826.2
3823501-	3	25.0	22.7	766.0	1,081.3
3823502-	4	25.0	25.4	993.4	1,403.1
3823510-	2	35.0	24.6	767.1	1,133.9
3823511-	3	35.0	26.2	1,081.4	1,489.8
3823512-	4	35.0	28.9	1,404.9	1,903.7
3823520-	2	50.0	28.8	1,076.1	1,538.7
3823521-	3	50.0	31.1	1,533.1	2,067.7
3823522-	4	50.0	34.3	1,989.6	2,639.6

ÖLFLEX TRAIN 4GKW

ÖLFLEX TRAIN 4GKW

CE



Info

- Meets highest fire protection requirements

Benefits

- High electrical strength and mechanical durability due to dual-layer cable construction
- High flexibility and slim diameters enable small bending radii at fixed installation
- Resistant to mechanical influences in harsh environmental conditions
- Expanded temperature range
- Excellent chemical resistance and high Flammability rating as well
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railed vehicles and busses
- For connection of stationary and moving parts
- Suitable for cabling of switchboards, converters, panel units and rheostatic braking blocks

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame retardant (IEC 60332-1-2)
 - No fire spreading (IEC 60332-3-24)
 - Low fire load (DIN 51900)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)
 - No fluorine (EN 60684-2)

Approval(Norm reference)



Design

- Tinned copper strand, fine wired
- Insulation: cross-linked polyolefin Copolymer
- Insulation colour: Natural
- Outer Sheath: Electron beam cross-linked polyolefin copolymer
- Outer sheath colour: Black or green-yellow

Technical data



Conductor stranding

Fine wired according VDE 0295, Class 5 (SRC=Special Round Conductor)



Harsh environment

BS6853 Interior use Ia, Ib, II
Exterior use Ia, Ib, II



Minimum bending radius

≤12mm fixed installation > 4 X D
Occasional movement > 5 X D
>12mm fixed installation > 5 X D
Occasional movement > 6 X D



Rated voltage

U₀/U AC 1.8 / 3 KV
U₀/U DC 2.7 KV



Test voltage

6.5 KV AC



Range of temperature

Fixed installation:
-45°C up to +120°C max.
Occasional flexing:
-35°C up to +90°C max.
Short circuit: +200°C

No. of core	conductor size (mm ²)	Average out diameter (mm)	Copper Index (kg/km)	Weight (Kg/Km) approx.	Part Number	
					Black	Green-Yellow
1	1.5	3.6	14.4	26.1	3822082-	3842082-
1	2.5	4.1	24.0	38.2	3822083-	3842083-
1	4	4.5	38.4	47.5	3822084-	3842084-
1	6	5.3	57.6	68.6	3822085-	3842085-
1	10	6.5	96.0	112.4	3822086-	3842086-
1	16	8.5	154.0	189.3	3822087-	3842087-
1	25	10.3	240.0	284.3	3822088-	3842088-
1	35	11.8	336.0	394.0	3822089-	3842089-
1	50	13.9	480.0	550.6	3822090-	3842090-
1	70	15.8	672.0	746.6	3822091-	3842091-
1	95	17.7	912.0	979.0	3822092-	3842092-
1	120	20.0	1,152.0	1,231.6	3822093-	
1	150	21.8	1,440.0	1,492.0	3822094-	
1	185	24.2	1,776.0	1,855.3	3822095-	
1	240	27.1	2,304.0	2,380.6	3822096-	

ÖLFLEX TRAIN 4GKW HF (HIGH FLEXIBLE)

ÖLFLEX TRAIN 4GKW HF CE



Info

- Meets highest fire protection requirements

Benefits

- High electrical strength and mechanical durability due to dual-layer cable construction
- More improved high flexibility than 4GKW and slim diameters enable small bending radii at fixed installation
- Resistant to mechanical influences in harsh environmental conditions
- Expanded temperature range
- Excellent chemical resistance and high Flammability rating as well
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railed vehicles and busses
- For connection of stationary and moving parts
- Suitable for cabling of switchboards, converters, panel units and rheostatic braking blocks
- For carrying energy between cars

Product features

- Fire behaviour :
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame retardant (IEC 60332-1-2)
 - No fire spreading (IEC 60332-3-24)
 - Low fire load (DIN 51900)
- Chemical properties :
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)
 - No fluorine (EN 60684-2)

Approval(Norm reference)



Design

- Tinned copper strand, Super fine wired
- Insulation : cross-linked polyolefin Copolymer
- Insulation colour : Natural
- Outer Sheath : Electron beam cross-linked polyolefin copolymer
- Outer sheath colour : Black or green-yellow

Technical data

Conductor stranding
Fine wired according VDE 0295, Class 6

Harsh environment
BS6853 Interior use Ia, Ib, II
Exterior use Ia, Ib, II

Minimum bending radius
≤12mm fixed installation > 3 X D
Occasional movement > 4 X D
> 12mm fixed installation > 4 X D
Occasional movement > 5 X D

Rated voltage
U₀/U AC 1.8 / 3 KV
U₀/U DC 2.7 KV

Test voltage
6.5 KV AC

Range of temperature
Fixed installation :
-45°C up to +120°C max.
Occasional flexing :
-35°C up to +90°C max.
Short circuit: +200°C

No. of core	conductor size (mm²)	Average out diameter (mm)	Copper Index (kg/km)	Weight (Kg/Km) approx.	Part Number	
					Black	Green-Yellow
1	50	14.3	480.0	547	3852090-	3862090-
1	70	16.4	672.0	752	3852091-	3862091-
1	95	18.3	912.0	968	3852092-	3862092-
1	120	20.7	1,152.0	1,237	3852093-	3862093-
1	150	22.4	1,440.0	1,502	3852094-	3862094-
1	185	24.3	1,776.0	1,834	3852095-	3862095-
1	240	27.1	2,304.0	2,342	3852096-	3862096-

ÖLFLEX TRAIN 4GKW C

ÖLFLEX TRAIN 4GKW C

CE



Info

- Meets highest fire protection requirements

Benefits

- High electrical strength and mechanical durability due to dual-layer cable construction
- High flexibility and slim diameters enable small bending radii at fixed installation
- Resistant to mechanical influences in harsh environmental conditions
- Expanded temperature range
- Excellent chemical resistance and high Flammability rating as well
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railed vehicles and busses
- For connection of stationary and moving parts
- Suitable for cabling of switchboards, converters, panel units and rheostatic braking blocks

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame retardant (IEC 60332-1-2)
 - No fire spreading (IEC 60332-3-24)
 - Low fire load (DIN 51900)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)
 - No fluorine (EN 60684-2)

Approval(Norm reference)



Design

- Tinned copper strand, fine wired
- Insulation: cross-linked polyolefin Copolymer
- Insulation colour: Natural
- Tinned copper braid
- Outer Sheath: Electron beam cross-linked polyolefin copolymer
- Outer sheath colour: Black

Technical data



Conductor stranding

Fine wired according VDE 0295, Class 5 (SRC=Special Round Conductor)



Harsh environment

BS6853 Interior use Ia, Ib, II
Exterior use Ia, Ib, II



Minimum bending radius

≤12mm fixed installation > 5 X D
Occasional movement > 6 X D
>12mm fixed installation > 7 X D
Occasional movement > 8 X D



Rated voltage

U₀/U AC 1.8 / 3 KV
U₀/U DC 2.7 KV



Test voltage

6.5 KV AC



Range of temperature

Fixed installation:
-45°C up to +120°C max.
Occasional flexing:
-35°C up to +90°C max.
Short circuit: +200°C

Part Number	No. of core	conductor size (mm²)	Average out diameter (mm)	Copper Index (kg/km)	Weight (Kg/Km) approx.
3823336-	1	1.5	5.2	25.1	48.1
3823337-	1	2.5	5.7	42.8	63.1
3823338-	1	4	6.5	59.8	80.5
3823339-	1	6	7.9	81.6	121.1
3823340-	1	10	9.3	126.0	178.6
3823341-	1	16	11.0	193.0	255.6
3823342-	1	25	13.2	288.0	378.1
3823343-	1	35	14.6	391.0	490.6
3823344-	1	50	16.5	567.0	660.6
3823345-	1	70	18.3	779.0	867.8
3823346-	1	95	20.3	1,023.0	1,111.7
3823347-	1	120	22.7	1,277.0	1,387.7
3823348-	1	150	25.1	1,576.0	1,691.5
3823349-	1	185	27.5	1,976.0	2,084.5
3823350-	1	240	30.4	2,512.0	2,645.7

ÖLFLEX TRAIN 9GKW



Info

- Meets highest fire protection requirements

Benefits

- High electrical strength and mechanical durability due to dual-layer cable construction
- High flexibility and slim diameters enable small bending radii at fixed installation
- Resistant to mechanical influences in harsh environmental conditions
- Expanded temperature range
- Excellent chemical resistance and high Flammability rating as well
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railed vehicles and busses
- For connection of stationary and moving parts
- Suitable for cabling of switchboards, converters, panel units and rheostatic braking blocks

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame retardant (IEC 60332-1-2)
 - No fire spreading (IEC 60332-3-24)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)

Approval(Norm reference)



Design

- Tinned copper strand, special round Conductor
- Semi-conductive layer
- Insulation: cross-linked polyolefin Copolymer
- Insulation colour: Natural
- Outer Sheath: Electron beam cross-linked polyolefin copolymer
- Outer sheath colour: Black or green-yellow

Technical data



Conductor stranding
Fine wired according VDE 0295, Class 5
(SRC=Special Round Conductor)



Harsh environment
BS6853 Interior use Ia, Ib, II
Exterior use Ia, Ib, II



Minimum bending radius
≤12mm fixed installation > 4 X D
Occasional movement > 5 X D
>12mm fixed installation > 5 X D
Occasional movement > 6 X D



Rated voltage
U₀/U AC 3.6 / 6 KV
U₀/U DC 4.5 KV



Test voltage
11 KV AC



Range of temperature
Fixed installation:
-45°C up to +120°C max.
Occasional flexing:
-35°C up to +90°C max.
Short circuit: +200°C

No. of core	conductor size (mm²)	Average out diameter (mm)	Copper Index (kg/km)	Weight (Kg/Km) approx.	Part Number	
					Black	Green-Yellow
1	2.5	5.1	24.0	49.5	3822932-	3842932-
1	4	5.7	38.4	61.5	3822933-	3842933-
1	6	6.3	57.6	81.8	3822934-	3842934-
1	10	7.7	96.0	131.9	3822935-	3842935-
1	16	9.5	154.0	214.0	3822936-	3842936-
1	25	11.1	240.0	306.8	3822937-	3842937-
1	35	12.6	336.0	417.6	3822938-	3842938-
1	50	14.9	480.0	580.4	3822939-	3842939-
1	70	17.0	672.0	785.2	3822940-	3842940-
1	95	18.9	912.0	1,019.0	3822941-	3842941-
1	120	21.0	1,152.0	1,264.5	3822942-	
1	150	23.2	1,440.0	1,544.7	3822943-	
1	185	25.2	1,776.0	1,885.8	3822944-	
1	240	28.5	2,304.0	2,444.0	3822945-	
1	300	31.6	2,880.0	3,056.4	3822946-	

ÖLFLEX TRAIN 9GKW C

ÖLFLEX TRAIN 9GKW C CE



Info

- Meets highest fire protection requirements

Benefits

- High electrical strength and mechanical durability due to dual-layer cable construction
- High flexibility and slim diameters enable small bending radii at fixed installation
- Resistant to mechanical influences in harsh environmental conditions
- Expanded temperature range
- Excellent chemical resistance and high Flammability rating as well
- Reduced formation of toxic gases and fire spreading in the event of fire increase the protection against damage to persons and property

Application range

- For fixed and protected installations inside or outside of railed vehicles and busses
- For connection of stationary and moving parts
- Suitable for cabling of switchboards, converters, panel units and rheostatic braking blocks

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1)
 - No corrosive gases (IEC 60754-2)
 - No toxic gases (EN 50305)
 - Low smoke density (IEC 61034)
 - Flame retardant (IEC 60332-1-2)
 - No fire spreading (IEC 60332-3-24)
- Chemical properties:
 - Oil and fuel resistance (EN 50305)
 - Ozone resistance (EN 50305)

Approval(Norm reference)



Design

- Tinned copper strand, special round Conductor
- Semi-conductive layer
- Insulation: cross-linked polyolefin Copolymer
- Insulation colour: Natural
- Outer Sheath: Electron beam cross-linked polyolefin copolymer
- Outer sheath colour: Black

Technical data



Conductor stranding

Fine wired according VDE 0295, Class 5 (SRC=Special Round Conductor)



Harsh environment

BS6853 Interior use Ia, Ib, II
Exterior use Ia, Ib, II



Minimum bending radius

≤12mm fixed installation > 5 X D
Occasional movement > 6 X D
>12mm fixed installation > 7 X D
Occasional movement > 8 X D



Rated voltage

U₀/U AC 3.6 / 6 KV
U₀/U DC 4.5 KV



Test voltage

11 KV AC



Range of temperature

Fixed installation:
-45°C up to +120°C max.
Occasional flexing:
-35°C up to +90°C max.
Short circuit: +200°C

Part Number	No. of core	conductor size (mm²)	Average out diameter (mm)	Copper Index (kg/km)	Weight (Kg/Km) approx.
3823354-	1	2.5	7.1	48.0	86.0
3823355-	1	4	8.2	68.4	112.8
3823356-	1	6	9.1	87.7	146.3
3823357-	1	10	10.5	131.0	208.0
3823358-	1	16	12.4	199.0	311.4
3823359-	1	25	14.4	292.0	432.0
3823360-	1	35	15.8	393.0	550.1
3823361-	1	50	18.1	570.0	733.9
3823362-	1	70	20.3	779.0	968.4
3823363-	1	95	22.3	1,027.0	1,221.7
3823364-	1	120	24.9	1,279.0	1,533.9
3823365-	1	150	26.8	1,579.0	1,825.2
3823366-	1	185	29.3	1,976.0	2,219.6
3823367-	1	240	32.6	2,517.0	2,816.7
3823368-	1	300	36.1	3,113.0	3,500.9

Cables for bus system CAN UL/CSA-approved

Characteristic impedance: 120 Ohm

UNITRONIC® BUS CAN

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UNITRONIC® BUS CAN FD P

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Accessories for CAN

EPIC® Data Connectors

EPIC® Data CAN-Bus Connectors 90°

25

EPIC® Data CAN-Bus Connectors 180°

26

UNITRONIC® Fieldbus

Y connectors

Y distributor

27

UNITRONIC® Fieldbus

Passive sensor/actuator boxes

S/A box with M8 slots and master cable

28

S/A box, M8 slots and master cable connection M16/M12

29

S/A box with M12 slots and master cable

New

30

S/A box with M12 slots and master cable connection

31

Field mountable connectors and wall ducts

Field mountable S/A connectors M12

New

32

Field mountable S/A connectors M8

New

33

BUS System Components

BUS M12 connectors that can be assembled

34

Terminating resistor M12 for DeviceNet/CANopen/PROFIBUS

35

M12 T distributor for PROFIBUS

36

S/A T-connector M12 as parallel distributor

37

Coxial cables

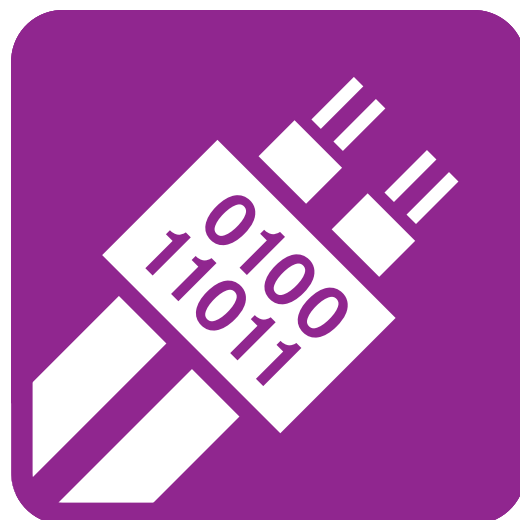
High frequencies

Coaxial - RG

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UNITRONIC®

Data communication systems



UNITRONIC® BUS CAN

LAPP KABEL STUTTGART UNITRONIC® BUS CAN

UNITRONIC® BUS CAN FD P

LAPP KABEL STUTTGART UNITRONIC® BUS CAN FD P



Info

- CAN = Controller Area Network

■ Application range

UNITRONIC® BUS CAN

- Fixed installation

UNITRONIC® BUS CAN FD P

- For highly flexible applications

■ Product features

UNITRONIC® BUS CAN

- Maximum bit rate: 1 Mbit/s for 40 m segment length
- Larger conductor cross-section is necessary with increasing length. Refer to the table below (reference values from ISO 11898).
- ISO 11898 makes recommendations for the segment length, cable cross section and bit rate
- Flame-retardant according to IEC 60332.1.2

UNITRONIC® BUS CAN FD P

- Halogen-free
- Maximum bit rate: 1 Mbit/s for 40 m segment length
- Larger conductor cross-section is necessary with increasing length. Refer to the table below (reference values from ISO 11898).
- ISO 11898 makes recommendations for the segment length, cable cross section and bit rate
- Flame-retardant according to IEC 60332.1.2

■ Approvals



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

■ Design

UNITRONIC® BUS CAN

- 0.22 + 0.34 + 0.5: bare stranded conductor, 7-wire
- 0.75: bare stranded conductor, fine-wire
- Colour-coded in accordance with DIN 47100
- Copper braiding
- PVC outer sheath
- Colour: violet (RAL 4001)

UNITRONIC® BUS CAN FD P

- Stranded bare conductor
- Screening: wrapped with braided copper wires
- PUR outer sheath
- Colour: violet (RAL 4001)
- UV-resistant (but colour may change after some time)

■ Technical data



Mutual capacitance

UNITRONIC® BUS CAN

(800 Hz): max. 40 nF/km

UNITRONIC® BUS CAN FD P

(800 Hz): max. 60 nF/km



Peak operating voltage

UNITRONIC® BUS CAN

(not for power applications) 250 V

UNITRONIC® BUS CAN FD P

250 V (not for power transmission)



Conductor resistance

UNITRONIC® BUS CAN

(loop):

max. 186 Ohm/km

UNITRONIC® BUS CAN FD P

(loop): max. 159.8 Ohm/km



Minimum bending radius

UNITRONIC® BUS CAN

Fixed installation: 8 x outer diameter

UNITRONIC® BUS CAN FD P

Flexing: 15 x outer diameter



Test voltage

Core/core: 1500 V



Temperature range

UNITRONIC® BUS CAN

Fixed installation:

-30°C to +80°C

Flexing: -5°C to +70°C

UNITRONIC® BUS CAN FD P

Fixed installation: -40°C to +80°C

Flexing: -30°C to +70°C



Characteristic impedance

120 Ohm

Article number	Article designation	Number of pairs/conductor cross section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
for fixed installation					
2170260	UNITRONIC® BUS CAN	1 x 2 x 0,22	5.7	16.7	42.0
2170261	UNITRONIC® BUS CAN	2 x 2 x 0,22	7.6	34.8	68.0
2170263	UNITRONIC® BUS CAN	1 x 2 x 0,34	6.8	25.0	55.0
2170264	UNITRONIC® BUS CAN	2 x 2 x 0,34	8.5	46.4	88.0
2170266	UNITRONIC® BUS CAN	1 x 2 x 0,5	7.5	41.6	90.0
2170267	UNITRONIC® BUS CAN	2 x 2 x 0,5	9.7	59.4	106.0
2170269	UNITRONIC® BUS CAN	1 x 2 x 0,75	8.7	52.7	108.0
2170270	UNITRONIC® BUS CAN	2 x 2 x 0,75	11.5	80.6	142.0
For highly flexible applications (power chains, moving machine parts)					
2170272	UNITRONIC® BUS CAN FD P	1 x 2 x 0,25	6.4	24.0	40.0
2170273	UNITRONIC® BUS CAN FD P	2 x 2 x 0,25	8.4	33.0	65.0
2170275	UNITRONIC® BUS CAN FD P	1 x 2 x 0,34	6.8	32.8	60.0
2170276	UNITRONIC® BUS CAN FD P	2 x 2 x 0,34	9.6	52.4	88.0
2170278	UNITRONIC® BUS CAN FD P	1 x 2 x 0,5	8.0	41.9	74.0
2170279	UNITRONIC® BUS CAN FD P	2 x 2 x 0,5	10.8	59.4	100.0

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

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

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

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

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

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

■ Accessories

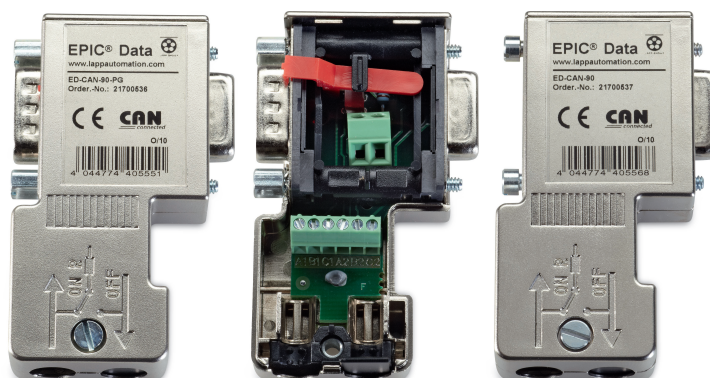
UNITRONIC® BUS CAN

- Multipurpose shears A and B refer to Main Catalogue page 902
- SMARTSTRIP stripping tool refer to Main Catalogue page 907

UNITRONIC® BUS CAN FD P

- SILVYN® CHAIN
- Multipurpose shears A and B refer to Main Catalogue page 902
- SMARTSTRIP stripping tool refer to Main Catalogue page 907

EPIC® Data CAN-Bus Connectors 90°



EPIC® Data CAN-Bus Connectors 90°



Info

- Fully compatible with market standard
- CAN, CANopen, DeviceNet™

Benefits

- With additional 24 V DC output to supply external devices (GND = pin 6, CAN V+ = pin 9)
- Cost-saving due to quick installation
- Easy to connect
- Standardised interfaces
- Small design

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Screw termination
- Adjustable termination resistor is integrated
- The integrated, connectable terminal resistors enable the CAN-Bus to be terminated or connected through
- When used as a through connector, the switch must be in the "OFF" position. If used as a terminating connector, the switch must be in the "ON" position.
- No loose parts

Approvals



Design

- Sub-D plug, 9-pin
- Metallised housing
- For cable diameter: 5.0 to 8.0 mm
- (-PG) With additional programming/diagnostic interface: Sub-D socket, 9-pin

Suitable cables

- Cables for Bus-System CAN Main Catalogue page 329
- Cables for Bus-System DeviceNet Main Catalogue page 327

Technical data

Dimensions
65 mm x 48 mm x 16 mm (LxWxH)

Connection type
Screwing

Degree of soiling
2

Weight
Approx. 40 g

Protection rating
IP20

Cable outlet
90°

Terminating resistor
120 Ohms integrated, and connectable with slide switch

Transmission rate
max. 1 MBit/s

Interfaces
CAN bus station: SUB-D socket, 9-pin
CAN bus cable: 6 terminal blocks for wires up to 1.0 mm²
Sub-D pin assignment:
CAN Low = Pin 2
CAN High = Pin 7
CAN Gnd = Pin 3
GND = Pin 6
CAN V+ = Pin 9

Permissible ambient conditions

Operating temperature:
0°C to +60°C

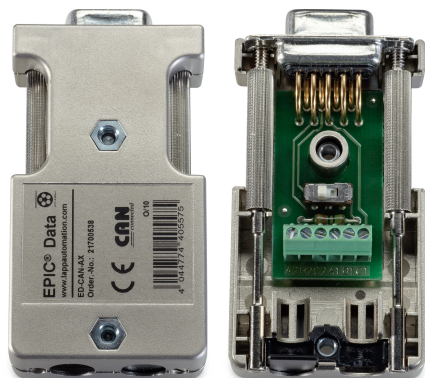
Transport and storage temperature:
-25°C to +75°C

Relative humidity:
max. 75 % at +25°C

Article number	Article designation	Cable outlet	PG	Pieces / PU
EPIC® data CAN bus connectors				
21700537	ED-CAN-90	90°	no	1
21700536	ED-CAN-90-PG	90°	yes	1

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

EPIC® Data CAN-Bus Connectors 180°



EPIC® Data CAN-Bus Connectors 180°



Info

- Fully compatible with market standard
- CAN, CANopen, DeviceNet™

Benefits

- Standardised interfaces
- Cost-saving due to quick installation
- Easy to connect

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Control engineering

Product features

- Screw termination
- Adjustable termination resistor is integrated
- The integrated, connectable terminal resistors enable the CAN-Bus to be terminated or connected through
- When used as a through connector, the switch must be in the "OFF" position. If used as a terminating connector, the switch must be in the "ON" position.
- No loose parts

Approvals



Design

- Sub-D plug, 9-pin
- Metallised housing
- No loose parts
- For cable diameter: 5.0 to 8.0 mm

Design

- Cables for Bus-System CAN Main Catalogue page 329
- Cables for Bus-System DeviceNet Main Catalogue page 327

Technical data



Dimensions

67.5 mm x 35 mm x 17 mm (LxWxH)

Connection type

Screwing

Degree of soiling

2



Weight

Approx. 40 g



Protection rating

IP20

Cable outlet

180°

Terminating resistor

120 Ohms integrated, and connectable with slide switch

Transmission rate

max. 1 MBit/s

Interfaces

CAN bus station: SUB-D socket, 9-pin
 CAN bus cable: 6 terminal blocks for wires up to 1.0 mm²
 Sub-D pin assignment:
 CAN Low = Pin 2
 CAN High = Pin 7
 CAN Gnd = Pin 3

Permissible ambient conditions

Operating temperature:
 0°C to +60°C

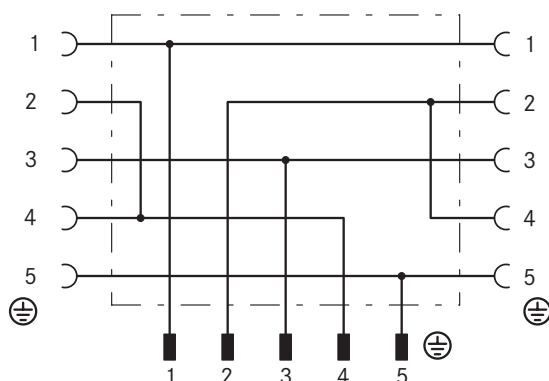
Transport and storage temperature:
 -25°C to +75°C

Relative humidity:
 max. 75 % at +25°C

Article number	Article designation	Cable outlet	PG	Pieces / PU
EPIC® data CAN BUS connectors				
21700538	ED-CAN-AX	180° axial	no	1

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

Y distributor



Y distributor

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- M12 and M8 design
- M12 design with screw hole
- Free of substances that could hinder paint or varnish

Approvals



Technical data

IP	Protection rating IP65/IP67
0	Ambient temperature (operation) Plug/socket -25°C to +90°C
	Contact material CuSn
	Contact surface material Ni/Au
	Coding A - Standard
	Knurl material Zinc die-cast, nickel-plated
	Gripping body material TPU, flame-retardant, self-extinguishing

Article number	Article designation	Nominal voltage U_N (V)	Nominal current I_N (A)	PU
M12 Y distributor, 3-pin, +PE, straight M12 connector to 2 x straight M12 socket, PIN 2+4 bridged				
22260600	AB-C3-M12Y-2XM12FS B E	60	4	5
M12 Y distributor, 3-pin, +PE, straight M12 connector to 2 x straight M12 socket				
22260601	AB-C3-M12Y-2XM12FS E	60	4	5
M12 Y distributor, 5-pin, straight M12 connector to 2 x straight M12 socket, parallel distributor				
22260602	AB-C5-M12Y-2XM12FS V	60	4	5
M8 Y distributor, with 4-pin M8 connector to 2 x 3-pin M8 socket				
22260603	AB-C3-M8Y-2XM8FS	30	3	5
M8 Y distributor, with M8 connector to M8 socket, 3-pin parallel distributor				
22260604	AB-C3-M8Y-2XM8FS V	60	3	5

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

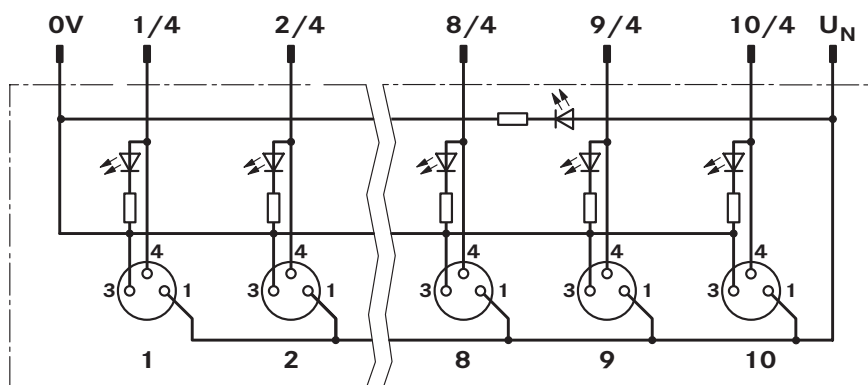
Photographs are not to scale and do not represent detailed images of the respective products.

Note: the table value 'Number of pins' corresponds to the number of pins for sockets

For detailed technical information please refer to the data sheet (www.lappautomation.com)

For the UNITRONIC® field bus type code, please see Main Catalogue table T6

S/A box with M8 slots and master cable



S/A box with M8 slots and master cable

■ Benefits

- Inexpensive and efficient wiring of sensors and actuators
- Instead of numerous individual conductors, one master cable is laid to the control unit
- The master cable is designed as a hybrid that transmits signals and power.
- There are no assembly costs as the master cable is already pre-assembled

■ Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

■ Product features

- With fixed master cable connection
- Single-occupied sensor/actuator box
- LEDs indicate the operating mode of the distributor and the status of the sensors
- Free of substances that could hinder paint or varnish

■ Approvals



■ Design

- PUR/PVC cable
- Fixed flexible control cable
- Outer sheath colour: black

■ Suitable tools

- Suitable tools are available upon request (e.g. M8 torque screwdriver)

■ Technical data



Protection rating
IP65/IP67



Ambient temperature (operation)

-30°C to +80°C
Cable, fixed installation
-40°C to +90°C
Cable, flexible installation
-5°C to 80°C



Current rating per slot
2 A

Article number	Article designation	Length (m)	Number of slots	Nominal voltage U_N (V)	SACB total current (A)	Status display	PU
With M8 master cable connection							
22260026	AB-B4-M8L-4-5,0PUR	5.0	4	24	6	With LEDs	1
22260027	AB-B4-M8L-4-10,0PUR	10.0	4	24	6	With LEDs	1
22260028	AB-B6-M8L-6-5,0PUR	5.0	6	24	6	With LEDs	1
22260029	AB-B6-M8L-6-10,0PUR	10.0	6	24	6	With LEDs	1
22260030	AB-B8-M8L-8-5,0PUR	5.0	8	24	6	With LEDs	1
22260031	AB-B8-M8L-8-10,0PUR	10.0	8	24	6	With LEDs	1
22260032	AB-B10-M8L-10-5,0PUR	5.0	10	24	6	With LEDs	1
22260033	AB-B10-M8L-10-10,0PUR	10.0	10	24	6	With LEDs	1

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

Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

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

For the UNITRONIC® field bus type code, please see table T6

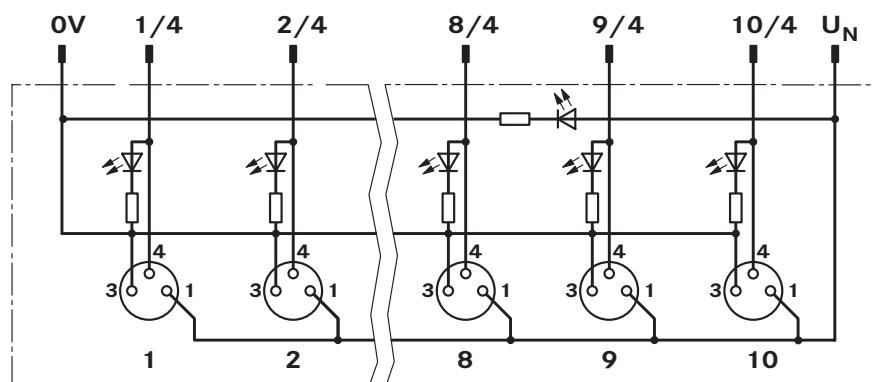
Unused female connectors must be covered with protective caps (see accessories)

For detailed technical information please refer to the data sheet (www.lappautomation.com)

■ Accessories

- Screw plug for unoccupied sockets refer to Main Catalogue page 376

S/A box, M8 slots and master cable connection M16/M12



S/A box, M8 slots and master cable connection M16/M12

Benefits

- Inexpensive and efficient wiring of sensors and actuators
- Instead of numerous individual conductors, one master cable is laid to the control unit
- The detachable screw connection ensures universal pluggability and simple on-site assembly

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- With M12/M16 plug-in connection
- Single-occupied sensor/actuator box
- LEDs indicate the operating mode of the distributor and the status of the sensors
- Free of substances that could hinder paint or varnish

Approvals



Suitable cables

- M16 socket with connected master cable
Main Catalogue page 374
- M12 socket with connected master cable
Main Catalogue page 375

Suitable tools

- Suitable tools are available upon request (e.g. M8 torque screwdriver)

Technical data

IP	Protection rating IP65/IP67
0	Ambient temperature (operation) -30°C to +80°C
Amp.	Current rating per slot 2 A

Article number	Article designation	Number of slots	Nominal voltage U_N (V)	SACB total current (A)	Status display	PU
With M16, 8-pin master cable connection						
22260034	AB-B4-M8L-4-M16	4	24	6	With LEDs	1
With M16, 10-pin master cable connection						
22260035	AB-B6-M8L-6-M16	6	24	6	With LEDs	1
With M16, 12-pin master cable connection						
22260036	AB-B8-M8L-8-M16	8	24	6	With LEDs	1
With M16, 14-pin master cable connection						
22260037	AB-B10-M8L-10-M16	10	24	6	With LEDs	1
With M12, 8-pin master cable connection						
22260038	AB-B4-M8L-4-M12	4	24	4	With LEDs	1
22260039	AB-B6-M8L-6-M12	6	24	4	With LEDs	1

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

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

For the UNITRONIC® field bus type code, please see table T6

Unused female connectors must be covered with protective caps (see accessories)

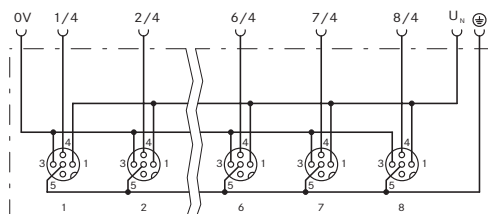
For detailed technical information please refer to the data sheet (www.lappautomation.com)

Accessories

- Screw plug for unoccupied sockets refer to Main Catalogue page 376

New

S/A box with M12 slots and master cable



S/A box with M12 slots and master cable

Benefits

- Inexpensive and efficient wiring of sensors and actuators
- Instead of numerous individual conductors, one master cable is laid to the control unit
- The master cable is designed as a hybrid that transmits signals and power.
- There are no assembly costs as the master cable is already pre-assembled

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- With fixed master cable connection
- Single or double-occupied sensor/actuator box
- With M12 quick-locking system, metal thread
- With LED diagnostic indicator
- Free of substances that could hinder paint or varnish

Approvals



Design

- PUR/PVC cable
- Fixed flexible control cable
- Outer sheath colour: black

Suitable tools

- Suitable tools are available upon request (e.g. M12 torque screwdriver)

Technical data

IP	Protection rating IP65/IP67/IP69K
Amp.	Max. current rating per path 2 A
Amp.	Current rating per slot 4 A

Article number	Article designation	Length (m)	Number of slots	Nominal voltage U _N (V)	SACB total current (A)	Status display	PU
Single-occupied boxes, without LEDs							
22260010	AB-B4-M12-4-5,0PUR	5.0	4	120	12	no	1
22260011	AB-B4-M12-4-10,0PUR	10.0	4	120	12	no	1
22260014	AB-B8-M12-8-5,0PUR	5.0	8	120	12	no	1
22260015	AB-B8-M12-8-10,0PUR	10.0	8	120	12	no	1
Single occupied boxes, with LEDs							
22260018	AB-B4-M12L-4-5,0PUR	5.0	4	24	12	With LEDs	1
22260019	AB-B4-M12L-4-10,0PUR	10.0	4	24	12	With LEDs	1
22260970	AB-B6-M12L-6-5,0PUR	5.0	6	24	12	With LEDs	1
22260022	AB-B8-M12L-8-5,0PUR	5.0	8	24	12	With LEDs	1
22260023	AB-B8-M12L-8-10,0PUR	10.0	8	24	12	With LEDs	1
Double-occupied boxes, without LEDs							
22260012	AB-B4-M12L-8-5,0PUR	5.0	4	120	12	no	1
22260013	AB-B4-M12L-8-10,0PUR	10.0	4	120	12	no	1
22260016	AB-B8-M12L-16-5,0PUR	5.0	8	120	12	no	1
22260017	AB-B8-M12L-16-10,0PUR	10.0	8	120	12	no	1
Double-occupied boxes, with LEDs							
22260020	AB-B4-M12L-8-5,0PUR	5.0	4	24	12	With LEDs	1
22260021	AB-B4-M12L-8-10,0PUR	10.0	4	24	12	With LEDs	1
22260024	AB-B8-M12L-16-5,0PUR	5.0	8	24	12	With LEDs	1
22260025	AB-B8-M12L-16-10,0PUR	10.0	8	24	12	With LEDs	1

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

Copper price basis: inclusive of copper. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.

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

Unused female connectors must be covered with protective caps (see accessories)

For detailed technical information please refer to the data sheet (www.lappautomation.com). For the type code, please refer to table T6.

UL approvals can be found in the data sheet (www.lappautomation.com)

Accessories

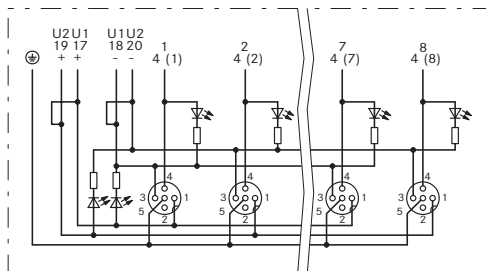
- Screw plug for unoccupied sockets refer to Main Catalogue page 376

S/A box with M12 slots and master cable connection



Info

- For individual master cable assembly



S/A box with M12 slots and master cable connection

Benefits

- Inexpensive and efficient wiring of sensors and actuators
- Instead of numerous individual conductors, one master cable is laid to the control unit
- The detachable screw connection ensures universal pluggability and simple on-site assembly

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- With detachable screw connection
- Single or double-occupied sensor/actuator box
- With M12 quick-locking system, metal thread
- With LED diagnostic indicator
- Free of substances that could hinder paint or varnish

Approvals



Suitable cables

- UNITRONIC® SENSOR master cable bulk stock Main Catalogue page 373

Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to Main Catalogue page 976
- Suitable tools are available upon request (e.g. M12 torque screwdriver)

Technical data

IP	Protection rating IP65/IP68/IP69K
0	Ambient temperature (operation) -30 °C to +80 °C
Amp.	Max. current rating per path 2 A
Amp.	Current rating per slot 4 A

Article number	Article designation	Number of slots	Nominal voltage U _N (V)	SACB total current (A)	Status display	PU
Single-occupied boxes, without LEDs, 4 slots, 1.)						
22260005	AB-B4-M12-4-C	4	120	10	no	1
Single-occupied boxes, without LEDs, 8 slots, 2.)						
22260007	AB-B8-M12-8-C	8	120	10	no	1
Single-occupied boxes, with LEDs, 4 slots, 1.)						
22260001	AB-B4-M12L-4-C	4	24	10	With LEDs	1
Single-occupied boxes, with LEDs, 8 slots, 2.)						
22260003	AB-B8-M12L-8-C	8	24	10	With LEDs	1
Double-occupied boxes, without LEDs, 4 slots, 2.)						
22260006	AB-B4-M12-8-C	4	120	10	no	1
Double-occupied boxes, without LEDs, 8 slots, 3.)						
22260008	AB-B8-M12-16-C	8	120	10	no	1
Double-occupied boxes, with LEDs, 4 slots, 2.)						
22260002	AB-B4-M12L-8-C	4	24	10	With LEDs	1
Double-occupied boxes, with LEDs, 8 slots, 3.)						
22260004	AB-B8-M12L-16-C	8	24	10	With LEDs	1

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

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

Unused female connectors must be covered with protective caps (see accessories)

For detailed technical information please refer to the data sheet (www.lappautomation.com). For the type code, please refer to table T6.

1.) Compatible master cable: 7038880; 2) Compatible master cable: 7038881; 3.) Compatible master cable: 7038882

Accessories

- Screw plug for unoccupied sockets refer to Main Catalogue page 376
- Complete connection hood with 4, 6 or 8 slots refer to Main Catalogue page 376

New

Field mountable S/A connectors M12



Field mountable S/A connectors M12

■ Benefits

- Quick and easy on-site assembly
- Creating individual cable lengths
- Standardised interfaces
- No special tools required for connecting the cables (fast-connect designs)

■ Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

■ Product features

- 4, 5 and 8-pin version
- Screened and non-screened version
- Fast-connect and screw connection design
- Free of substances that could hinder paint or varnish

■ Approvals



■ Suitable cables

- Cable for sensor / actuator components age

■ Technical data



Protection rating
IP 65 / IP 67 (IDC)
IP 67 (screw)



Ambient temperature (operation)
Plug/socket
-25°C to +80°C (IDC)
-25°C to +85°C (piercing)
-40°C to +85°C (screw)

Contact material
CuSn

Contact surface material
CuSnZn

Coding
A - Standard

Article number	Article designation	Number of pins	Min. conductor cross-section, flexible, in mm ²	Max. conductor cross-section, flexible, in mm ²	Min. cable diameter (mm)	Max. cable diameter (mm)	Nominal voltage U _N (V)	Nominal current I _N in (A)	PU
Straight connector, fast-connect (insulation displacement)									
22260132	AB-C4-M12MS-F0,34	4	0.14	0.34	3.5	6	125	4	1
22260134	AB-C4-M12MS-F0,75	4	0.34	0.75	4	8	250	4	1
Straight connector, screw connection									
22260649	AB-C4-M12MS-PG7	4	0.25	0.75	4	6	250	4	1
22260995	AB-C4-M12MS-PG9	4	0.25	0.75	6	8	250	4	1
22260129	AB-C5-M12MS-PG7	5	0.25	0.75	4	6	60	4	1
22260651	AB-C5-M12MS-PG9	5	0.25	0.75	6	8	60	4	1
22260996	AB-C5-M12MS-PG9-SKINTOP®	5	0.25	0.75	6	8	125	4	1
Straight socket, fast-connect (insulation displacement)									
22260131	AB-C4-M12FS-F0,34	4	0.14	0.34	3.5	6	125	4	1
22260133	AB-C4-M12FS-F0,75	4	0.34	0.75	4	8	250	4	1
Straight socket, screw connection									
22260640	AB-C4-M12FS-PG7	4	0.25	0.75	4	6	250	4	1
22260641	AB-C4-M12FS-PG9	4	0.25	0.75	6	8	250	4	1
22260127	AB-C5-M12FS-PG7	5	0.25	0.75	4	6	60	4	1
22260644	AB-C5-M12FS-PG9	5	0.25	0.75	6	8	60	4	1
22260997	AB-C5-M12FS-PG9-SKINTOP®	5	0.25	0.75	6	8	125	4	1
Angled connector, screw connection									
22260647	AB-C4-M12MA-PG7	4	0.25	0.75	4	6	250	4	1
22260130	AB-C5-M12MA-PG7	5	0.25	0.75	4	6	60	4	1
22260648	AB-C5-M12MA-PG9	5	0.25	0.75	6	8	60	4	1
Angled socket, screw connection									
22260636	AB-C4-M12FA-PG7	4	0.25	0.75	4	6	250	4	1
22260128	AB-C5-M12FA-PG7	5	0.25	0.75	4	6	60	4	1
22260638	AB-C5-M12FA-PG9	5	0.25	0.75	6	8	60	4	1
Straight connector, shielded, screw connection									
22260135	AB-C5-M12MS-PG9-SH	5	0.25	0.75	6	8	60	4	1
22260825	AB-C8-M12MS-PG9-SH	8	0.25	0.75	6	8	30	2	1
Straight socket, shielded, screw connection									
22260136	AB-C5-M12FS-PG9-SH	5	0.25	0.75	6	8	60	4	1
22260826	AB-C8-M12FS-PG9-SH	8	0.25	0.75	6	8	30	2	1

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

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

For detailed technical information please refer to the data sheet (www.lappautomation.com)

IDC = insulation displacement connector

For the UNITRONIC® field bus type code, please see Main Catalogue table T6

New

Field mountable S/A connectors M8



Field mountable S/A connectors M8

■ Benefits

- Quick and easy on-site assembly
- Creating individual cable lengths
- Standardised interfaces

■ Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

■ Product features

- 3 and 4-pin version
- Fast-connect and screw connection design
- Free of substances that could hinder paint or varnish

■ Approvals



■ Suitable cables

- Cable for sensor / actuator components
- Page

■ Technical data



Protection rating
IP 65/IP 67 (IDC)
IP 68 (piercing)
IP 67 (screw)



Ambient temperature (operation)
Plug/socket
-25°C to +80°C (IDC)
-25°C to +85°C (piercing)
-40°C to +85°C (screw)

Contact material
CuSn

Contact surface material
Au

Coding
A - Standard

Article number	Article designation	Number of pins	Min. conductor cross-section, flexible, in mm²	Max. conductor cross-section, flexible, in mm²	Min. cable diameter (mm)	Max. cable diameter (mm)	Nominal voltage U _N (V)	Nominal current I _N in (A)	PU
Straight connector, fast-connect (insulation displacement)									
22260993	AB-C3-M8MS-F0,25	3	0.08	0.25	2.5	5	60	4	1
22260985	AB-C3-M8MS-F0,5	3	0.25	0.5	2.5	5	60	4	1
22260043	AB-C4-M8MS-F0,25	4	0.08	0.25	2.5	5	30	4	1
22260044	AB-C4-M8MS-F0,5	4	0.25	0.5	2.5	5	30	4	1
Straight connector, fast-connect (piercing)									
22260122	AB-C3-M8MS-P	3	0.14	0.38	3	5	60	4	1
22260123	AB-C4-M8MS-P	4	0.14	0.38	3	5	30	4	1
Straight connector, screw connection									
22260120	AB-C3-M8MS	3	0.14	0.5	3.5	5	60	4	1
22260121	AB-C4-M8MS	4	0.14	0.5	3.5	5	30	4	1
Straight socket, fast-connect (insulation displacement)									
22260994	AB-C3-M8FS-F0,25	3	0.08	0.25	2.5	5	60	4	1
22260986	AB-C3-M8FS-F0,5	3	0.25	0.5	2.5	5	60	4	1
22260045	AB-C4-M8FS-F0,25	4	0.08	0.25	2.5	5	30	4	1
22260046	AB-C4-M8FS-F0,5	4	0.25	0.5	2.5	5	30	4	1
Straight socket, fast-connect (piercing)									
22260124	AB-C3-M8FS-P	3	0.14	0.38	3	5	60	4	1
22260119	AB-C4-M8FS-P	4	0.14	0.38	3	5	30	4	1
Straight socket, screw connection									
22260125	AB-C3-M8FS	3	0.14	0.5	3.5	5	60	4	1
22260126	AB-C4-M8FS	4	0.14	0.5	3.5	5	30	4	1

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

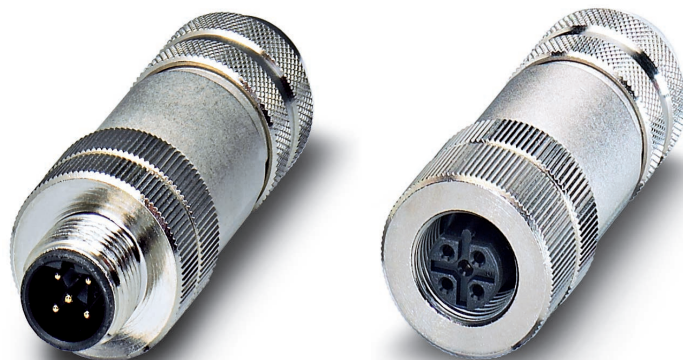
Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet (www.lappautomation.com)

IDC = insulation displacement connector

For the UNITRONIC® field bus type code, please see Main Catalogue table T6

BUS M 12 connectors that can be assembled



BUS M 12 connectors that can be assembled

■ Benefits

- Quick and easy on-site assembly
- Creating individual cable lengths
- Inexpensive and efficient wiring for BUS installations
- Space-saving due to compact dimensions
- Standardised interfaces

■ Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

■ Product features

- Screened version
- For CANopen/DeviceNet applications (A-coded)
- For PROFIBUS applications (B-inverse coded)
- For PROFINET applications (D-coded)
- For Ethernet applications (D-coded)

■ Approvals



■ Suitable cables

- Cables for BUS-Systems PROFIBUS-DP/FMS/FIP Main Catalogue page 302
- Cables for Bus-System CAN Main Catalogue page 329
- Cables for Bus-System DeviceNet Main Catalogue page 327
- PROFIBUS cable: M12 connector on free conductor end Main Catalogue page 391
- ETHERLINE® 2-pairs CAT.5/5e Main Catalogue page [P327]



Info

- For
 - PROFIBUS
 - CANopen
 - DeviceNet
 - PROFINET
 - ETHERNET

■ Technical data

Number of pins
5 (PROFIBUS/CANopen/DeviceNet)
4 (PROFINET/ETHERNET)



Protection rating
IP67



Ambient temperature (operation)
Plug/socket
-40°C to +85°C

Contact material
CuSn

Contact surface material
Au (PROFIBUS/CANopen/DeviceNet)
Ni/Au (PROFINET/ETHERNET)

Coding
A - CANopen/DeviceNet
B - inverse (PROFIBUS)
D - data (PROFINET/ETHERNET)

Knurl material
Nickel-plated brass

Gripping body material
Zinc die-cast, nickel-plated

Sealing material
NBR (PROFIBUS/CANopen/DeviceNet)
Neoprene (PROFINET/ETHERNET)

Contact carrier material
PA 66

Nominal voltage U_N
60 V

Nominal current I_N
4 A (PROFIBUS/CANopen/DeviceNet)
1,75 A (PROFINET/ETHERNET)

PG screw connection
PG 9 (PROFIBUS/CANopen/DeviceNet)

Article number	Article designation	Min. conductor cross-section, flexible, in mm ²	Max. conductor cross-section, flexible, in mm ²	Min. conductor cross-section AWG/kcmil	Max. conductor cross-section AWG/kcmil	Min. cable diameter (mm)	Max. cable diameter (mm)	PU
PROFIBUS, 5-pin straight connector, screw connection								
22260653	AB-C5-M12MSB-PG9-SH-AU	0.25	0.75	24	18	6	8.5	1
PROFIBUS, 5-pin straight socket, screw connection								
22260646	AB-C5-M12FSB-PG9-SH-AU	0.25	0.75	24	18	6	8.5	1
PROFINET/ETHERNET, 4-pin straight connector, fast-connection								
22260820	AB-C4-M12MSD-SH	0.14	0.34	26	22	4	8	1
CANopen/DeviceNet, 5-pin straight connector, screw connection								
22260135	AB-C5-M12MS-PG9-SH	0.25	0.75	24	18	6	8	1
CANopen/DeviceNet, 5-pin straight socket, screw connection								
22260136	AB-C5-M12FS-PG9-SH	0.25	0.75	24	18	6	8	1

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

Terminating resistor M 12 for DeviceNet/CANopen/PROFIBUS



Info

- Fully industrialised



Terminating resistor M 12 for DeviceNet/CANopen/PROFIBUS

Benefits

- Inexpensive termination of BUS cables
- Space-saving due to compact dimensions
- Robust design
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- Free of substances that could hinder paint or varnish
- For DeviceNet und CANopen applications (A-Standard coded)
- For PROFIBUS applications (B-inverse coded)

Approvals



Design

- Straight connector M12 with integrated termination resistor

Technical data



Protection rating
IP65/IP68/IP69K



Ambient temperature (operation)
Plug/socket
-25°C to +90°C

Contact material
CuSn

Contact surface material
Ni/Au

Coding
B - inverse (PROFIBUS)
A - Standard (DeviceNet/CANopen)

Knurl material
Zinc die-cast, nickel-plated

Gripping body material
TPU, flame-retardant, self-extinguishing

Sealing material
VITON®

Contact carrier material
TPU GF

Nominal voltage U_N
60 V

Nominal current I_N
4 A

Article number	Article designation	Nominal current I_N in (A)	Nominal voltage U_N (V)	Coding	Number of pins	PU
For PROFIBUS applications (B-inverse coded)						
22260722	AB-C4-M12MS-PB-TR	4	60	B - inverse	4	5
For DeviceNet und CANopen applications (A-Standard coded)						
22260766	AB-C5-M12MS-DN-TR	4	60	A - Standard	5	5

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

DeviceNet is a registered trademark of ODVA

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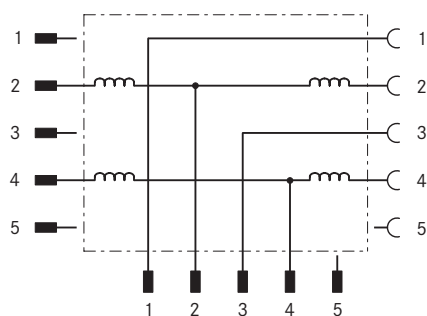
For detailed technical information please refer to the data sheet (www.lappautomation.com)

For the UNITRONIC® field bus type code, please see table T6

Accessories

- M12 T distributor for PROFIBUS refer to page 397
- S/A T-connector M12 as parallel distributor refer to Main Catalogue page 398

M 12 T distributor for PROFIBUS



M 12 T distributor for PROFIBUS

■ Benefits

- Inexpensive and efficient wiring for PROFIBUS installations
- Space-saving due to compact dimensions
- Robust design
- Standardised interfaces

■ Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

■ Product features

- 4-pin PROFIBUS T-connector
- M 12 B-coded (inverse)
- Screened version
- M 12 plug to M 12 plug and M 12 socket
- Free of substances that could hinder paint or varnish

■ Approvals



Info

- Fully industrialised

■ Technical data



Protection rating
IP 67



Ambient temperature (operation)
Plug/socket
-25°C to +80°C

Contact material
Copper alloy

Contact surface material
Ni/Au

Coding
B - inverse

Knurl material
Nickel-plated brass

Gripping body material
PUR

Sealing material
VITON®

Contact carrier material
PUR

Nominal voltage U_N
60 V

Nominal current I_N
4 A

Article number	Article designation	Nominal current I_N in (A)	Nominal voltage U_N (V)	Number of pins	PU
22260761	AB-C2-M12T-2XM12FS PB	4	30	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.
For detailed technical information please refer to the data sheet (www.lappautomation.com)
For the UNITRONIC® field bus type code, please see table T6

■ Accessories

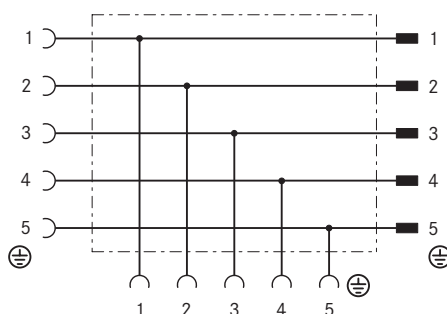
- Terminating resistor M 12 for DeviceNet/CANopen/PROFIBUS refer to Main Catalogue page 396



Info

- For DeviceNet and CANopen!

S/A T-connector M12 as parallel distributor



S/A T-connector M12 as parallel distributor

Benefits

- Cost-effective and efficient wiring of field bus installations, sensors and actuators
- Space-saving due to compact dimensions
- Robust design
- Standardised interfaces

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- 5-pin DeviceNet/CANopen T-Connector
- M12 A-coded
- Parallel distributor with M12 socket to M12 plug and M12 socket
- Free of substances that could hinder paint or varnish

Approvals



Technical data

Number of pins
5

IP Protection rating
IP65/IP68/IP69K

Ambient temperature (operation)
Plug/socket
-25°C to +90°C

Contact material
CuZn

Contact surface material
Ni/Au

Coding
A - Standard

Knurl material
Zinc die-cast, nickel-plated

Gripping body material
TPU, flame-retardant, self-extinguishing

Sealing material
NBR

Contact carrier material
TPU GF

Nominal voltage U_N
60 V

Nominal current I_N
4 A

Article number	Article designation	Nominal current I_N in (A)	Nominal voltage U_N (V)	Number of pins	PU
22260765	AB-C5-M12T-2XM12FS DN	4	60	5	5

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

DeviceNet is a registered trademark of ODVA

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

For detailed technical information please refer to the data sheet (www.lappautomation.com)

For the UNITRONIC® field bus type code, please see table T6

Accessories

- Terminating resistor M12 for DeviceNet/CANopen/PROFIBUS refer to Main Catalogue page 396

Coaxial cables

High frequencies

Coaxial - RG



■ Benefits

- Coaxial cables allow distortion-free and low-attenuation transmission of signals with a high bandwidth.
- High frequencies

■ Application range

- For applications with limited movements and for fixed installation in dry or damp interiors and outdoors
- For radio and computer systems, as well as all applications related to commercial radio-frequency technology and electronics

■ Product features

- Flame-retardant according to IEC 60332.1.2

■ Approvals



■ Design

- Coaxial cables are significantly less sensitive to external interference due to their structure.

■ Technical data

Dielectric constant

- Polyethylene (PE) 2.3
- Polyethylene, hollow (PE-ho) 1.5
- Polytetrafluoroethylene (PTFE) 2.1



Minimum bending radius

Fixed installation: 6 x outer diameter



Temperature range

Fixed installation: PE outer sheath:
-40°C to +80°C
Fixed installation: PVC outer sheath:
-40°C to +80°C
Fixed installation: fluoroplastic
-55°C to +250°C



Specifications and approvals

Similar to MIL C-17F

Article number	Article designation	Characteristic impedance in Ohm	Capacity pF/m	Attenuation approx. dB/100 m at 200 MHz/400 MHz	Propagation rate (%)	Operating voltage 50 Hz eff. kV	Test voltage (kV)	Inner conductor material	Internal Ø	Dielectric material	Dielectric Ø	Outer conductor material	Outer cable sheath	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170000	RG-58 C/U	50 +/- 2 Ω	101	24 / 33	66	2.0	5.0	CuLivz	0.90	PE	2.95	Cvz	PVC	4.95	19.1	38
2170001	RG-174 A/U	50 +/- 2 Ω	101	40 / 59	66	1.5	2.0	StCuLibl	0.48	PE	1.52	Cvz	PVC	2.80	5.4	12
2170002	RG-178 B/U	50 +/- 2 Ω	95	63 / 93	70	0.7	2.0	StCuLivs	0.30	PTFE	0.86	Cvs	FEP	1.91	4.4	9
2170003	RG-188 A/U	50 +/- 2 Ω	95	47 / 56	70	1.5	2.0	StCuLivs	0.51	PTFE	1.52	Cvs	PTFE	2.76	8.3	17.5
2170005	RG-213 /U	50 +/- 2 Ω	101	10 / 15	66	5.0	10.0	CuLibl	2.25	PE	7.25	Cbl	PVC	10.30	75.8	157
2170006	RG-214 /U	50 +/- 2 Ω	101	9 / 14	66	5.0	10.0	CuLivs	2.25	PE	7.25	CvsCvs	PVC	10.80	117.8	207
2170007	RG-223 /U	50 +/- 2 Ω	101	23 / 34	66	2.0	3.0	CuMvs	0.89	PE	2.95	CvsCvs	PVC	5.50	38.5	60
2170016	RG-6 A/U	75 +/- 3 Ω	67	14 / 20	66	2.0	5.0	StCuMbl	0.72	PE	4.70	Cbl	PVC	8.40	72.0	120
2170009	RG-11 A/U	75 +/- 3 Ω	67	11 / 16	66	5.0	10.0	CuLivz	1.20	PE	7.30	Cbl	PVC	10.30	55.5	140
2170011	RG-11 A/U outdoor	75 +/- 3 Ω	67	11 / 16	66	5.0	10.0	CuLivz	1.20	PE	7.30	Cbl	PVC	12.10	55.5	170
2170012	RG-59 B/U	75 +/- 3 Ω	67	16.5/23	66	1.7	7.0	StCuMbl	0.60	PE	3.70	Cbl	PVC	6.15	25.0	57
2170010	RG-187 A/U	75 +/- 3 Ω	65	47 / 56	70	1.5	2.0	StCuLivs	0.31	PTFE	1.52	Cvs	PTFE	2.80	7.3	17
2170008	RG-62 A/U	93 +/- 5 Ω	43	15 / 19	75	0.8	2.0	StCuMbl	0.65	PE hollow	3.70	Cbl	PVC	6.15	24.0	52

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

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

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

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

Accessories for INDUSTRIAL networking

LAN cables for structured industrial cabling

ETHERLINE® Cat.5e	40
ETHERLINE® Cat.5e FLEX	40
ETHERLINE® Cat.5e FD	41
ETHERLINE® Cat.5 FD BK	41
ETHERLINE® Cat.5 ARM	42
ETHERLINE® Cat.5 FRNC HYBRID	42
ETHERLINE® PN Cat.5	43
ETHERLINE® PN FLEX	43
ETHERLINE® PN Cat.5 FD	43
ETHERLINE® Y Cat.5e BK 2x2AWG22/7	New 44
ETHERLINE® TORSION Cat. 5	44
ETHERLINE® Cat.6 _A + Cat.7	45
ETHERLINE® CAT.6 FD	New 45

Components for building-networking

LAN cables for structured building cabling

UNITRONIC® LAN 200 - CAT.5e	New 46
UNITRONIC® LAN 250 - CAT.6	New 47
UNITRONIC® LAN 500 - Cat.6 _A	New 48

RJ45 Ethernet connector

UNITRONIC® LAN 1000 S/FTP Cat.7	New 49
UNITRONIC® LAN 1200 S/FTP Cat.7 _A	New 50
UNITRONIC® LAN 1500 S/FTP Cat.7 _A	New 50
UNITRONIC® LAN OUTDOOR	New 51
UNITRONIC® LAN FLEX	New 51
Connector RJ45 CAT.5 Hirose TM11	52
Connector RJ45 CAT.5 Stewart SS37	52
Field-Terminable Connector RJ45 CAT.5e FM45	52
Connector RJ45 CAT.6 Hirose TM21	53
Connector RJ45 Cat.6 _A fieldmountable	New 53

ETHERLINE®

Data communication systems
for ETHERNET-Technology



ETHERLINE® Cat.5e

Fixed installation

LAPP KABEL STUTTGART ETHERLINE® CAT.5e

LAPP KABEL STUTTGART ETHERLINE® H-H CAT.5e

Benefits

- Very low installation cost due to the use of Ethernet cables
- Screened against interference

Application range

- 10/100 Mbit/s for Industrial Ethernet
- Seamless communication from the sensor/ actuator level to the Internet
- Industrial use
- Suitable for fixed installation in dry and damp rooms

Product features

- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference

- PUR outer sheath is highly resistant to mineral oils and abrasion
- Halogen-free and flame-retardant FRNC outer sheath

Approvals



Design

- Solid conductor
- Core insulation made of foam skin
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath as either PUR or LSZH
- Colour: water blue (RAL 5021)
- 2 or 4-pair version

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version					
Halogen-free compound					
2170280	ETHERLINE® H CAT.5e	2 x 2 x AWG24/1	5.8	22.0	45
PUR outer sheath, halogen-free					
2170281	ETHERLINE® P CAT.5e	2 x 2 x AWG24/1	5.8	22.0	53
4-pair version					
Halogen-free compound					
2170296	ETHERLINE® H CAT.5e	4 x 2 x AWG24/1	6.3	32.0	54
2170298	ETHERLINE® H-H CAT.5e	4 x 2 x AWG24/1	6.0 / 7.5	32.0	80
Outer sheath: PUR, halogen-free					
2170297	ETHERLINE® P CAT.5e	4 x 2 x AWG24/1	6.3	32.0	62

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

ETHERLINE® Cat.5e FLEX

Flexible use

LAPP KABEL STUTTGART ETHERLINE® Flex CAT.5

LAPP KABEL STUTTGART ETHERLINE® P Flex CAT.5e

Benefits

- For directly connecting two electric components
- Very low installation cost due to the use of Ethernet cables
- Screened against interference

Application range

- Suitable for fixed installation in dry and damp rooms
- 10/100 Mbit/s for Industrial Ethernet
- For flexible applications (7-wire stranded conductor)
- Industrial use

Product features

- Premium screening against electromagnetic interference
- Halogen-free outer sheath
- PUR outer sheath is highly resistant to mineral oils and abrasion

Design

- Stranded conductor, 7-wire, bare
- Core insulation made of foam skin
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath as either PUR or LSZH
- Colour: water blue (RAL 5021)
- 2 or 4-pair version

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version					
Halogen-free compound					
2170283	ETHERLINE® H Flex CAT.5e	2 x 2 x AWG26/7	5.4	19.0	43
PUR outer sheath, halogen-free					
2170284	ETHERLINE® P Flex CAT.5e	2 x 2 x AWG26/7	5.8	19.0	45
4-pair version					
Halogen-free compound					
2170299	ETHERLINE® H Flex CAT.5e	4 x 2 x AWG26/7	6.1	25.0	48
Outer sheath: PUR, halogen-free					
2170300	ETHERLINE® P Flex CAT.5e	4 x 2 x AWG26/7	6.1	25.0	54

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



Info

- Industrial Ethernet cable
- Cat.5e

Technical data



Peak operating voltage
(not for power applications) 125 V



Minimum bending radius
Fixed installation: see data sheet



Test voltage
Core/core: 1000 V
Core/screen: 500 V



Temperature range
During installation: -5 °C to +60 °C
Operation: see data sheet



Characteristic impedance
100 Ohm +/- 15%



Info

- Industrial Ethernet cable
- Cat.5e
- Only for patch cable applications (max. 60 m)

Technical data



Peak operating voltage
(not for power applications) 125 V



Minimum bending radius
See data sheet



Test voltage
Core/core: 1000 V
Core/screen: 500 V



Temperature range
During installation: -5 °C to +60 °C
Operation: see data sheet



Characteristic impedance
100 Ohm +/- 15%



Info

- Industrial Ethernet cable
- For highly flexible applications
- Only for patch cable applications (max. 60 m)

Benefits

- Very low installation cost due to the use of Ethernet cables
- Screened against interference
- Seamless communication from the sensor/ actuator level to the Internet

Application range

- 10/100 Mbit/s for Industrial Ethernet
- Industrial use
- Power chain applications
- Dry or damp rooms

Product features

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

Design

- Braided conductor, 19-wire
- Inner sheath: thermoplastic elastomer, halogen-free
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- PUR outer sheath
- Colour: water blue (RAL 5021)
- 2 or 4-pair version

Technical data



Peak operating voltage
(not for power applications) 125 V



Minimum bending radius
Flexing: 15 x outer diameter
Fixed installation: 8 x outer diameter



Test voltage
Core/core: 1000 V
Core/screen: 500 V



Temperature range
Flexing: -20 °C to +70 °C
Fixed installation:
-30 °C to +80 °C



Characteristic impedance
100 Ohm ± 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version					
2170289	ETHERLINE® FD P CAT.5e	2 x 2 x AWG26/19	6.1	20.0	48
4-pair version					
2170489	ETHERLINE® FD P CAT.5e	4 x 2 x AWG26/19	6.3	27.0	54

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

ETHERLINE® Cat.5 FD BK

The Ethernet cable for installation in events

LAPP KABEL STUTTGART ETHERLINE® CAT.5 FD BK



Info

- Suitable for outdoor use and direct burial
- Usable on the roads
- CAT.5-Performance

Benefits

- Very low installation cost due to the use of Ethernet cables
- Additional application options thanks to suitability for outdoor use, UV-resistant
- Good flexibility - easy installation with tight space requirements
- Screened against interference
- Easy to coil for mobile use

Application range

- Suitable for the transfer of audio signals (ETHERSOUND), light control signals (DMX over Ethernet), or for computer networking

Product features

- ETHERLINE® CAT.5 FD BK is a highly flexible, halogen-free, CATEGORY 5 high-speed data transmission cable, which specifically developed for road environments.
- Complies with standards EIA/TIA-568, TSB-36 and ISO/IEC IS 11801

Approvals



Design

- Bare stranded copper wire, 26AWG (19 x 0.10), (0.14 mm²)
- Insulation: foam skin, max. core diameter 1.0 mm
- Twisting: 2 twisted-pair cores, stranding from 4 pairs
- Inner sheath: halogen-free TPE compound
- Screening: braided tinned-copper wires, coverage of 85% ± 5
- Outer sheath: halogen-free PUR, black

Technical data



Minimum bending radius
95 mm



Temperature range
Flexible use: -5 °C to +50 °C
Fixed installation: -40 °C to +70 °C

Article number	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
CE217489	4x2xAWG26/19	6.3	27.0	54

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Standard lengths: (100; 500; 1000) m
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ETHERLINE® FD P CAT.5

ETHERLINE® Cat.5 ARM

Fixed installation

LAPP KABEL STUTTGART ETHERLINE® Y2Y ARM TYPE A CAT.5



Info

- Industrial Ethernet cable
- With armouring for improved rodent protection

Benefits

- Very low installation cost due to the use of Ethernet cables
- EMC-optimised
- Rodent-protection

Application range

- Can be used for Industrial Ethernet in harsh industrial environments
- 10/100 Mbit/s for Industrial Ethernet

Product features

- CAT.5-Performance

Design

- Solid and bare copper conductor
- Core insulation: PE
- Overlapping plastic tape
- Overall screening with copper braid and plastic-laminated aluminium foil
- Inner sheath made of PVC (green) 2 layer galvanizid steel tape
- Outer sheath made of black polyethylene (PE)

Technical data



Minimum bending radius

Fixed installation:
10 x cable diameter
Fixed installation: 5 x cable diameter, once



Test voltage

Core/core: 2000 V
Core/screen: 2000 V



Temperature range

Operation: -40 °C to +70 °C
During installation: -20°C to +60°C



Characteristic impedance

100 Ohm +/- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170496	ETHERLINE® Cat.5 ARM	2 x 2 x AWG22/1	9.3	30.4	124

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

ETHERLINE® Cat.5 FRNC HYBRID

Flexible use

LAPP KABEL STUTTGART ETHERLINE® FRNC HYBRID



Info

- HYBRID: cable for data transmission + power supply

Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required

Application range

- Industrial Ethernet cable
- 10/100 Mbit/s for Industrial Ethernet
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference

Product features

- Flame-retardant according to IEC 60332.1.2
- HYBRID: cable for data transmission + power supply

Design

- Colour: green (based on RAL 6018)
- Cores for Power Supply 4 x 1.5 mm2 (AWG16)
- Data transfer: braided conductor, 7-wire, bare
- Screening: wrapped with foil and braided copper wires
- Twisting: data pairs and power supply pairs twisted together
- Overlapping plastic tape
- FRNC outer sheath

Technical data



Minimum bending radius

Fixed installation:
10 x cable diameter
Fixed installation: 5 x cable diameter, once



Test voltage

See data sheet



Temperature range

Operation: -20°C to +70°C



Characteristic impedance

impedance

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170887	ETHERLINE® Cat.5 FRNC HYBRID	2x2xAWG22/7 + 4x1.5	10.3	94.2	153

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

ETHERLINE® PN Cat.5

Fixed installation

Info

- Conductor: AWG22 = PROFINET-compliant
- CAT.5/5e

Benefits

- For Profinet applications
- Screened against interference

Application range

- for industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702

Product features

- Fixed installation
- FC: "Fast Connect" cable design

- Flame-retardant according to IEC 60332-1-2
- ETHERLINE® Y FC version: flame-retardant according to IEC 60332-3

Design

- Solid and bare copper conductor
- Core insulation: PE
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PVC

Technical data

Minimum bending radius
See data sheet

Test voltage
See data sheet

Temperature range
See data sheet

Characteristic impedance
100 Ohm +- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170891	ETHERLINE® PN Cat.5e Y	2 x 2 x AWG22/1	6.4	30.4	56
FC: "Fast Connect" cable design					
2170893	ETHERLINE® Y FC UL/CSA (CMG) CAT.5	2 x 2 x AWG22/1	6.5	30.4	70
Suitable for outdoor use and direct burial					
2170494	ETHERLINE® PN Cat.5e YY	2 x 2 x AWG22/1	7.8	30.4	62

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

ETHERLINE® PN FLEX


Info

- for Profinet applications
- CAT.5-Performance
- Flexible use

Benefits

- Screened against interference
- Conductor: AWG22 = PROFINET-compliant

Application range

- for industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702

Product features

- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test

Design

- Stranded 7-wire bare conductor
- Core insulation: PE
- Inner sheath made of PVC
- Overall screening with copper braid and plastic-laminated aluminium foil
- PVC-based outer sheath
- Colour: green

Technical data

Minimum bending radius
Fixed installation: 7 x outer diameter
Fixed installation: 3 x outer diameter

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

Temperature range
Operation: -40 °C to +70 °C

Characteristic impedance
100 Ohm +- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170886	ETHERLINE® PN Cat.5 Y FLEX FC	2 x 2 x AWG22/7	6.5	31.3	67

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

ETHERLINE® PN Cat.5 FD


Info

- Highly flexible application
- for Profinet applications

Benefits

- Screened against interference
- Conductor: AWG22 = PROFINET-compliant

Application range

- Power chain applications
- Dry or damp rooms
- Industrial use

Product features

- PUR outer sheath is highly resistant to mineral oils and abrasion

- Flame-retardant according to IEC 60332.1.2

Design

- Stranded 7-wire bare conductor
- Inner sheath: thermoplastic copolymer (FRNC)
- Overall screening with copper braid and plastic-laminated aluminium foil
- PUR outer sheath
- Colour: green (based on RAL 6018)

Technical data

Minimum bending radius
Flexing: 7.5 x outer diameter
Fixed installation: 5 x cable diameter, once

Test voltage
Core/core: 700 V
Core/screen: 700 V

Temperature range
Operation: -20 °C to +70 °C

Characteristic impedance
100 Ohm +- 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications (7-wire stranded conductor) = type C					
2170894	ETHERLINE® FD P FC CAT.5	2 x 2 x AWG22/7	6.5	31.3	63

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

New

ETHERLINE® Y Cat.5e BK 2x2AWG22/7

LAPP KABEL STUTTGART ETHERLINE® Y CAT. 5e SUN RES

Benefits

- UV and weather-resistant in black
- For flexible applications (7-wire stranded conductor) = type B
- FAST ETHERNET = 100 Mbit/s

Application range

- Many applications with Industrial Ethernet, e.g. PROFINET type B, i.e. fixed installation and flexible use.
- Resistant to acids, alkalis and certain oils at room temperature

Product features

- PVC compound TM2 acc. to VDE 0281-1 or HD 21.1

Approvals



Design

- Stranded conductor, 7-wire, bare
- Core insulation: Based on Polyolefin
- Star quad
- Aluminum-coated foil Screening braid made of tinned-copper wires
- PVC outer sheath

Technical data



Peak operating voltage
(not for power applications) 125 V



Minimum bending radius
Fixed installation: 10 x outer diameter
Flexing: 15 x outer diameter



Test voltage
Core/core: 1000 V
Core/screen: 500 V



Temperature range
Flexing: -10°C to +70°C
Fixed installation: -40°C to +80°C



Characteristic impedance
At 1 - 100 MHz: 100 ± 15 Ohm

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170901	ETHERLINE® Y CAT.5e BK 2x2xAWG22/7	2 x 2 x AWG22/7	6.2	30.4	59

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

ETHERLINE® TORSION Cat. 5

LAPP KABEL STUTTGART ETHERLINE® TORSION CAT.5

Benefits

- This cable is an important supplement to the range of ETHERLINE® Industrial Ethernet cables.
- Cable suitable for high torsion stress. Tested with more than 1 million bending cycles and a right/left movement of 180° per metre.

Application range

- Many applications with Industrial Ethernet, e.g. PROFINET, i.e. fixed installation, flexible and highly flexible use as well as TORSION.

Product features

- Flame-retardant according to IEC 60332.1.2
- Outer sheath with high abrasion-resistance

Approvals



- UL AWM (Style 21161)

Design

- Stranded conductor, tinned
- AWG 22 (19-wire)
- PE core insulation
- Star quad
- PUR outer sheath, halogen-free



Info

- Industrial Ethernet Cable, 2-pair, suitable for torsion stress

Technical data



Peak operating voltage
max. 100 V (not for power applications)



Minimum bending radius
Installation: 5 x outer diameter



Test voltage
700 V



Temperature range
-40°C to +80°C



Characteristic impedance
At 1 - 100 MHz: 100 ± 15 Ohm

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170888	ETHERLINE® TORSION CAT.5	2 x 2 x AWG22/19	6.5	31.3	52

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Main Catalogue Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)
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Accessories

- Multipurpose shears A and B refer to Main Catalogue page 902
- SMARTSTRIP stripping tool refer to Main Catalogue page 907

ETHERLINE® Cat.6_A + Cat.7

Fixed installation



Info

- Industrial Ethernet cable

Benefits

- Screened against interference
- Cat.6_A = 500 MHz
- Cat.7 = 600 MHz

Application range

- Can be used for Industrial Ethernet in harsh industrial environments
- Can be used in dry or damp rooms

Product features

- PUR outer sheath is highly resistant to mineral oils and abrasion

- Robust, halogen-free outer sheath
- PVC outer sheath

Approvals



Design

- Solid bare copper wire AWG22
- Core insulation made of polyethylene (PE)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Colour: green

Technical data



Characteristic impedance
100 Ohm at 1 - 100 MHz

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170466	ETHERLINE® Cat.6 _A H	4 x 2 x AWG22/1	8.7	53.0	99
2170476	ETHERLINE® CAT.7 H	4 x 2 x AWG22/1	8.7	53.0	99
2170465	ETHERLINE® CAT.6 _A P	4 x 2 x AWG22/1	8.7	53.0	91
2170475	ETHERLINE® Cat.7 P	4 x 2 x AWG22/1	8.7	53.0	91
2170464	ETHERLINE® Cat.6 _A Y	4 x 2 x AWG22/1	8.7	53.0	98
2170474	ETHERLINE® Cat.7 Y	4 x 2 x AWG22/1	8.7	53.0	98

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

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

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

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

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

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

Accessories

- DATA STRIP stripping tool refer to Main Catalogue page 907



Info

- CAT.6 for drag chain!
- Only for patch cable applications (max. 60 m)

Benefits

- PUR outer sheath is highly resistant to most oils, abrasion, and UV-radiation
- Premium screening against electromagnetic interference

Application range

- For use in power chains and moving machinery parts in dry or damp rooms

Product features

- Flame-retardant according to IEC 60332.1.2

Approvals



- UL/CSA type CMX (UL 444)

Design

- Stranded conductor, tinned
- AWG 26 (19-wire)
- PP core insulation
- Inner sheath: thermoplastic copolymer (FRNC)
- PUR outer sheath, halogen-free
- Colour: green (based on RAL 6018)

Suitable connectors

- Field-Terminable Connector RJ45 CAT.5e FM45 418
- Connector RJ45 Cat.6A fieldmountable 419

Technical data



Peak operating voltage
max. 100 V (not for power applications)



Minimum bending radius
Fixed installation:
4 x outer diameter
Flexing: 7.5 x outer diameter



Test voltage
700 V



Temperature range
Fixed installation: -40°C to +80°C
Flexing: -30°C to +80°C



Characteristic impedance
At 1 - 100 MHz: 100 ± 15 Ohm

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170488	ETHERLINE® FD P CAT.6	4 x 2 x AWG26/19	7.8	31.7	63

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

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

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

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

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

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

New

UNITRONIC® LAN 200 - CAT.5e

LAPP KABEL STUTTGART UNITRONIC® LAN U/UTP 200 MHz Cat.5e

LAPP KABEL STUTTGART UNITRONIC® LAN F/UTP 200 MHz Cat.5e



Info

- EIA = Electronic Industries Association
- TIA = Telecommunication Industries Association
- TSB = Technical Systems Bulletin

■ Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

■ Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

■ Product features

- Transfer of digital and analogue data signals
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T
- IEEE 802.5: ISDN; FDDI; ATM

■ Approvals



- Class D in ISO/IEC 11801 standard corresponds to CAT.5
- LAN CAT.5e cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36, as well as ISO/IEC 11801 or EN 50173 (Class D).

■ Design

- U/UTP: no overall or pair shielding
- F/UTP: foil screening as overall screening
- SF/UTP: copper braid and foil screening as overall screening
- Solid conductor
- Outer sheath either as PVC or LSZH

■ Technical data



Minimum bending radius

during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter



Temperature range

Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C



Characteristic impedance

100 Ohm ± 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC version					
2170125	200 U/UTP Cat.5e	4 x 2 x AWG24/1	5.6	17.0	32
2170126	200 F/UTP Cat.5e	4 x 2 x AWG24/1	6.4	18.0	42
2170128	200 SF/UTP Cat.5e	4 x 2 x AWG24/1	6.7	32.0	60
Halogen-free versions					
2170185	200 U/UTP Cat.5e LSZH	4 x 2 x AWG24/1	5.6	17.0	
2170138	200 SF/UTP Cat.5e LSZH	4 x 2 x AWG24/1	6.7	32.0	61

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

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

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

Packaging size: Coil 100 m; Drum (500; 1000) m

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

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

■ Accessories

- Connector RJ45 CAT.5 Hirose TM11 refer to Main Catalogue page 418
- Connector RJ45 CAT.5 Stewart SS37 refer to Main Catalogue page 418
- Field-Terminable Connector RJ45 CAT.5e FM45 refer to Main Catalogue page 418
- DATA STRIP stripping tool refer to Main Catalogue page 907

New

UNITRONIC® LAN 250 - CAT.6



Info

- EIA = Electronic Industries Association
- TIA = Telecommunication Industries Association
- TSB = Technical Systems Bulletin

Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).

Product features

- Transfer of digital and analogue data signals
- LAN Cat.6 cables are specified up to 350 MHz
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T
IEEE 802.5: ISDN; FDDI; ATM

Approvals



- Class E out of the standard ISO/IEC 11801 corresponds to CAT.6
- LAN CAT.6 cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36, as well as ISO/IEC 11801 or EN 50173 (Class E - permanent link).

Design

- U/UTP: no overall or pair shielding
- F/UTP: foil screening as overall screening
- Solid conductor
- Outer sheath either as PVC or LSZH

Technical data



Minimum bending radius
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter



Temperature range
Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C



Characteristic impedance
100 Ohm ± 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)
PVC versions				
2170186	250 U/UTP Cat.6	4 x 2 x AWG24/1	6.5	18.0
Halogen-free versions				
2170193	250 U/UTP Cat.6 LSZH	4 x 2 x AWG24/1	6.5	18.0
2170194	250 F/UTP Cat.6 LSZH	4 x 2 x AWG24/1	7.5	19.0

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

New

UNITRONIC® LAN 500 - Cat.6_A

LAPP KABEL STUTTGART UNITRONIC® LAN CAT. 6A 4x2xAWG23



LAPP KABEL STUTTGART UNITRONIC® LAN CAT. 6A 4x2xAWG26



■ Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

■ Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

■ Product features

- Transfer of digital and analogue data signals
- The characteristic impedance of this cable is 100 Ohm ±15 %
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
- IEEE 802.5: ISDN; FDDI; ATM

■ Approvals



- Class E_A out of the standard ISO/IEC 11801 corresponds to Cat.6_A
- LAN Cat.6_A cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36, as well as ISO/IEC 11801 or EN 50173 (Class E_A - permanent link).

■ Design

- U/FTP: aluminium compound foil as pair screening
- F/FTP: aluminium compound foil as overall screening and pair screening
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Solid conductor
- Outer sheath either as PVC or LSZH



Info

- EIA = Electronic Industries Association
- TIA = Telecommunication Industries Association
- TSB = Technical Systems Bulletin

■ Technical data



Minimum bending radius

during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter



Temperature range

Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C



Characteristic impedance

100 Ohm ±15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC version					
2170143	500 S/FTP Cat.6 _A	4 x 2 x AWG23/1	7.7	27.0	53
Halogen-free versions					
2170195	500 U/FTP Cat.6 _A LSZH	4 x 2 x AWG23/1	7.4	21.0	
2170196	500 F/FTP Cat.6 _A LSZH	4 x 2 x AWG23/1	7.6	22.0	

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

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

Packaging size: Coil 100 m; Drum (500; 1000) m

CAT.6a is available as a draft

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

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

■ Accessories

- Connector RJ45 CAT.6 Hirose TM21 refer to Main Catalogue page 419
- DATA STRIP stripping tool refer to Main Catalogue page 907

New

UNITRONIC® LAN 1000 S/FTP Cat.7



Info

- EIA = Electronic Industries Association
- TIA = Telecommunication Industries Association
- TSB = Technical Systems Bulletin

LAPP KABEL STUTTGART UNITRONIC® LAN S/FTP 1000 MHz Cat.7

LAPP KABEL STUTTGART UNITRONIC® LAN S/FTP 1000 MHz Cat.7 DUPLEX

Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

Product features

- Transfer of digital and analogue data signals
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
IEEE 802.5: ISDN; FDDI; ATM; cable sharing
IEEE 802.3at: suitable for PoE

Approvals



- Class F in the ISO/IEC 11801 standard corresponds to CAT.7

Design

- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Solid conductor
- Outer sheath: halogen-free, flame-retardant compound

Technical data



Minimum bending radius
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter



Temperature range
Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C



Characteristic impedance
100 Ohm ± 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Halogen-free versions					
2170614	1000 S/FTP Cat.7 LSZH	4 x 2 x AWG23/1	7.7	27.0	78
2170634	1000 S/FTP Cat.7 duplex	2 x (4 x 2 x AWG23/1)	7.7 x 15.4	54.0	156

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Main Catalogue Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil 100 m; Drum (500; 1000) m
Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
Photographs are not to scale and do not represent detailed images of the respective products.

New

UNITRONIC® LAN 1200 S/FTP Cat.7_ALAPP KABEL STUTTGART UNITRONIC® LAN S/FTP 1200 MHz Cat.7_ALAPP KABEL STUTTGART UNITRONIC® LAN S/FTP 1200 MHz Cat.7_A

■ Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

■ Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

■ Product features

- Transfer of digital and analogue data signals
- The cable is specified for up to 1.2 GHz
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
- IEEE 802.5: ISDN; FDDI; ATM; cable sharing
- IEEE 802.3at: suitable for PoE

■ Approvals



- LAN Cat.7_A cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36 as well as ISO/IEC 11801 or EN 50173 (Class F_A - permanent link).
- Exceeds the requirements of EN 50173 and ISO/IEC 11801 standards

■ Design

- Solid bare copper wire AWG22
- Cellular polyolefin core insulation, max. core diameter 1.6 mm
- Pair screen made of aluminium-lined plastic foil, overall screening made of tinned-copper braiding
- Outer sheath: halogen-free, flame-retardant compound
- Colour: yellow (RAL 7032)



Info

- Complies with the EN 50173 and ISO/IEC 11801 standards

■ Technical data



Minimum bending radius

during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter



Temperature range

Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C



Characteristic impedance

100 Ohm ± 15 %

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170615	1200 S/FTP Cat.7 _A LSZH	4 x 2 x AWG22/1	8.1	34.0	80

Copper price basis: EUR 150/100kg. Refer to Main Catalogue Appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Drum

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

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

■ Accessories

- Multipurpose shears A and B refer to Main Catalogue page 902
- DATA STRIP stripping tool refer to Main Catalogue page 907

New

UNITRONIC® LAN 1500 S/FTP Cat.7_ALAPP KABEL STUTTGART UNITRONIC® LAN S/FTP 1500 MHz Cat.7_ALAPP KABEL STUTTGART UNITRONIC® LAN S/FTP 1500 MHz Cat.7_A

■ Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

■ Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).

■ Product features

- Transfer of digital and analogue data signals
- Cable is specified for up to 1.5 GHz
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
- IEEE 802.5: ISDN; FDDI; ATM; cable sharing
- IEEE 802.3at: suitable for PoE, VoIP

■ Approvals

- LAN Cat.7_A cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36 as well as ISO/IEC 11801 or EN 50173 (Class F_A - permanent link).
- Exceeds the requirements of EN 50173 and ISO/IEC 11801 standards

■ Design

- Solid bare copper wire AWG22
- Cellular polyolefin core insulation, max. core diameter 1.6 mm
- Pair screen made of aluminium-lined plastic foil, overall screening made of tinned-copper braiding
- Outer sheath: halogen-free, flame-retardant compound
- Colour: yellow (RAL 7032)



Info

- Complies with the EN 50173 and ISO/IEC 11801 standards

■ Technical data



Minimum bending radius

during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter



Temperature range

Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C



Characteristic impedance

100 Ohm ± 15 %

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)
2170199	1500 S/FTP Cat.7 _A LSZH	4 x 2 x AWG22/1	8.5	42.0

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

New

UNITRONIC® LAN OUTDOOR



Info

- Data cable for primary, secondary and tertiary cabling with PE outer sheath for outdoor applications

Benefits

- Suitable for outdoor use and direct burial
- UV and water-resistant
- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- For outdoor use
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

Product features

- Transfer of digital and analogue data signals
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
- IEEE 802.5: ISDN; FDDI; ATM; cable sharing
- IEEE 802.3at: suitable for PoE

Approvals

- LAN Cat.7 cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36, as well as ISO/IEC 11801 or EN 50173 (Class F - permanent link).

Design

- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Solid conductor
- Core insulation: foamed polyolefin
- PE outer sheath
- Colour: black (RAL 9005)

Technical data

- Minimum bending radius**
During installation: 10 x outer diameter
Fixed installation: 4 x outer diameter
- Temperature range**
Operation: up to +60 °C
During installation: -15 °C to +60 °C
- Characteristic impedance**
100 Ohm ± 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Suitable for direct burial					
2170198	1000 S/FTP Cat.7 (L)PE	4 x 2 x AWG23/1	10.0	34.0	72
Suitable for direct routing underground, not transversely waterproof					
2170197	1000 S/FTP Cat.7 PE	4 x 2 x AWG23/1	9.6	34.0	75

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

New

UNITRONIC® LAN FLEX

Flexible use



Info

- Only for patch cable applications (max. 60 m)

Benefits

- For directly connecting two electric components
- Easy to assemble

Application range

- Indoor applications
- LAN connections
- Control cabinet wiring

Product features

- Good flexibility - easy installation with tight space requirements

Design

- F/UTP: foil screening as overall screening
- SF/UTP: copper braid and foil screening as overall screening
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath either as PVC or LSZH

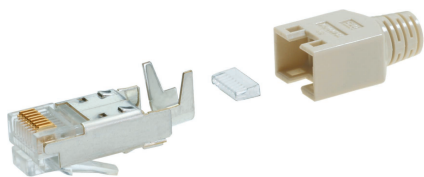
Technical data

- Minimum bending radius**
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter
- Characteristic impedance**
100 Ohm ± 15%

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC versions					
2170127	200 F/UTP Cat.5e	4 x 2 x AWG26/7	5.6	13.0	30
2170129	200 SF/UTP Cat.5e	4 x 2 x AWG26/7	6.0	22.0	41
2170144	600 S/FTP CAT7 Y	4 x 2 x AWG26/7	6.5	22.0	40
Halogen-free versions					
2170137	200 F/UTP Cat.5e LSZH	4 x 2 x AWG26/7	5.6	13.0	31
2170139	200 SF/UTP Cat.5e LSZH	4 x 2 x AWG26/7	6.0	22.0	42

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

Connector RJ45 CAT.5 Hirose TM11



Product features

- Screened version
- Suitable for stranded conductors (AWG26)
- Included: bend protection and guide plate
- Anti-kink protection: beige
- Max. outer sheath diameter: 5.8 mm

Approvals



Article number	Article designation	PU
CE6321	Connector RJ45 CAT.5 Hirose TM11	50 pieces

Hirose is a registered trademark of the HIROSE ELECTRIC Group

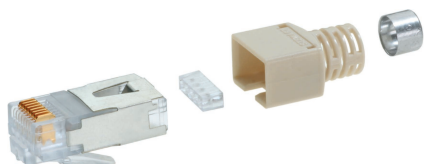
Other colours are available upon request.

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

Accessories

- Crimping tool RJ45 Hirose refer to Main Catalogue page 420

Connector RJ45 CAT.5 Stewart SS37



Product features

- Screened version
- Suitable for stranded conductors (AWG26)
- Included: bend protection and guide plate
- Anti-kink protection: light grey
- Max. outer sheath diameter: 5.72 mm

Approvals



Article number	Article designation	PU
CE6323	Connector RJ45 CAT.5 Stewart SS37	50 pieces

Stewart is a registered trademark of Bel Fuse Inc.

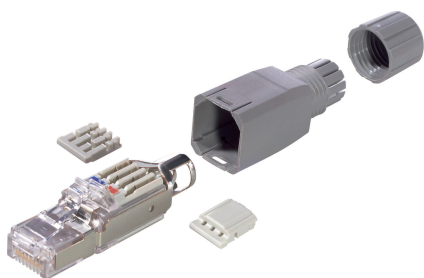
Other colours are available upon request.

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

Accessories

- Crimping tool RJ45 Stewart refer to Main Catalogue page 420

Field-Terminable Connector RJ45 CAT.5e FM45



Product features

- Screened version
- FM45 is a tool-free switchable, field-terminable RJ45 Connector with IDC contacting and CAT.5e performance. The 8-pin connection is tension and vibration-resistant, and can be re-switched. The connecting block can accommodate both screened and unscreened cable of up to 8 mm diameter.
- Suitable for AWG 23 - 26, AWG 22 possible with restrictions
- IDC/piercing terminal according to 60352-4
- Suitable for solid and stranded conductors
- Suitable for use in industrial applications
- Protection rating: IP20

Approvals



Article number	Article designation	PU
21700540	Field-Terminable Connector RJ45 CAT.5e FM45	1 piece

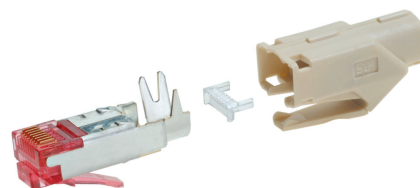
Photographs are not to scale and do not represent detailed images of the respective products.

Connector RJ45 CAT.6 Hirose TM21

Product features

- Channel Class E up to 250 MHz (CAT.6)
- Fully screened
- Conductor: Ø 0.5 mm solid wire:
AWG 24 & 26;
guide plate for 1.1 mm diameter wire;
cable outer diameter: 6.6 mm
- Easy to handle
- Included: bend protection and guide plate
- Anti-kink protection: beige
- Suitable for solid and stranded conductors

Approvals



Article number	Article designation	PU
CE6324	Connector RJ45 CAT.6 Hirose TM21	50 pieces

Hirose is a registered trademark of the HIROSE ELECTRIC Group

Other colours are available upon request.

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

Accessories

- Crimping tool RJ45 Stewart refer to Main Catalogue page 420

New

Connector RJ45 Cat.6_A fieldmountable

Product features

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- Qualified for 10 Gigabit Ethernet
- Housing: zinc die-casting, grey

- By a multi-level relief setting the connector can accommodate a cable diameter from 5,0 mm up to 9,0 mm
- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG24/1- 22/1
- Suitable for use in industrial applications
- Available with colour code T568A or T568B



Article number	Article designation	PU
21700600	EPIC® DATA ED-IE-AX-6A-A-20-FC	10 pieces
21700601	EPIC® DATA ED-IE-AX-6A-B-20-FC	10 pieces

For communication technology

GOF cables

HITRONIC® HQN Outdoor Cable

Duplex Jumper and Pigtails

Duplex Jumper/Patchcord

Simplex Pigtail

Splice boxes, wall distributors and accessories

19" Splice Box for ST

19" Splice Box for SC

Splice Box Compact

Mini Wall mounted Rack

Accessories for Splice Box and Wall mounted Rack

LWL-Kupplungen

HITRONIC®

Optical transmission systems

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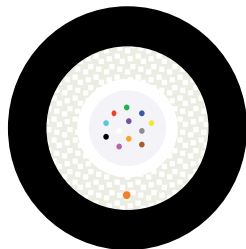
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HITRONIC® HQN Outdoor Cable



Info

- A-DQ(ZN)B2Y
- Outdoor cable with central loose tube and non-metallic strain relief

Benefits

- Suitable for direct burial
- Easy to install due to the compact design, high flexibility, robust sheath and small bending radii
- UV and water-resistant
- Zero electromagnetic interference as the cable contains no metal

Application range

- For outdoor use
- Campus backbone
- WAN applications
- Industrial environment
- Methods of Deployment: empty plastic pipes, ducts and trays

Product features

- Central loose tube with up to 24 fibres
- Colour-coded fibres
- Longitudinal watertight
- Rodent-protection
- Robust, halogen-free outer sheath

Approvals



Design

- Glass fibres with primary coating
- Gel-filled loose tube
- Water-blocking reinforced glass yarn strength members
- PE outer sheath
- Colour: black (RAL 9005)

Technical data



Optical fibre type

Core material: Glass
Cladding material: Glass



Temperature range

Operation: -20 °C to +60 °C
Installation: 0 °C to +50 °C
Storage: -40 °C to +70 °C



Permissible bending radius

Static: $\geq 15 \times$ outer diameter
Dynamic: $\geq 20 \times$ outer diameter



Permissible tensile force

Fixed installation: 1500 N
Short-term: 3000 N

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)
Multimode G 50 OM3				
27600304	HITRONIC® HQN1500 4G 50/125 OM3	50/125 OM3	4	7.3
27600308	HITRONIC® HQN1500 8G 50/125 OM3	50/125 OM3	8	7.3
27600312	HITRONIC® HQN1500 12G 50/125 OM3	50/125 OM3	12	7.3
27600324	HITRONIC® HQN1500 24G 50/125 OM3	50/125 OM3	24	8.3
Multimode G 50 OM2				
27600204	HITRONIC® HQN1500 4G 50/125 OM2	50/125 OM2	4	7.3
27600208	HITRONIC® HQN1500 8G 50/125 OM2	50/125 OM2	8	7.3
27600212	HITRONIC® HQN1500 12G 50/125 OM2	50/125 OM2	12	7.3
27600224	HITRONIC® HQN1500 24G 50/125 OM2	50/125 OM2	24	8.3
Multimode G 62.5 OM1				
27600104	HITRONIC® HQN1500 4G 62.5/125 OM1	62.5/125 OM1	4	7.3
27600108	HITRONIC® HQN1500 8G 62.5/125 OM1	62.5/125 OM1	8	7.3
27600112	HITRONIC® HQN1500 12G 62.5/125 OM1	62.5/125 OM1	12	7.3
27600124	HITRONIC® HQN1500 24G 62.5/125 OM1	62.5/125 OM1	24	8.3
Singlemode E 9 OS2				
27600904	HITRONIC® HQN1500 4E 9/125 OS2	9/125 OS2	4	7.3
27600908	HITRONIC® HQN1500 8E 9/125 OS2	9/125 OS2	8	7.3
27600912	HITRONIC® HQN1500 12E 9/125 OS2	9/125 OS2	12	7.3
27600924	HITRONIC® HQN1500 24E 9/125 OS2	9/125 OS2	24	8.3

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

The cables can also be supplied as pre-terminated fibre optic trunks.

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

Accessories

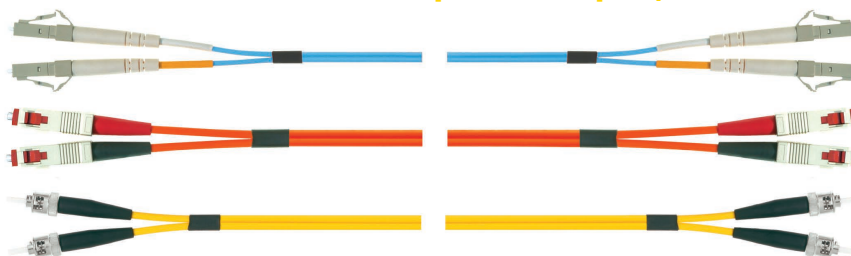
- Simplex Pigtail refer to Main Catalogue page 438
- DATA STRIP stripping tool refer to Main Catalogue page 907

Duplex Jumper/Patchcord



Info

- J-VH 2x1 G/E
- Pre-terminated tight buffered duplex cable with durable ceramic ferrules



Benefits

- Suitable for direct burial
- Easy to install due to the compact design, high flexibility, robust sheath and small bending radii
- UV and water-resistant
- Zero electromagnetic interference as the cable contains no metal

Application range

- For outdoor use
- Campus backbone
- WAN applications
- Industrial environment
- Methods of Deployment: empty plastic pipes, ducts and trays

Product features

- Central loose tube with up to 24 fibres
- Colour-coded fibres
- Longitudinal watertight
- Rodent-protection
- Robust, halogen-free outer sheath

Approvals



Design

- Tight-buffered duplex cable with FRNC outer sheath
- Connector: LC, SC or ST
- Cable colour:
aqua for multimode OM3,
orange for multimode OM2 and OM1,
yellow for single-mode OS2
- Standard length: 2 m

Technical data



Optical fibre type
Core material: Glass
Cladding material: Glass



Temperature range
Operation: -20°C to +60°C
Installation: 0°C to +50°C
Storage: -25°C to +70°C



Permissible bending radius
Static: ≥ 30 mm
Dynamic: ≥ 40 mm



Permissible tensile force
Fixed installation: 150 N

Article number	Article designation	PU
Duplex Jumper Singlemode 9 µm		
94841	Duplex Jumper ST/ST 9 µm, 2 m	1 piece
94891	Duplex Jumper SC/SC 9 µm, 2 m	1 piece
94931	Duplex Jumper ST/SC 9 µm, 2 m	1 piece
9498	Duplex Jumper LSH APC/LC 9 µm, 2 m	1 piece
9477	Duplex Jumper LSH APC/LSH APC 9 µm, 2 m	1 piece
9495	Duplex Jumper LSH APC/SC 9 µm, 2 m	1 piece
Duplex Jumper Multimode 50 µm		
93681	Duplex Jumper ST/ST 50 µm, 2 m	1 piece
93561	Duplex Jumper SC/SC 50 µm, 2 m	1 piece
94641	Duplex Jumper ST/SC 50 µm, 2 m	1 piece
9510	Duplex Jumper MTRJ/MTRJ 50 µm, 2 m	1 piece
9513	Duplex Jumper MTRJ/ST 50 µm, 2 m	1 piece
9509	Duplex Jumper LC/LC 50 µm, 2 m	1 piece
9508	Duplex Jumper LC/SC 50 µm, 2 m	1 piece
9501	Duplex Jumper LC/ST 50 µm, 2 m	1 piece
9457	Duplex Jumper LSH/LSH 50 µm, 2 m	1 piece
9511	Duplex Jumper MTRJ/SC 50 µm, 2 m	1 piece
Duplex Jumper Multimode 62,5 µm		
93781	Duplex Jumper ST/ST 62.5 µm, 2 m	1 piece
93581	Duplex Jumper SC/SC 62.5 µm, 2 m	1 piece
94651	Duplex Jumper ST/SC 62.5 µm, 2 m	1 piece
9519	Duplex Jumper LC/LC 62.5 µm, 2 m	1 piece
9531	Duplex Jumper LC/ST 62.5 µm, 2 m	1 piece
9521	Duplex Jumper MTRJ/SC 62.5 µm, 2 m	1 piece
9528	Duplex Jumper LC/SC 62.5 µm, 2 m	1 piece
9523	Duplex Jumper MTRJ/ST 62.5 µm, 2 m	1 piece

Other lengths and types of connectors are available upon request.

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

Simplex Pigtail



Info

- J-VH 1 G/E
- Pre-terminated tight-buffered simplex cable with one durable ceramic ferrule

Benefits

- Create a direct plug connection for installation cables with splicing
- Ease of installation and assembly
- Zero electromagnetic interference as the cable contains no metal

Application range

- For indoor use
- Connection to an end optical device

Product features

- Flame-retardant and halogen-free
- High flexibility
- Cable termination with durable ceramic ferrules
- Set consisting of 12 colour-coded pigtails

Approvals



Design

- Tight-buffered simplex fibre with FRNC secondary coating (900 µm)
- Connector: LC, SC or ST
- Colour-coded primary and secondary coatings
- Standard length: 2 m

Technical data



Optical fibre type

Core material: Glass
Cladding material: Glass



Temperature range

Operation: -20°C to +60°C
Installation: 0°C to +50°C
Storage: -25°C to +70°C



Permissible tensile force

Fixed installation: 150 N

Article number	Article designation	PU
Pigtail Multimode 50 µm		
93911	ST Pigtail Simplex 50 µm, 2 m	12 piece
93411	SC Pigtail 50 µm, 2 m	12 piece
Pigtail Multimode 62.5 µm		
93931	ST Pigtail Simplex 62.5 µm, 2 m	12 piece
93441	SC Pigtail Simplex 62.5 µm, 2 m	12 piece
Pigtail Singlemode 9 µm		
93471	ST Pigtail Simplex 9 µm, 2 m	12 piece
93401	SC Pigtail Simplex 9 µm, 2 m	12 piece
9396	LSH APC Pigtail Simplex 9 µm, 2 m	12 piece

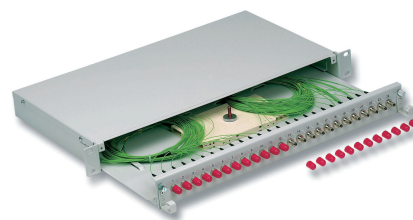
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

19" Splice Box for ST

Product features

- For up to 12 or 24 fibres
- Can be pulled out
- Unpopulated
- For a maximum of 4 splicing cartridges
- Height: 1 RU
- Dimensions (WxHxD): 483 x 44.5 x 244 mm
- Material: sheet steel, 1.5 mm
- Colour: light grey (RAL 7035)

Approvals



Article number	Article designation	PU
Splice Box Compact		
CE9138	19" Splice Box for 12 ST	1 piece
CE9139	19" Splice Box for 24 ST	1 piece

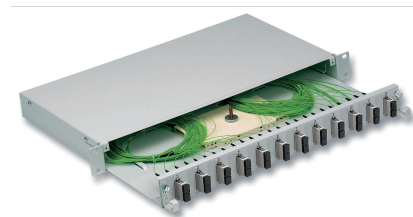
Splice boxes for more fibres with other types of connectors are available upon request. Also available in pre-assembled versions with couplings and pigtails.
Photographs are not to scale and do not represent detailed images of the respective products.

19" Splice Box for SC

Product features

- For up to 24 fibres
- Included: front panel with 12 SC-duplex holes
- Can be pulled out
- Unpopulated
- Height: 1 RU
- Dimensions (WxHxD): 483 x 44.5 x 170 mm
- Material: steel plate, 1.5 mm
- Colour: light grey (RAL 7035)

Approvals



Article number	Article designation	PU
Splice Box Compact		
CE9135	19" Splice Box für SC	1 piece

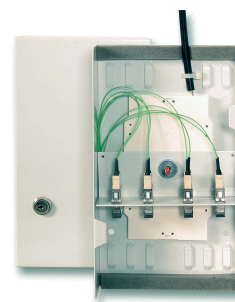
Splice boxes for more fibres with other types of connectors are available upon request. Also available in pre-assembled versions with couplings and pigtails.
Photographs are not to scale and do not represent detailed images of the respective products.

Splice Box Compact

Product features

- Panel mounting
- Lockable
- Max. capacity of 8 splicing cartridges or 4 splicing cartridges and one distribution plate
- Includes distributor plate for 8 ST couplings
- Includes distributor plate for 4 SC duplex couplings
- Dimensions (WxHxD): 265 x 150 x 55 mm
- Colour: light grey (RAL 7035)

Approvals



Article number	Article designation	PU
Splice Box Compact		
CE9147	Splice Box Compact	1 piece

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

Mini Wall mounted Rack



Product features

- Panel mounting
- Lockable
- Max. capacity of 8 splicing cartridges or 4 splicing cartridges and one distribution plate
- Accessories for Mini wall-mounted rack:
 - Distributor plate for 24 ST couplings
 - Distributor plate for 24 SC Simplex couplings
 - Distributor plate for 12 SC Duplex couplings
- Dimensions (W x H x D): 320 x 280 x 54 mm
- Colour: light grey (RAL 7035)

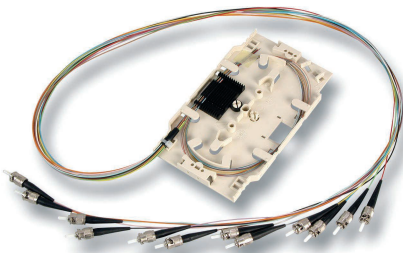
Approvals



Article number	Article designation	PU
CE9150	Mini Wall mounted Rack	1 piece
Accessories for Mini wall-mounted rack		
CE9151	Distribution plate for 24 x ST-Couplers	1 piece
CE9152	Distribution plate for 24 x SC-simplex-Couplers	1 piece
CE9153	Distribution plate for 12 x SC-duplex-Couplers	1 piece

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

Accessories for Splice Box and Wall mounted Rack



Product features

- Splicing cassette for up to 2 splicing protection holders
- Cover for splicing cartridge
- 12-fold splicing protection holder
- Splicing protection sleeve for ANT splicing device
- Dummy cap instead of E2000 coupling
- Dummy cap instead of ST coupling
- Dummy cap instead of SC duplex coupling

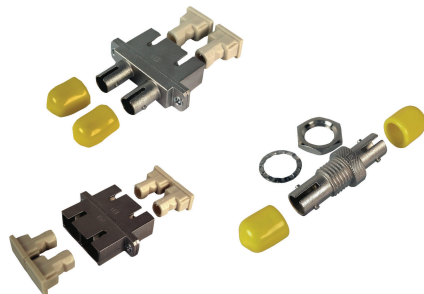
Approvals



Article number	Article designation	PU
Accessories for splice boxes and wall-mounted rack		
CE9914	Splicing cartridge for up to 2 splicing protection hold	1 piece
CE9914D	Cover for splicing cartridge	1 piece
CE9916	Splicing protection holder 12-fold	1 piece
CE9913	Splicing protection sleeve for ANT splicing device	15 pieces
CE9917	Blind cap instead of E2000 coupling	10 pieces
CE9918	Blind cap instead of ST coupling	10 pieces
CE9919	Blind cap instead of SC duplex coupling	10 pieces

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

LWL-Kupplungen



Product features

- The couplings connect the glass fibre connectors with the same or different connector types.

Approvals



Article number	Article designation	PU
Multimode		
CE93191	SC / SC Duplex-Adapter for 50 µm or 62.5 µm	4 piece
CE94611	SC / SC Duplex-Adapter for 50 µm or 62.5 µm	4 piece
CE9462	LC / LC Duplex-Adapter for 50 µm or 62.5 µm	4 piece
CE9441	SC / ST Duplex-Adapter for 50 µm or 62.5 µm	4 piece
CE9449	MTRJ / MTRJ Simplex-Adapter for 50 µm or 62.5 µm	4 piece
Singlemode		
CE94591	SC / SC Duplex-Coupler for 9 µm	4 piece
CE9460	SC / ST Duplex-Adapter for 9 µm	4 piece
CE9009	E2000 / E2000 Simplex-Adapter for 9 µm	4 piece
CE9011	E2000 / E2000 Simplex-Adapter 8° for 9 µm	4 piece
CE9458	LC / LC Duplex-Adapter for 9 µm	4 piece

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

For current information see: www.lappkorea.com

Rectangular Connectors

EPIC® H-A Inserts
Housings

Selection Table

A10: Technical Data of EPIC® Rectangular Connectors

Rectangular Connectors

EPIC® Rectangular Kits

EPIC® H-A 3 Kits Thermoplastic
EPIC® H-A 3 Kits Metal
EPIC® H-A 4 Kits Thermoplastic
EPIC® H-A 4 Kits Metal
EPIC® H-A 10 Kits
EPIC® H-A 16 Kits
EPIC® H-BE 6 Kits
EPIC® H-BE 10 Kits
EPIC® H-BE 16 Kits
EPIC® H-BE 24 Kits

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EPIC®
Industrial connectors



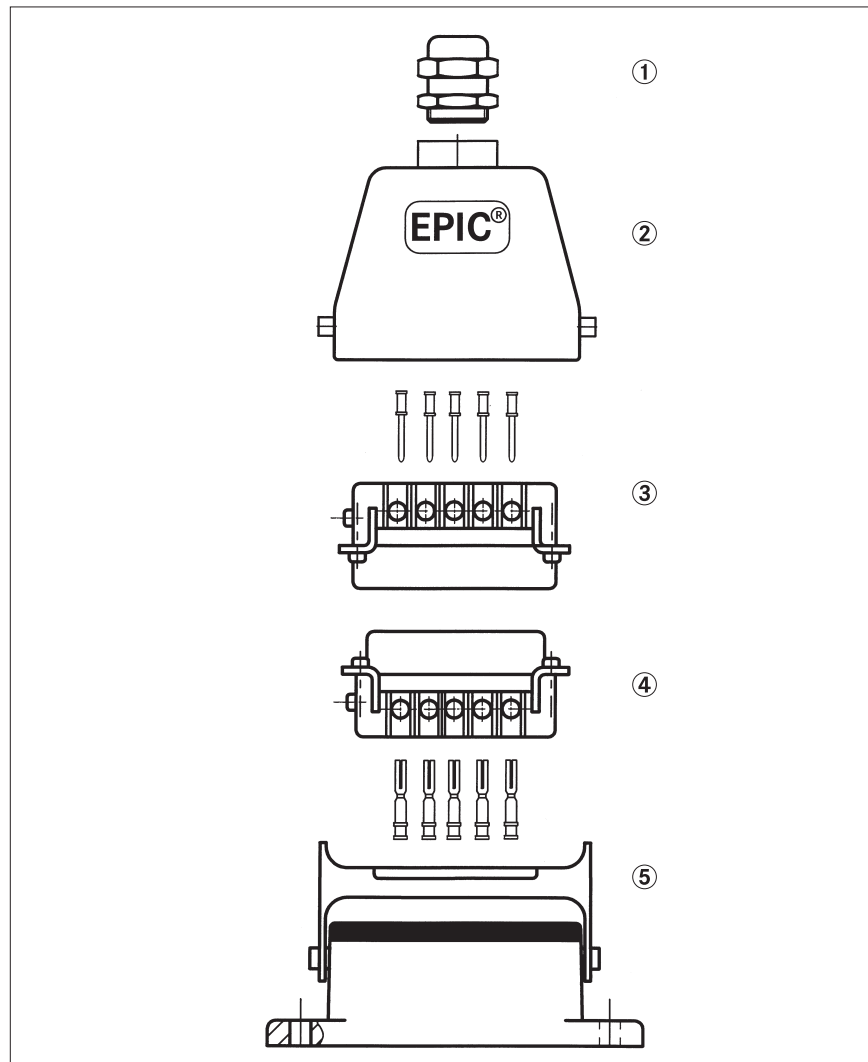
Please pay attention to the EPIC® Selection table A10, this table is a great guide in helping you to find the right insert and suitable housings for your application. Please also pay attention to the new, complete configured Connector-Kits.

Solutions for many applications:

- Number of poles from 2 up to 216
- Currents up to 82A
- Voltages up to 1000V
- Modular system for current supply, signal-/data transmission and compressed air
- Termination technologies:
solder, screw, crimp, cage clamp

Tip:

- for inserts with screw termination please use the processing tool (Chapter: Tools)



1. Cable Gland:

The Cable Gland provides a seal between the cable and the connector housing. It may also be used to offer additional functions like strain relief and braid continuity for EMC protection.

2. Hood:

The connector housing for the cable entry.

3. Male insert:

Types of contact termination

- Screw
- Crimp (contacts must be ordered separately)
- Cage clamp

4. Female insert:

Types of contact termination

- Screw
- Crimp (contacts must be ordered separately)
- Cage clamp

5. Base:

- Panel mounting (cable entry through cut out in panel)
- or
- Surface mounting (cable entry through a gland into the side of the connector base)
- or
- Cable Connector Hood, cable to cable connection

Screw connection technology (as DIN EN 60999)				
Screw thread	M3	M4	M5	M6
Starting torque Nm	0.5	1.2	2.0	2.5
Clamping screw: H-A, H-BE, H-BVE	•			
Clamping screw: H-BS		•		
Grounding screw: H-A, H-BE, H-BVE		•		
Grounding screw: H-BS			•	
Clamping screw: Module High-Current				•
Fixing screw: Inserts and Module frames	•			

All EPIC® connectors refer to IEC 61984

Please pay attention to the EPIC® Selection table A10, this table is a great guide in helping you to find the right insert and the suitable housings for your application. Please pay attention to the new, complete configured Connector-Kits.

Solutions for many applications:

- Housing variations for cable connection and for the assembly on devices
- Degree of protection max. IP 65 (locked, depends on the cable gland). Therefore we recommend to use a brass cable gland with integrated sealing ring, for example: **SKINTOP® MS...**

Housings with cover:
IP 40, locked max. IP 65

Housings H-A 3: max. IP 65
(locked, depends on the cable gland)

- Housing material and colors:
Aluminium alloy: grey, similar RAL 7001, Zinc die cast (H-A 3):
grey, similar RAL 7001
Thermoplastics (H-A 3):
grey, similar RAL 7035
Thermoplastics (H-A 3):
black, similar RAL 7021

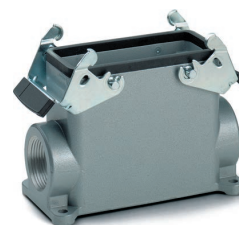
Hood:

A hood may have a top or angle (side) entry of different PG sizes to accommodate a wide range of cable diameters. The hood can be mated with either a surface or panel mounting base, or a cable coupler hood (for cable to cable connection).



Socket housing:

The surface base is a complete enclosure only offering cable entry through a cable gland mounted either on one or both sides of the base.



Panel Base housing:

The panel base is wired from below through a hole cut in a panel. The panel base is attached to the surface of a control panel for connection of control or power cables.

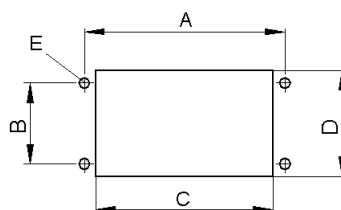


Cable Connector Hood:

The cable connector hood mates with a top entry hood to offer cable to cable connection. This is frequently used to extend cables.



Panel cut out for panel mount base (mm)					
Panel mount base	A	B	C	D	E
H-A 3	30	—	21	21	3,3
H-A 10	70	17,5	57,5	24	3,6
H-A 16	86	17,5	73,7	24	3,6
H-A 32	92	42	74,2	48,4	4,3
H-A 48	110	65	85,5	71	5,5
H-B 6	70	32	52,2	35	4,3
H-B 10	83	32	65,2	35	4,3
H-B 16	103	32	85,5	35	4,3
H-B 24	130	32	112,2	35	4,3
H-B 32	110	65	85,5	71	5,5
H-B 48	148	70	117	82	7



Technical Data											
Inserts	Number of contacts	Termination technology	Suitable contacts	Cross-section [mm ²]	IEC : Rated voltage [V]	IEC : Rated current [A]	UL : Rated voltage [V]	UL : Rated current [A]	CSA : Rated voltage [V]	CSA : Rated current [A]	Suitable housings
EPIC® Rectangular Connectors											
H-BE 32	32 + PE	screw	-	0.5 - 2.5	500	16	600	16	600	16	H-B 32
H-BE 32	32 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H-B 32
H-BE 32	32 + PE	cage clamp	-	0.5 - 2.5	500	16	600	16	600	16	H-B 32
H-BE 48	48 + PE	screw	-	0.5 - 2.5	500	16	600	16	600	16	H - B 4 8
H-BE 48	48 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H - B 4 8
H-BE 48	48 + PE	cage clamp	-	0.5 - 2.5	500	16	600	16	600	16	H - B 4 8
H-EE 10	10 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H-B 6
H-EE 18	18 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H-B 10
H-EE 32	32 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H-B 16
H-EE 46	46 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H - B 2 4
H-EE 64	64 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H-B 32
H-EE 92	92 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H - B 4 8
H-BS 6	6 + PE	screw	-	0.5 - 6.0	400	35	600	35	600	35	H-B 16
H-BS 12	12 + PE	screw	-	0.5 - 6.0	400	35	600	35	600	35	H-B 32
H-BVE 3	3+2+PE	screw	-	0.5 - 2.5	630	16	600	16	600	16	H-B 10
H-BVE 3	3+2+PE	cage clamp	-	0.5 - 2.5	830	16	600	16	600	16	H-B 10
H-BVE 6	6+2+PE	screw	-	0.5 - 2.5	630	16	600	16	600	16	H - B 1 6
H-BVE 10	10+2+PE	screw	-	0.5 - 2.5	630	16	600	16	600	16	H-B 24
Terminal Block TB-H-BE 6	6 + PE	screw	-	0.5 - 4.0	500	16	600	16	600	16	H-B 6
Terminal Block TB-H-BE 10	10 + PE	screw	-	0.5 - 4.0	500	16	600	16	600	16	H-B 10
Terminal Block TB-H-BE 16	16 + PE	screw	-	0.5 - 4.0	500	16	600	16	600	16	H - B 1 6
Terminal Block TB-H-BE 24	24 + PE	screw	-	0.5 - 4.0	500	16	600	16	600	16	H-B 24
Module High current 1+PE	1 + PE	screw	-	10.0 - 25.0	1000	82	-	-	-	-	Module frame
Module High current 2pol.	2	screw	-	10.0 - 25.0	1000	82	-	-	-	-	Module frame
Module High voltage 3pol.	3	crimp	MC 3.6 machined	1.5 - 10.0	1000	50	-	-	-	-	Module frame
Module High voltage 4+PE	4 + PE	crimp	MC 2.5 stamped	0.5 - 2.5	1000	16	-	-	-	-	Module frame
Modul 3pole	3	crimp	MC 3.6 machined	1.5 - 10.0	630	40	-	-	-	-	Module frame
Modul 4pole HE	4	crimp	H-BE 2.5 machined	0.5 - 4.0	630	25	-	-	-	-	Module frame
Modul 4pole cage clamp	4	cage clamp	-	0.5 - 2.5	400	14	600	14	600	14	Module frame
Modul 5pole	5	crimp	MC 2.5 machined	0.5 - 4.0	400	20	-	-	-	-	Module frame
Modul 10pole machined	10	crimp	H-D 1.6 machined	0.14 - 2.5	250	10	-	-	-	-	Module frame
Modul 10pole stamped	10	crimp	H-D 1.6 stamped	0.14 - 2.5	250	10	-	-	-	-	Module frame
Modul 20pole	20	crimp	M-D 1.0 stamped	0.08 - 0.52	100	4	-	-	-	-	Module frame
Modul 3pole Coax	3	solder	MC Coax	-	250	-	-	-	-	-	Module frame
Modul Profibus DP	2+shield	screw	-	max. 1.5	30	1	-	-	-	-	Module frame
Modul Universal Bus	4+shield	screw	-	max. 1.5	30	1	-	-	-	-	Module frame
Modul RJ45	8 + 4	crimp	H-D 1.6 machined	Cat.5/0.14 - 2.5	125/600	1.5/10	-	-	-	-	Module frame
Module frame MCR 6	-	-	for 2 modules	-	-	-	-	-	-	-	H-B 6
Module frame MCR 10	-	-	for 3 modules	-	-	-	-	-	-	-	H-B 10
Module frame MCR 16	-	-	for 5 modules	-	-	-	-	-	-	-	H-B 16
Module frame MCR 24	-	-	for 7 modules	-	-	-	-	-	-	-	H-B 24

Technical Data

Inserts	Number of contacts	Termination technology	Suitable contacts	Cross-section [mm²]	IEC : Rated voltage [V]	IEC : Rated current [A]	UL : Rated voltage [V]	UL : Rated current [A]	CSA : Rated voltage [V]	CSA : Rated current [A]	Suitable housings
EPIC® Rectangular Connectors											
H-BE 32	32 + PE	screw	-	0.5 - 2.5	500	16	600	16	600	16	H-B 32
H-BE 32	32 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H-B 32
H-BE 32	32 + PE	cage clamp	-	0.5 - 2.5	500	16	600	16	600	16	H-B 32
H-BE 48	48 + PE	screw	-	0.5 - 2.5	500	16	600	16	600	16	H - B 4 8
H-BE 48	48 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H - B 4 8
H-BE 48	48 + PE	cage clamp	-	0.5 - 2.5	500	16	600	16	600	16	H - B 4 8
H-EE 10	10 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H-B 6
H-EE 18	18 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H-B 10
H-EE 32	32 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H-B 16
H-EE 46	46 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H - B 2 4
H-EE 64	64 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H-B 32
H-EE 92	92 + PE	crimp	H-BE 2.5 machined	0.5 - 4.0	500	16	600	16	600	16	H - B 4 8
H-BS 6	6 + PE	screw	-	0.5 - 6.0	400	35	600	35	600	35	H-B 16
H-BS 12	12 + PE	screw	-	0.5 - 6.0	400	35	600	35	600	35	H-B 32
H-BVE 3	3+2+PE	screw	-	0.5 - 2.5	630	16	600	16	600	16	H-B 10
H-BVE 3	3+2+PE	cage clamp	-	0.5 - 2.5	830	16	600	16	600	16	H-B 10
H-BVE 6	6+2+PE	screw	-	0.5 - 2.5	630	16	600	16	600	16	H - B 1 6
H-BVE 10	10+2+PE	screw	-	0.5 - 2.5	630	16	600	16	600	16	H-B 24
Terminal Block TB-H-BE 6	6 + PE	screw	-	0.5 - 4.0	500	16	600	16	600	16	H-B 6
Terminal Block TB-H-BE 10	10 + PE	screw	-	0.5 - 4.0	500	16	600	16	600	16	H-B 10
Terminal Block TB-H-BE 16	16 + PE	screw	-	0.5 - 4.0	500	16	600	16	600	16	H - B 1 6
Terminal Block TB-H-BE 24	24 + PE	screw	-	0.5 - 4.0	500	16	600	16	600	16	H-B 24
Module High current 1+PE	1 + PE	screw	-	10.0 - 25.0	1000	82	-	-	-	-	Module frame
Module High current 2pol.	2	screw	-	10.0 - 25.0	1000	82	-	-	-	-	Module frame
Module High voltage 3pol.	3	crimp	MC 3.6 machined	1.5 - 10.0	1000	50	-	-	-	-	Module frame
Module High voltage 4+PE	4 + PE	crimp	MC 2.5 stamped	0.5 - 2.5	1000	16	-	-	-	-	Module frame
Modul 3pole	3	crimp	MC 3.6 machined	1.5 - 10.0	630	40	-	-	-	-	Module frame
Modul 4pole HE	4	crimp	H-BE 2.5 machined	0.5 - 4.0	630	25	-	-	-	-	Module frame
Modul 4pole cage clamp	4	cage clamp	-	0.5 - 2.5	400	14	600	14	600	14	Module frame
Modul 5pole	5	crimp	MC 2.5 machined	0.5 - 4.0	400	20	-	-	-	-	Module frame
Modul 10pole machined	10	crimp	H-D 1.6 machined	0.14 - 2.5	250	10	-	-	-	-	Module frame
Modul 10pole stamped	10	crimp	H-D 1.6 stamped	0.14 - 2.5	250	10	-	-	-	-	Module frame
Modul 20pole	20	crimp	M-D 1.0 stamped	0.08 - 0.52	100	4	-	-	-	-	Module frame
Modul 3pole Coax	3	solder	MC Coax	-	250	-	-	-	-	-	Module frame
Modul Profibus DP	2+shield	screw	-	max. 1.5	30	1	-	-	-	-	Module frame
Modul Universal Bus	4+shield	screw	-	max. 1.5	30	1	-	-	-	-	Module frame
Modul RJ45	8 + 4	crimp	H-D 1.6 machined	Cat.5/0.14 - 2.5	125/600	1.5/10	-	-	-	-	Module frame
Module frame MCR 6	-	-	for 2 modules	-	-	-	-	-	-	-	H-B 6
Module frame MCR 10	-	-	for 3 modules	-	-	-	-	-	-	-	H-B 10
Module frame MCR 16	-	-	for 5 modules	-	-	-	-	-	-	-	H-B 16
Module frame MCR 24	-	-	for 7 modules	-	-	-	-	-	-	-	H-B 24

EPIC® H-A 3 Kits Thermoplastic



Article number	Pieces / PU
75009601	1

Article numbers for single components

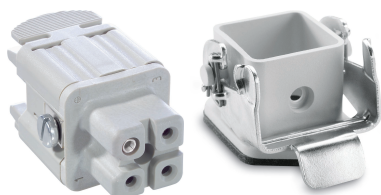
- H-A 3 SS 10420000 (Main Catalogue Page 450)
- H-A 3 Tgv M20 19426000 (Main Catalogue Page 497)



Article number	Pieces / PU
75009603	1

Article numbers for single components

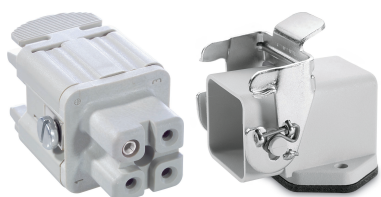
- H-A 3 SS 10420000 (Main Catalogue Page 450)
- H-A 3 Ts M20 19427000 (Main Catalogue Page 498)



Article number	Pieces / PU
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Article numbers for single components

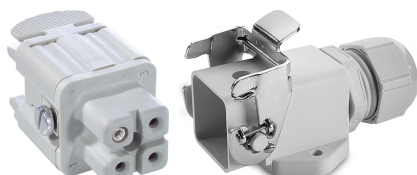
- H-A 3 BS 10421000 (Main Catalogue Page 450)
- H-A 3 Ag 10422000 (Main Catalogue Page 499)



Article number	Pieces / PU
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Article numbers for single components

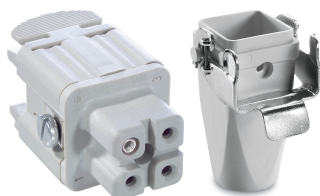
- H-A 3 BS 10421000 (Main Catalogue Page 450)
- H-A 3 Ags 10423000 (Main Catalogue Page 499)



Article number	Pieces / PU
75009609	1

Article numbers for single components

- H-A 3 BS 10421000 (Main Catalogue Page 450)
- H-A 3 Tgvb M20 19429000 (Main Catalogue Page 501)



Article number	Pieces / PU
75009611	1

Article numbers for single components

- H-A 3 SS 10420000 (Main Catalogue Page 450)
- H-A 3 Tgv M20 19426000 (Main Catalogue Page 497)

EPIC KIT H-A 3 SS TG M20



- EPIC® H-A 3 screw-termination male insert
- EPIC® H-A 3 hood
- Housing: thermoplastic grey

EPIC KIT H-A 3 SS TS M20



- EPIC® H-A 3 screw-termination male insert
- EPIC® H-A 3 hood
- Side cable entry
- Housing: thermoplastic grey

EPIC KIT H-A 3 BS AG



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Straight version
- Housing: thermoplastic grey

EPIC KIT H-A 3 BS AGS



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: thermoplastic grey

EPIC KIT H-A 3 BS AGS M20



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: thermoplastic grey

EPIC KIT H-A 3 BS TGB M20



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 cable coupler hood
- Housing: thermoplastic grey



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Similar products

- EPIC® H-A 3 Kits Metal refer to Main Catalogue page 584

Technical data

Rated voltage (V)

IEC: 400 V
UL: 600 V
CSA: 600 V

Rated current (A)

IEC: 23 A
UL: 10 A
CSA: 10 A

Number of contacts
3 + PE

EPIC® H-A 3 Kits Metal

EPIC KIT H-A 3 SS MTG M20



- EPIC® H-A 3 screw-termination male insert
- EPIC® H-A 3 hood
- Housing: zinc die-casting, grey

Article number	Pieces / PU
75009602	1

Article numbers for single components

- H-A 3 SS 10420000 (Main Catalogue Page 450)
- H-A 3 MTgv M20 19512100 (Main Catalogue Page 497)

EPIC KIT H-A 3 SS MTS M20



- EPIC® H-A 3 screw-termination male insert
- EPIC® H-A 3 hood
- Side cable entry
- Housing: zinc die-casting, grey

Article number	Pieces / PU
75009604	1

Article numbers for single components

- H-A 3 SS 10420000 (Main Catalogue Page 450)
- H-A 3 Ts M20 19512300 (Main Catalogue Page 498)

EPIC KIT H-A 3 BS MAG



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Straight version
- Housing: zinc die-casting, grey

Article number	Pieces / PU
75009606	1

Article numbers for single components

- H-A 3 BS 10421000 (Main Catalogue Page 450)
- H-A 3 Mag 10422500 (Main Catalogue Page 499)

EPIC KIT H-A 3 BS MAGS



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: zinc die-casting, grey

Article number	Pieces / PU
75009608	1

Article numbers for single components

- H-A 3 BS 10421000 (Main Catalogue Page 450)
- H-A 3 Mags 10423500 (Main Catalogue Page 499)

EPIC KIT H-A 3 BS MAGS M20



- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: zinc die-casting, grey

Article number	Pieces / PU
75009610	1

Article numbers for single components

- H-A 3 BS 10421000 (Main Catalogue Page 450)
- H-A 3 Magsv M20 19512700 (Main Catalogue Page 500)

EPIC KIT H-A 3 BS MTGB M20

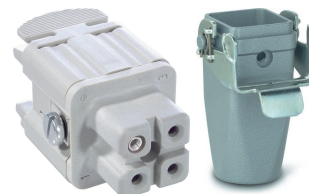
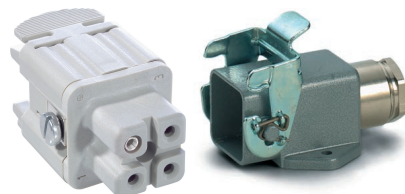
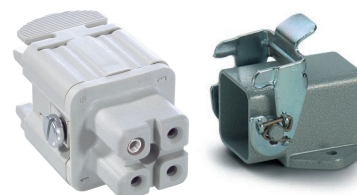
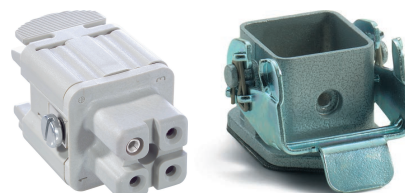


- EPIC® H-A 3 screw termination female insert
- EPIC® H-A 3 cable coupler hood
- Housing: zinc die-casting, grey

Article number	Pieces / PU
75009612	1

Article numbers for single components

- H-A 3 BS 10421000 (Main Catalogue Page 450)
- H-A 3 MTgvb M20 19512900 (Main Catalogue Page 501)



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Similar products

- EPIC® H-A 3 Kits Thermoplastic refer to Main Catalogue page 583

Technical data

Rated voltage (V)
IEC: 400 V
UL: 600 V
CSA: 600 V

Rated current (A)
IEC: 23 A
UL: 10 A
CSA: 10 A

Number of contacts
3 + PE

EPIC® H-A 4 Kits Thermoplastic



Article number	Pieces / PU
75009613	1

Article numbers for single components

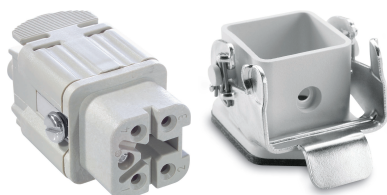
- H-A 4 SS 10431000 (Main Catalogue Page 450)
- H-A 3 Tgv M20 19426000 (Main Catalogue Page 497)



Article number	Pieces / PU
75009615	1

Article numbers for single components

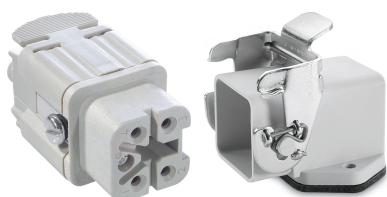
- H-A 4 SS 10431000 (Main Catalogue Page 450)
- H-A 3 Ts M20 19427000 (Main Catalogue Page 498)



Article number	Pieces / PU
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Article numbers for single components

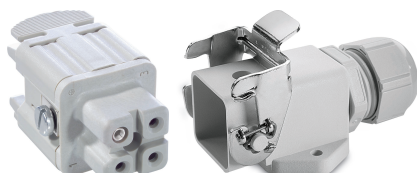
- H-A 4 BS 10432000 (Main Catalogue Page 450)
- H-A 3 Ag 10422000 (Main Catalogue Page 499)



Article number	Pieces / PU
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Article numbers for single components

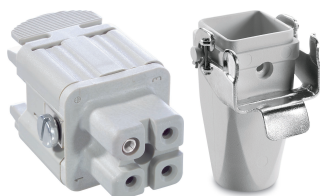
- H-A 4 BS 10432000 (Main Catalogue Page 450)
- H-A 3 Ags 10423000 (Main Catalogue Page 499)



Article number	Pieces / PU
75009621	1

Article numbers for single components

- H-A 4 BS 10432000 (Main Catalogue Page 450)
- H-A 3 Agsv M20 19421900 (Main Catalogue Page 500)



Article number	Pieces / PU
75009623	1

Article numbers for single components

- H-A 4 BS 10432000 (Main Catalogue Page 450)
- H-A 3 Tgvb M20 19429000 (Main Catalogue Page 501)

EPIC KIT H-A 4 SS TG M20



- EPIC® H-A 4 screw-termination male insert
- EPIC® H-A 3 hood
- Straight cable entry
- Housing: thermoplastic grey

EPIC KIT H-A 4 SS TS M20



- EPIC® H-A 4 screw-termination male insert
- EPIC® H-A 3 hood
- Side cable entry
- Housing: thermoplastic grey

EPIC KIT H-A 4 BS AG



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Straight version
- Housing: thermoplastic grey

EPIC KIT H-A 4 BS AGS



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: thermoplastic grey

EPIC KIT H-A 4 BS AGS M20



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: thermoplastic grey

EPIC KIT H-A 4 BS TGB M20



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 cable coupler hood
- Straight cable entry
- Housing: thermoplastic grey



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Similar products

- EPIC® H-A 4 Kits Metal refer to Main Catalogue page 586

Technical data

Rated voltage (V)

IEC: 400 V
UL: 600 V
CSA: 600 V

Rated current (A)

IEC: 23 A
UL: 10 A
CSA: 10 A

Number of contacts

4 + PE

EPIC® H-A 4 Kits Metal

■ EPIC KIT H-A 4 SS MTG M20



- EPIC® H-A 4 screw-termination male insert
- EPIC® H-A 3 hood
- Straight cable entry
- Housing: zinc die-casting, grey

Article number	Pieces / PU
75009614	1

■ Article numbers for single components

- H-A 4 SS 10431000 (Main Catalogue Page 450)
- H-A 3 MTgv M20 19512100 (Main Catalogue Page 497)

■ EPIC KIT H-A 4 SS MTS M20



- EPIC® H-A 4 screw-termination male insert
- EPIC® H-A 3 hood
- Side cable entry
- Housing: zinc die-casting, grey

Article number	Pieces / PU
75009616	1

■ Article numbers for single components

- H-A 4 SS 10431000 (Main Catalogue Page 450)
- H-A 3 Ts M20 19512300 (Main Catalogue Page 498)

■ EPIC KIT H-A 4 BS MAG



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Straight version
- Housing: zinc die-casting, grey

Article number	Pieces / PU
75009618	1

■ Article numbers for single components

- H-A 4 BS 10432000 (Main Catalogue Page 450)
- H-A 3 Mag 10422500 (Main Catalogue Page 499)

■ EPIC KIT H-A 4 BS MAGS



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: zinc die-casting, grey

Article number	Pieces / PU
75009620	1

■ Article numbers for single components

- H-A 4 BS 10432000 (Main Catalogue Page 450)
- H-A 3 Mags 10423500 (Main Catalogue Page 499)

■ EPIC KIT H-A 4 BS MAGS M20



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 panel-mount base
- Angled version
- Housing: zinc die-casting, grey

Article number	Pieces / PU
75009622	1

■ Article numbers for single components

- H-A 4 BS 10432000 (Main Catalogue Page 450)
- H-A 3 Magsv M20 19512700 (Main Catalogue Page 500)

■ EPIC KIT H-A 4 BS TGB M20



- EPIC® H-A 4 screw termination female insert
- EPIC® H-A 3 cable coupler hood
- Straight cable entry
- Housing: zinc die-casting, grey

Article number	Pieces / PU
75009624	1

■ Article numbers for single components

- H-A 4 BS 10432000 (Main Catalogue Page 450)
- H-A 3 MTgvb M20 19512900 (Main Catalogue Page 501)



Info

- Complete connectors - easy to order

■ Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

■ Similar products

- EPIC® H-A 4 Kits Thermoplastic refer to Main Catalogue page 585

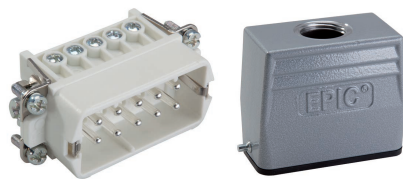
■ Technical data

Rated voltage (V)
IEC: 400 V
UL: 600 V
CSA: 600 V

Rated current (A)
IEC: 23 A
UL: 10 A
CSA: 10 A

Number of contacts
4 + PE

EPIC® H-A 10 Kits



Article number	Pieces / PU
75009625	1

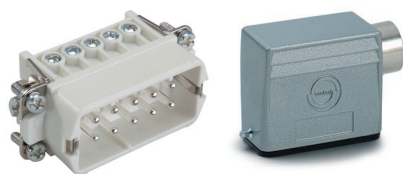
Article numbers for single components

- H-A 10 SS 10440100 (Main Catalogue Page 451)
- H-A 10 TG M20 19446000 (Main Catalogue Page 502)

EPIC KIT H-A 10 SS TG M20



- EPIC® H-A 10 screw-termination male insert
- With wire protection
- EPIC® H-A 10 hood



Article number	Pieces / PU
75009626	1

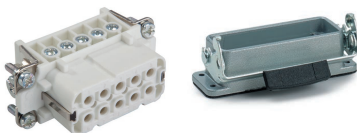
Article numbers for single components

- H-A 10 SS 10440100 (Main Catalogue Page 451)
- H-A 10 TS M20 19445000 (Main Catalogue Page 503)

EPIC KIT H-A 10 SS TS M20



- EPIC® H-A 10 screw-termination male insert
- With wire protection
- EPIC® H-A 10 hood



Article number	Pieces / PU
75009627	1

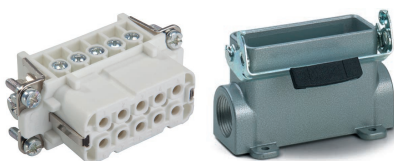
Article numbers for single components

- H-A 10 BS 10441100 (Main Catalogue Page 451)
- H-A 10 AG-LB 10442000 (Main Catalogue Page 504)

EPIC KIT H-A 10 BS AG



- EPIC® H-A 10 screw termination female insert
- With wire protection
- EPIC® H-A 10 panel-mount base



Article number	Pieces / PU
75009628	1

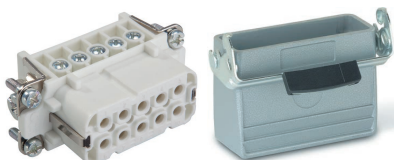
Article numbers for single components

- H-A 10 BS 10441100 (Main Catalogue Page 451)
- H-A 10 SGR-LB M20 19448100 (Main Catalogue Page 505)

EPIC KIT H-A 10 BS SGR-LB M20



- EPIC® H-A 10 screw termination female insert
- With wire protection
- EPIC® H-A 10 surface-mount base



Article number	Pieces / PU
75009629	1

Article numbers for single components

- H-A 10 BS 10441100 (Main Catalogue Page 451)
- H-A 10 TBF-LB M20 19439000 (Main Catalogue Page 507)

EPIC KIT H-A 10 BS TBF-LB M20



- EPIC® H-A 10 screw termination female insert
- With wire protection
- EPIC® H-A 10 cable coupler hood



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Technical data

Rated voltage (V)

IEC: 250 V
UL: 600 V
CSA: 600 V

Rated current (A)

IEC: 16 A
UL: 14 A
CSA: 16 A

Number of contacts

10 + PE

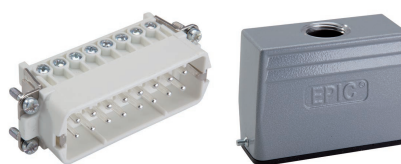
■ EPIC KIT H-A 16 SS TG M20


- EPIC® H-A 16 screw-termination male insert
- With wire protection
- EPIC® H-A 16 hood

Article number	Pieces / PU
75009630	1

■ Article numbers for single components

- H-A 16 SS 10530000 (Main Catalogue Page 451)
- H-A 16 TG M20 19565000 (Main Catalogue Page 508)

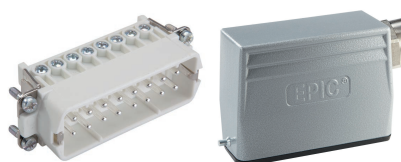

■ EPIC KIT H-A 16 SS TS M20


- EPIC® H-A 16 screw-termination male insert
- With wire protection
- EPIC® H-A 16 hood

Article number	Pieces / PU
75009631	1

■ Article numbers for single components

- H-A 16 SS 10530000 (Main Catalogue Page 451)
- H-A 16 TS M20 19564000 (Main Catalogue Page 509)

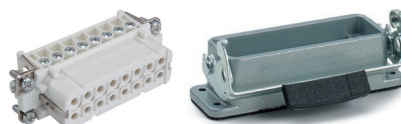

■ EPIC KIT H-A 16 BS AG


- EPIC® H-A 16 screw termination female insert
- With wire protection
- EPIC® H-A 16 panel-mount base

Article number	Pieces / PU
75009632	1

■ Article numbers for single components

- H-A 16 BS 10531000 (Main Catalogue Page 451)
- H-A 16 AG-LB 10462000 (Main Catalogue Page 510)

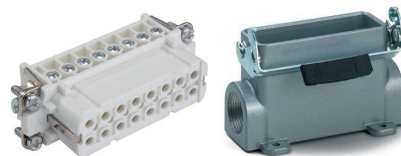

■ EPIC KIT H-A 16 BS SGR-LB M20


- EPIC® H-A 16 screw termination female insert
- With wire protection
- EPIC® H-A 16 surface-mount base

Article number	Pieces / PU
75009633	1

■ Article numbers for single components

- H-A 16 BS 10531000 (Main Catalogue Page 451)
- H-A 16 SGR-LB M20 19567100 (Main Catalogue Page 511)

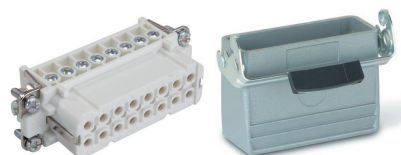

■ EPIC KIT H-A 16 BS TBF-LB M20


- EPIC® H-A 16 screw termination female insert
- With wire protection
- EPIC® H-A 16 cable coupler hood

Article number	Pieces / PU
75009634	1

■ Article numbers for single components

- H-A 16 BS 10531000 (Main Catalogue Page 451)
- H-A 16 TBF-LB M20 19563000 (Main Catalogue Page 513)


Info

- Complete connectors - easy to order

■ Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

■ Technical data
Rated voltage (V)

IEC: 250 V
UL: 600 V
CSA: 600 V

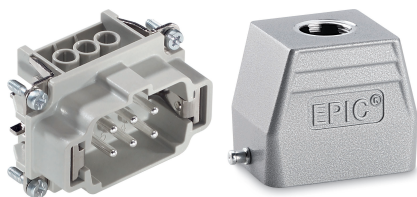
Rated current (A)

IEC: 16 A
UL: 14 A
CSA: 16 A

Number of contacts

16 + PE

EPIC® H-BE 6 Kits



Article number	Pieces / PU
75009635	1

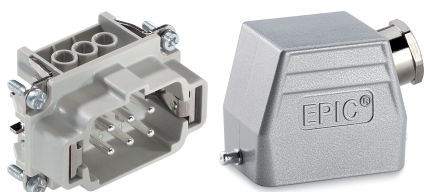
Article numbers for single components

- H-BE 6 SS 10190000 (Main Catalogue Page 465)
- H-B 6 TG M20 19011000 (Main Catalogue Page 526)

EPIC KIT H-BE 6 SS TG M20



- EPIC® H-BE 6 screw-termination male insert
- With wire protection
- EPIC® H-B 6 hood



Article number	Pieces / PU
75009636	1

Article numbers for single components

- H-BE 6 SS 10190000 (Main Catalogue Page 465)
- H-B 6 TS M20 19012000 (Main Catalogue Page 526)

EPIC KIT H-BE 6 SS TS M20



- EPIC® H-BE 6 screw-termination male insert
- With wire protection
- EPIC® H-B 6 hood



Article number	Pieces / PU
75009637	1

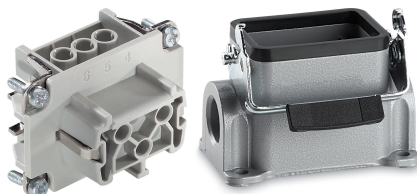
Article numbers for single components

- H-BE 6 BS 10191000 (Main Catalogue Page 465)
- H-B 6 AG-LB 10003000 (Main Catalogue Page 527)

EPIC KIT H-BE 6 BS AG-LB



- EPIC® H-BE 6 screw termination female insert
- With wire protection
- EPIC® H-B 6 panel-mount base



Article number	Pieces / PU
75009638	1

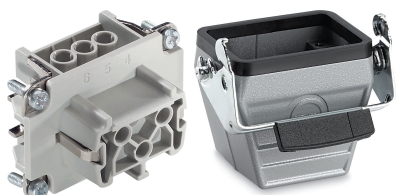
Article numbers for single components

- H-BE 6 BS 10191000 (Main Catalogue Page 465)
- H-B 6 SGR M20 19005000 (Main Catalogue Page 528)

EPIC KIT H-BE 6 BS SGR-LB M20



- EPIC® H-BE 6 screw termination female insert
- With wire protection
- EPIC® H-B 6 surface-mount base



Article number	Pieces / PU
75009639	1

Article numbers for single components

- H-BE 6 BS 10191000 (Main Catalogue Page 465)
- H-B 6 TBF M20 19014000 (Main Catalogue Page 531)

EPIC KIT H-BE 6 BS TBF-LB M20



- EPIC® H-BE 6 screw termination female insert
- With wire protection
- EPIC® H-B 6 cable coupler hood



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Number of contacts

6 + PE

EPIC® H-BE 10 Kits

■ EPIC KIT H-BE 10 SS TG M25

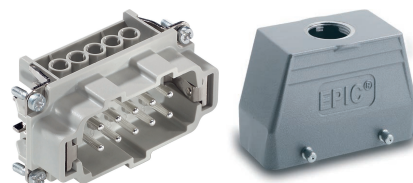


- EPIC® H-BE 10 screw-termination male insert
- With wire protection
- EPIC® H-B 10 hood

Article number	Pieces / PU
75009640	1

■ Article numbers for single components

- H-BE 10 SS 10192000 (Main Catalogue Page 466)
- H-B 10 TG M25 19040100 (Main Catalogue Page 533)



■ EPIC KIT H-BE 10 SS TS M25

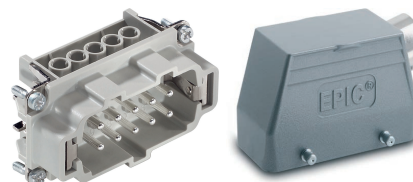


- EPIC® H-BE 10 screw-termination male insert
- With wire protection
- EPIC® H-B 10 hood

Article number	Pieces / PU
75009641	1

■ Article numbers for single components

- H-BE 10 SS 10192000 (Main Catalogue Page 466)
- H-B 10 TS M25 19042100 (Main Catalogue Page 534)



■ EPIC KIT H-BE 10 BS AG

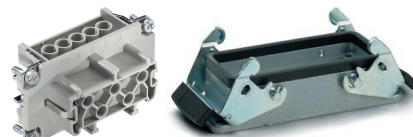


- EPIC® H-BE 10 screw termination female insert
- With wire protection
- EPIC® H-B 10 panel-mount base

Article number	Pieces / PU
75009642	1

■ Article numbers for single components

- H-BE 10 BS 10193000 (Main Catalogue Page 466)
- H-B 10 AG 10032000 (Main Catalogue Page 536)



■ EPIC KIT H-BE 10 BS SGR M25

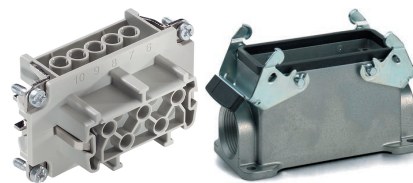


- EPIC® H-BE 10 screw termination female insert
- With wire protection
- EPIC® H-B 10 surface-mount base

Article number	Pieces / PU
75009643	1

■ Article numbers for single components

- H-BE 10 BS 10193000 (Main Catalogue Page 466)
- H-B 10 SGR M25 19034100 (Main Catalogue Page 540)



■ EPIC KIT H-BE 10 BS TBF M25

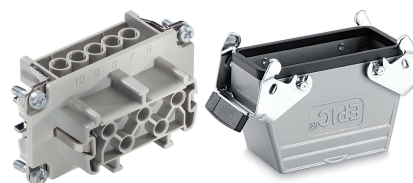


- EPIC® H-BE 10 screw termination female insert
- With wire protection
- EPIC® H-B 10 cable coupler hood

Article number	Pieces / PU
75009644	1

■ Article numbers for single components

- H-BE 10 BS 10193000 (Main Catalogue Page 466)
- H-B 10 TBF M25 79040200 (Main Catalogue Page 543)



Info

- Complete connectors - easy to order

■ Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

■ Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

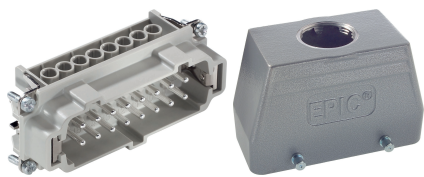
Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Number of contacts

10 + PE

EPIC® H-BE 16 Kits



Article number	Pieces / PU
75009645	1

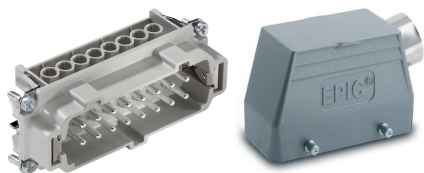
Article numbers for single components

- H-BE 16 SS 10194000 (Main Catalogue Page 467)
- H-B 16 TG M25 19080000 (Main Catalogue Page 546)

EPIC KIT H-BE 16 SS TG M25



- EPIC® H-BE 16 screw termination female insert
- With wire protection
- EPIC® H-B 16 hood



Article number	Pieces / PU
75009646	1

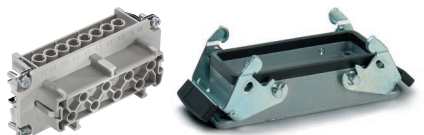
Article numbers for single components

- H-BE 16 SS 10194000 (Main Catalogue Page 467)
- H-B 16 TS M25 19082000 (Main Catalogue Page 548)

EPIC KIT H-BE 16 SS TS M25



- EPIC® H-BE 16 screw termination female insert
- With wire protection
- EPIC® H-B 16 hood



Article number	Pieces / PU
75009647	1

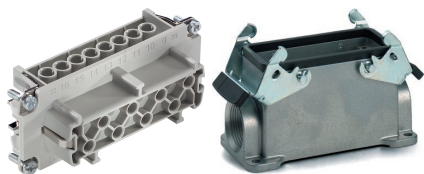
Article numbers for single components

- H-BE 16 BS 10195000 (Main Catalogue Page 467)
- H-B 16 AG 10072000 (Main Catalogue Page 550)

EPIC KIT H-BE 16 BS AG



- EPIC® H-BE 16 screw termination female insert
- With wire protection
- EPIC® H-B 16 panel-mount base



Article number	Pieces / PU
75009648	1

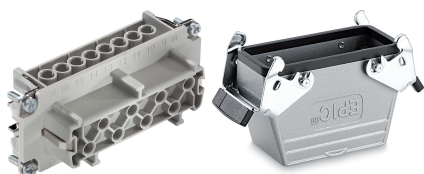
Article numbers for single components

- H-BE 16 BS 10195000 (Main Catalogue Page 467)
- H-B 16 SGR M25 19074000 (Main Catalogue Page 554)

EPIC KIT H-BE 16 BS SGR M25



- EPIC® H-BE 16 screw termination female insert
- With wire protection
- EPIC® H-B 16 surface-mount base



Article number	Pieces / PU
75009649	1

Article numbers for single components

- H-BE 16 BS 10195000 (Main Catalogue Page 467)
- H-B 16 TBF M25 19086000 (Main Catalogue Page 557)

EPIC KIT H-BE 16 BS TBF M25



- EPIC® H-BE 24 screw termination female insert
- With wire protection
- EPIC® H-B 16 cable coupler hood



Info

- Complete connectors - easy to order

Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Number of contacts

16 + PE

EPIC® H-BE 24 Kits

■ EPIC KIT H-BE 24 SS TG M25

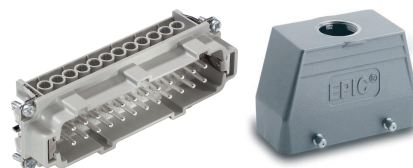


- EPIC® H-BE 24 screw-termination male insert
- With wire protection
- EPIC® H-B 24 hood

Article number	Pieces / PU
75009650	1

■ Article numbers for single components

- H-BE 24 SS 10196000 (Main Catalogue Page 468)
- H-B 24 TG M25 19121000 (Main Catalogue Page 560)



■ EPIC KIT H-BE 24 SS TS M25

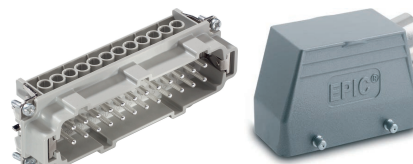


- EPIC® H-BE 24 screw-termination male insert
- With wire protection
- EPIC® H-B 24 hood

Article number	Pieces / PU
75009651	1

■ Article numbers for single components

- H-BE 24 SS 10196000 (Main Catalogue Page 468)
- H-B 24 TS M25 19113000 (Main Catalogue Page 562)



■ EPIC KIT H-BE 24 BS AG

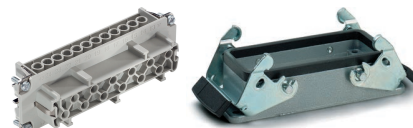


- EPIC® H-BE 24 screw termination female insert
- With wire protection
- EPIC® H-B 24 panel-mount base

Article number	Pieces / PU
75009652	1

■ Article numbers for single components

- H-BE 24 BS 10197000 (Main Catalogue Page 468)
- H-B 24 AG 10102000 (Main Catalogue Page 564)



■ EPIC KIT H-BE 24 BS SGR M25

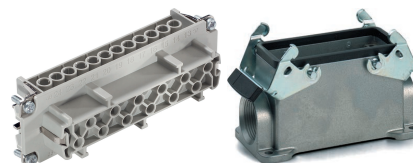


- EPIC® H-BE 24 screw termination female insert
- With wire protection
- EPIC® H-B 24 surface-mount base

Article number	Pieces / PU
75009653	1

■ Article numbers for single components

- H-BE 24 BS 10197000 (Main Catalogue Page 468)
- H-B 24 SGR M25 19104000 (Main Catalogue Page 568)



■ EPIC KIT H-BE 24 BS TBF M25

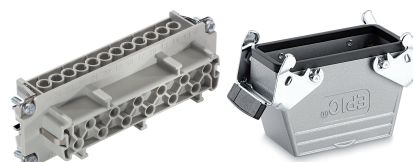


- EPIC® H-BE 24 screw termination female insert
- With wire protection
- EPIC® H-B 24 cable coupler hood

Article number	Pieces / PU
75009654	1

■ Article numbers for single components

- H-BE 24 BS 10197000 (Main Catalogue Page 468)
- H-B 24 TBF M25 19127000 (Main Catalogue Page 571)



Info

- Complete connectors - easy to order

■ Benefits

- Pre-packed kits with compatible components
- Uncomplicated ordering
- No misplaced orders

■ Technical data

Rated voltage (V)

IEC: 500 V
UL: 600 V
CSA: 600 V

Rated current (A)

IEC: 16 A
UL: 16 A
CSA: 16 A

Number of contacts
24 + PE

SKINTOP® metric nickel-plated brass cable glands

SKINTOP® MS-M/SKINTOP® MSR-M

SKINTOP® MS-M / SKINTOP® MSR-M

New 78

SKINTOP® MS-M-XL/SKINTOP® MSR-M-XL

SKINTOP® MS-M-XL / SKINTOP® MSR-M-XL

79

SKINTOP® COLD

SKINTOP® COLD / SKINTOP® COLD-R

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SKINTOP® explosion-proof

SKINTOP® MS-M ATEX BRUSH

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SKINTOP®

Cable glands

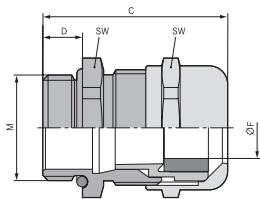


New

SKINTOP® MS-M / SKINTOP® MSR-M



SKINTOP® MS-M



SKINTOP® MSR-M



Info

- SKINTOP® MS-M sizes 75 x 1.5 to 110 x 2 with innovative double lamella gasket or easier assembling of cables with large diameters.
- Now with IP 69 K approval! Proven to withstand the most demanding cleaning procedures for industrial machinery with high-pressure cleaners and hot water!

Benefits

SKINTOP® MS-M

- Maximum reliability
- Optimum strain relief
- Wide, variable clamping ranges
- For cable diameters up to 98 mm

SKINTOP® MSR-M

- For the benefits, refer to SKINTOP® MS-M

Application range

SKINTOP® MS-M

- In areas where mechanical and chemical stability are critical
- Machine and equipment manufacturing
- Measurement and control technology
- Machine and equipment manufacturing
- Plant engineering

SKINTOP® MSR-M

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals



- UL File Nr. E79903

Design

- Metric connection thread acc. to EN 50262

Note

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

Suitable cables

SKINTOP® MS-M

- The following cables are recommended for IP 69 K applications:
ÖLFLEX® ROBUST 200
H07RN8-F
H07RN-F

Technical data



Caution

Refer to Main Catalogue Appendix T21 for the installation dimensions and torques



Approvals

IP 69 K approval from size M75 x 1.5 pending. UL, CSA, DNV and VDE approval for sizes M90 x 2 to M110 x 2 pending.



Material

Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR



Protection rating

IP 68
IP 69 K



Temperature range

Dynamic: -30 °C to +100 °C
Fixed: -40 °C to +100 °C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-M / SKINTOP® MSR-M						
53112000	12 x 1,5	3-7	16	26.5	6.5	100
53112010	16 x 1,5	4,5-10	20	32.0	7.0	100
53112020	20 x 1,5	7-13	24	35.5	8.0	50
53112030	25 x 1,5	9-17	29	37.5	8.0	25
53112040	32 x 1,5	11-21	36	42.2	9.0	25
53112050	40 x 1,5	19-28	45	49.5	9.0	10
53112060	50 x 1,5	27-35	54	52.0	10.0	5
53112070	63 x 1,5	34-45	67	61.3	15.0	5
53112080	63 x 1,5 plus	44-55	75	65.5	15.0	5
53112510	75 x 1,5	58-68	95	105.0	15.0	1
53112512	90 x 2	66-78	115	136.0	20.0	1
53112514	110 x 2	86-98	135	154.0	25.0	1
SKINTOP® MSR-M						
53112100	12 x 1,5	1-5	16	26.5	6.5	100
53112110	16 x 1,5	2-7	20	32.0	7.0	100
53112120	20 x 1,5	5-10	24	35.5	8.0	50
53112130	25 x 1,5	6-13	29	37.5	8.0	25
53112140	32 x 1,5	7-15	36	42.2	9.0	25
53112150	40 x 1,5	15-23	45	49.5	9.0	10
53112160	50 x 1,5	22-29	54	52.0	10.0	5
53112170	63 x 1,5	28-39	67	61.3	15.0	5
53112511	75 x 1,5	53-63	95	105.0	15.0	1
53112515	110 x 2	76-88	135	154.0	25.0	1

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

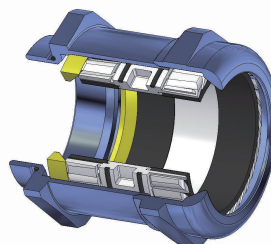
Accessories

SKINTOP® MS-M

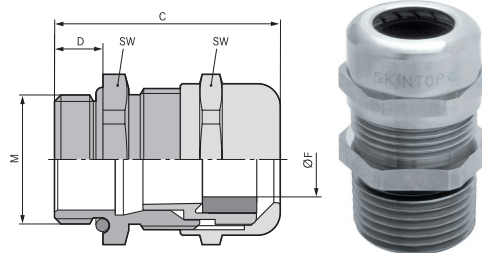
- SKINDICHT® SM-M refer to Main Catalogue page 694
- SKINTOP® DIX-M refer to Main Catalogue page 672
- SKINMATIC® MH Set refer to Main Catalogue page 710
- SKINTOP® DIX-M AUTOMATION refer to Main Catalogue page 673
- SKINTOP® SDV-M ATEX refer to Main Catalogue page 674
- SKINTOP® SD-M refer to Main Catalogue page 675
- SKINTOP® DV-M refer to Main Catalogue page 675

SKINTOP® MSR-M

- SKINDICHT® SM-M refer to Main Catalogue page 694
- SKINTOP® SDVR-M ATEX refer to Main Catalogue page 674
- SKINTOP® SD-M refer to Main Catalogue page 675



SKINTOP® MS-M-XL / SKINTOP® MSR-M-XL



Benefits

SKINTOP® MS-M-XL

- Especially for thick walls
- Maximum reliability
- Optimum strain relief
- Wide, variable clamping ranges

SKINTOP® MSR-M-XL

- For the benefits, refer to SKINTOP® MS-M-XL

Application range

SKINTOP® MS-M-XL

- With long connection thread for applications involving a thicker wall.

SKINTOP® MSR-M-XL

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals



- UL File Nr. E79903

Design

- Metric connection thread acc. to EN 50262

Note

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

Technical data



Caution

Refer to Main Catalogue Appendix T21 for the installation dimensions and torques



Material

Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR



Protection rating

IP 68 - 10 bar
IP 69 K



Temperature range

Dynamic: -30 °C to +100 °C
Fixed: -40 °C to +100 °C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-M-XL						
53112005	12 x 1,5	3-7	16	32.8	12.0	100
53112015	16 x 1,5	4,5-10	20	37.0	12.0	50
53112025	20 x 1,5	7-13	24	39.5	12.0	50
53112035	25 x 1,5	9-17	29	41.5	12.0	25
53112045	32 x 1,5	11-21	36	48.2	15.0	25
53112055	40 x 1,5	19-28	45	53.5	15.0	10
53112065	50 x 1,5	27-35	54	57.0	15.0	5
SKINTOP® MSR-M-XL						
53112105	12 x 1,5	1-5	16	32.8	12.0	100
53112115	16 x 1,5	2-7	20	37.0	12.0	50
53112125	20 x 1,5	5-10	24	39.5	12.0	50
53112135	25 x 1,5	6-13	29	41.5	12.0	25
53112145	32 x 1,5	7-15	36	48.2	15.0	25
53112155	40 x 1,5	15-23	45	53.5	15.0	10
53112165	50 x 1,5	22-29	54	57.0	15.0	5

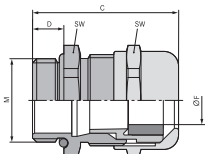
Photographs are not to scale and do not represent detailed images of the respective products.

New

SKINTOP® COLD / SKINTOP® COLD-R



SKINTOP® COLD



SKINTOP® COLD-R



Info

- For extreme sub-zero temperatures

Benefits

SKINTOP® COLD

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

SKINTOP® COLD-R

- For the benefits, refer to SKINTOP® COLD

Application range

SKINTOP® COLD

- In areas where mechanical stability and high cold-resistance are critical
- Air-conditioning technology
- Freezing plants, cold storage
- Offshore sector
- Plant engineering

SKINTOP® COLD-R

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

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

Technical data



Caution

Refer to Main Catalogue Appendix T21 for the installation dimensions and torques



Material

Metric connection thread acc. to EN 50262



Protection rating

IP 68 - 10 bar



Temperature range

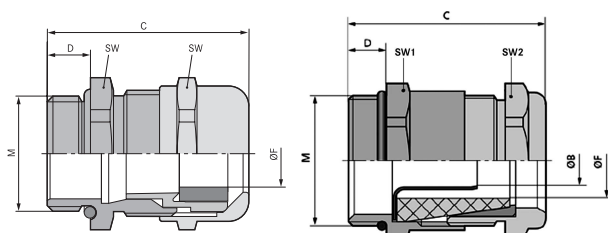
SKINTOP® MS-M ATEX BRUSH
-30°C to +90°C
SKINDICHT® SHVE-M ATEX
-20°C to +80°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® COLD						
53113500	12 x 1,5	3-7	16	26.5	6.5	100
53113510	16 x 1,5	4,5-10	20	32.0	7.0	100
53113520	20 x 1,5	7-13	24	35.5	8.0	50
53113530	25 x 1,5	9-17	29	37.5	8.0	25
53113540	32 x 1,5	11-21	36	42.2	9.0	25
53113550	40 x 1,5	19-28	45	49.5	9.0	10
53113560	50 x 1,5	27-35	54	52.0	10.0	5
53113570	63 x 1,5	34-45	67	61.3	15.0	5
SKINTOP® COLD-R						
53113600	12 x 1,5	1-5	16	26.5	6.5	100
53113610	16 x 1,5	2-7	20	32.0	7.0	100
53113620	20 x 1,5	5-10	24	35.5	8.0	50
53113630	25 x 1,5	6-13	29	37.5	8.0	25
53113640	32 x 1,5	7-15	36	42.2	9.0	25
53113650	40 x 1,5	15-23	45	49.5	9.0	10
53113660	50 x 1,5	22-29	54	52.0	10.0	5
53113670	63 x 1,5	28-39	67	61.3	15.0	5

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

New

SKINTOP® MS-M ATEX BRUSH


SKINTOP® MS-M ATEX BRUSH

Benefits

- Faster and less complicated assembling than any other system
- Optimum, F8480 low-resistance 360° screen contact
- Simple cable adjustment
- Easy to uninstall
- Anti-static, safe, and impact-resistant at cold temperatures

Application range

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath
- Chemical and petrochemical industry
- Plant engineering
- Equipment group II / Category 2G+1D
- Devices, machines and apparatus of enhanced safety protection type "e"

Approvals



Design

- Metric connection thread acc. to EN 50262

Design

- SKINDICHT® SHVE-M 20 x 1.5 ATEX design with EMC earthing sleeve to cover smaller cable clamping ranges

Technical data



Caution

Refer to the instruction leaflet for the installation dimensions and torques



Approvals

DNV for SKINDICHT® SHVE-M ATEX pending



Note

SKINDICHT® SHVE-M ATEX
IBExU08ATEX1161 X
Ex II 2G Ex e II
Ex II 1D Ex tD A20 IP 6X
SKINTOP® MS-M ATEX BRUSH
IBExU01ATEX1041 X
Ex II 2G Ex e II
Ex II 1D tD A20 IP6X



Material

SKINTOP® MS-M ATEX BRUSH
Body: nickel plated brass
Insert: special polyamide
EMV-Brush: brass
Seal: special elastomer
O-Ring: special elastomer
SKINDICHT® SHVE-M ATEX
Body: nickel plated brass
Earthing sleeve: brass
Seal: special elastomer
O-Ring: special elastomer

Tests

DIN EN 60079-0
DIN EN 60079-7



Protection rating

IP 68 - 10 bar



Temperature range

SKINTOP® MS-M ATEX BRUSH
-30°C to +90°C
SKINDICHT® SHVE-M ATEX
-20°C to +80°C

Article number	Article designation / size	Outer Ø (mm), from - to	Minimum Ø above braiding (mm)	SW (mm)	Thread length, D (mm)	Pieces / PU
SKINDICHT® SHVE-M ATEX						
52107102	20 x 1,5	6,9-8,9	5.0	24	6.0	10
SKINTOP® MS-M ATEX BRUSH						
52110023	25 x 1,5	9.0-17.0	6.0	29	8.0	10
52110024	32 x 1,5	11.0-21.0	8.0	36	9.0	1
52110025	40 x 1,5	19.0-28.0	10.0	45	9.0	1
52110026	50 x 1,5	27.0-35.0	14.0	54	10.0	1
52110027	63 x 1,5	34.0-45.0	20.0	67	15.0	1
52110028	63 x 1,5 plus	44.0-55.0	25.0	75	15.0	1

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

New

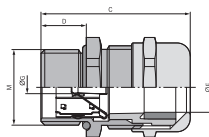
SKINTOP® MS-SC-M



SKINTOP® MS-SC-M-XL



SKINTOP® MS-SC-M



Benefits

- Suitable for cables with and without inner sheath
- Also suitable for continuing the cable screen to another connection
- Low-resistance screen contact, optimum EMC protection
- Highly conductive, flexible EMC contact for clamping various screen diameters
- Few operation steps, easy to assemble

Application range

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath
- Telecommunication
- Industrial machinery and plant engineering
- Measurement and control technology
- Automation technology

Approvals



- UL File Nr. E79903

Design

- UL File Nr. E79903

Note

- SKINDICHT® SM-PE-M counter nut should be used to ensure optimum contact with painted, anodised or powder-coated housings
- Refer to SKINTOP® metric accessories for suitable accessories
- As an alternative for thick-walled housings, we recommend SKINTOP® MS-SC-M-XL with long connection thread in the sizes M16 to M50

Technical data



Caution

Refer to Main Catalogue Appendix T21 for the installation imensions and torques



Material

Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR



Protection rating

IP 68 - 10 bar



Temperature range

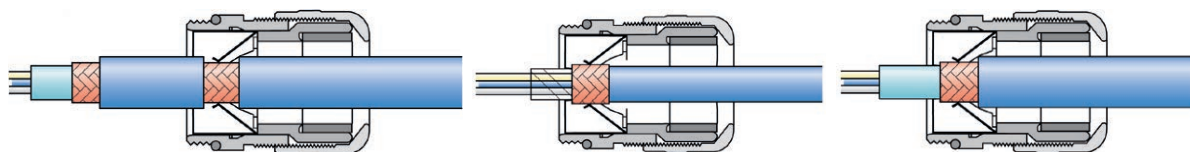
SKINTOP® MS-M ATEX BRUSH
-30 °C to +100 °C

Article number	Article designation / size	Outer Ø (mm), from - to	Minimum Ø above braiding (mm)	SW (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-SC-M						
53112610	12 x 1,5	3,5-7,0	2,0	16	6,5	50
53112620	16 x 1,5	4,5-9,0	4,0	20	7,0	50
53112630	20 x 1,5	7,0-12,5	5,0	24	8,0	25
53112640	25 x 1,5	9,0-16,5	7,5	29	8,0	25
53112650	32 x 1,5	11,0-21,0	9,0	36	9,0	25
53112660	40 x 1,5	19,0-28,0	15,0	45	9,0	10
53112670	50 x 1,5	27,0-35,0	21,0	54	10,0	5
SKINTOP® MS-SC-M-XL						
53112625	16 x 1,5	4,5-9,0	4,0	20	12,0	50
53112635	20 x 1,5	7,0-12,5	5,0	24	12,0	25
53112645	25 x 1,5	9,0-16,5	7,5	29	12,0	25
53112655	32 x 1,5	11,0-21,0	9,0	36	15,0	25
53112665	40 x 1,5	19,0-28,0	15,0	45	15,0	10
53112675	50 x 1,5	27,0-35,0	21,0	54	15,0	5

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

Accessories

- SKINDICHT® SM-PE-M refer to Main Catalogue page 694



New

SKINTOP® MS-M BRUSH

Benefits

- Faster, easier screen contact
- Optimum, F8480 low-resistance 360° screen contact
- Faster than any other comparable system
- Uncomplicated and reliable
- Maximum assembly freedom during adjustment

Application range

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath
- Automation systems
- High-power drives
- Frequency converters
- Conveyor and transport systems

Approvals

- 




- UL File Nr. E79903

Design

- Metric connection thread acc. to EN 50262

Note

- SKINDICHT® SM-PE-M counter nut should be used to ensure optimum contact with painted, anodised or powder-coated housings



Info

- **SKINTOP® MS-M BRUSH** sizes 75 x 1.5 to 110 x 2 with innovative double lamella gasket for easier assembling of cables with large diameters.
- Former product name: **SKINTOP® MSSC-M BRUSH**

Technical data



Caution

Refer to Main Catalogue Appendix T21 for the installation dimensions and torques



Approvals

VDE, UL, CSA, DNV approval for size M90 x 2 and 110 x 2 pending
SKINTOP® MSR-M BRUSH 25 x 1.5 approvals pending



Material

Body: nickel-plated brass
EMC brush: brass
Sealing ring: special elastomer
O-ring: special elastomer



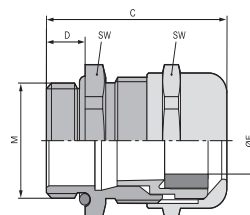
Protection rating

IP 68
IP 69 K (M25x1,5 - M63x1,5)



Temperature range

Dynamic: -30 °C to +100 °C
Fixed: -40 °C to +100 °C

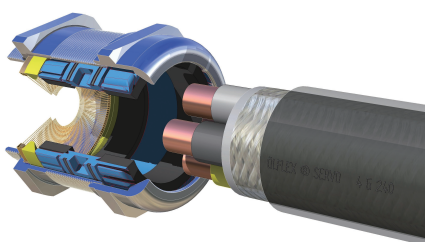


Article number	Article designation / size	Outer Ø (mm), from - to	Minimum Ø above braiding (mm)	SW (mm)	Thread length, D (mm)	Pieces / PU
SKINTOP® MSR-M BRUSH						
53112671	25 x 1,5	6,0-13,0	5,0	29	8,0	10
SKINTOP® MS-M BRUSH						
53112676	25 x 1,5	9,0-17,0	6,0	29	8,0	10
53112677	32 x 1,5	11,0-21,0	8,0	36	9,0	1
53112678	40 x 1,5	19,0-28,0	10,0	45	9,0	1
53112679	50 x 1,5	27,0-35,0	14,0	54	10,0	1
53112680	63 x 1,5	34,0-45,0	20,0	67	15,0	1
53112681	63 x 1,5 plus	44,0-55,0	25,0	75	15,0	1
53112501	75 x 1,5	53,0-63,0	35,0	95	15,0	1
53112500	75 x 1,5 plus	58,0-68,0	35,0	95	15,0	1
53112503	90 x 2	66,0-78,0	45,0	115	20,0	1
53112505	110 x 2	76,0-88,0	55,0	135	25,0	1
53112504	110 x 2xplus	86,0-98,0	55,0	135	25,0	1

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

Accessories

- SKINDICHT® SM-PE-M refer to Main Catalogue page 694



SKINDICHT® SM-M



SKINDICHT® SM-M

■ Application range

- Used when a gland has to be countered, or in through-holes on thin-walled housings

■ Approvals



■ Design

- Metric connection thread acc. to EN 50262

■ Technical data



Material
Nickel-plated brass

Article number	Article designation / size	Thickness (mm)	SW (mm)	Outer Ø (mm)	Pieces / PU
SKINDICHT® SM-M					
52103000	12 x 1,5	3.0	15	16.5	100
52103010	16 x 1,5	3.0	19	20.9	100
52103020	20 x 1,5	3.5	24	26.4	100
52103030	25 x 1,5	4.0	30	33.0	100
52103040	32 x 1,5	4.0	36	39.6	100
52103050	40 x 1,5	5.0	46	50.6	50
52103060	50 x 1,5	5.0	60	66.0	50
52103070	63 x 1,5	5.0	70	77.0	25
52103071	75 x 1,5	8.0	85	95.0	5
52103072	90 x 2	10.0	102	114.0	1
52103073	110 x 2	12.0	124	135.0	1

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

SKINDICHT® SM-PE-M



SKINDICHT® SM-PE-M

■ Benefits

- Cutting edges cut through the insulating layer, thus guaranteeing an optimum EMC contact
- Suitable for all metric glands used in earthing and EMC applications

■ Approvals



■ Design

- Metric connection thread acc. to EN 50262

■ Technical data



Material
Nickel-plated brass

Article number	Article designation / size	Thickness (mm)	SW (mm)	Outer Ø (mm)	Pieces / PU
SKINDICHT® SM-PE-M					
52103300	12 x 1,5	3.5	15	16.5	100
52103310	16 x 1,5	3.5	19	20.9	100
52103320	20 x 1,5	3.7	24	26.4	100
52103330	25 x 1,5	4.2	30	33.0	50
52103340	32 x 1,5	4.7	36	39.6	50
52103350	40 x 1,5	5.5	46	50.6	25
52103360	50 x 1,5	5.5	60	66.0	10
52103370	63 x 1,5	7.0	70	77.0	10
52103371	75 x 1,5	8.0	85	95.0	5
52103372	90 x 2	10.0	102	114.0	1
52103373	110 x 2	12.0	124	135.0	1

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

SKINDICHT® BL-M



SKINDICHT® BL-M

■ Benefits

- For closing pre-threaded holes
- Assembling with screwdriver

■ Application range

- Machine and equipment manufacturing
- Electric motor manufacturing

■ Approvals



■ Design

- Metric connection thread acc. to EN 50262

■ Technical data



Upon request
Fitted with FKM O-ring



Material
Dummy plug: nickel-plated brass
O-ring: NBR



Protection rating
IP 54
IP 68 with O-ring



Temperature range
With O-ring: -30°C to +100°C
Without O-ring: -60°C to +200°C

Article number	Article designation / size	Outer Ø (mm)	Pieces / PU
SKINDICHT® BL-M			
52103100	12 x 1,5	14.0	100
52103110	16 x 1,5	18.0	100
52103120	20 x 1,5	22.0	100
52103130	25 x 1,5	28.0	100
52103140	32 x 1,5	35.0	50
52103150	40 x 1,5	44.0	25
52103160	50 x 1,5	54.0	10
52103170	63 x 1,5	70.0	10
SKINDICHT® BL-M with O-ring			
52103105	12 x 1,5	14.0	100
52103115	16 x 1,5	18.0	100
52103125	20 x 1,5	22.0	100
52103135	25 x 1,5	28.0	100
52103145	32 x 1,5	35.0	50
52103155	40 x 1,5	44.0	25
52103165	50 x 1,5	54.0	10
52103175	63 x 1,5	70.0	10
52103190	75 x 1,5	80.0	1

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

SKINDICHT® KU-M



■ Benefits

- Enables the use of cable glands with smaller connection threads than the existing threaded holes

■ Application range

- Machines
- Devices
- Housings

■ Approvals



■ Design

- Metric connection thread acc. to EN 50262

■ Technical data



Colour delivered
Light grey (RAL 7035)



Material
Polyamide, glass fibre-reinforced



Temperature range
-40°C to +100°C

Article number	Thread, male M1	Thread, female M2	SW (mm)	Pieces / PU
SKINDICHT® KU-M light grey				
52104505	16 x 1.5	12 x 1.5	22	100
52104470	20 x 1.5	12 x 1.5	24	100
52104504	20 x 1.5	16 x 1.5	24	100
52104472	25 x 1.5	12 x 1.5	29	100
52104473	25 x 1.5	16 x 1.5	29	100
52104474	25 x 1.5	20 x 1.5	29	100
52104475	32 x 1.5	12 x 1.5	36	50
52104476	32 x 1.5	16 x 1.5	36	50
52104477	32 x 1.5	20 x 1.5	36	50
52104478	32 x 1.5	25 x 1.5	36	50
52104479	40 x 1.5	16 x 1.5	46	50
52104480	40 x 1.5	20 x 1.5	46	50
52104481	40 x 1.5	25 x 1.5	46	25
52104482	40 x 1.5	32 x 1.5	46	25
52104483	50 x 1.5	20 x 1.5	55	5
52104484	50 x 1.5	25 x 1.5	55	5
52104485	50 x 1.5	32 x 1.5	55	5
52104486	50 x 1.5	40 x 1.5	55	5
52104487	63 x 1.5	25 x 1.5	68	5
52104488	63 x 1.5	32 x 1.5	68	5
52104489	63 x 1.5	40 x 1.5	68	5
52104469	63 x 1.5	50 x 1.5	68	5

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

SKINDICHT® MR-M



■ Benefits

- Enables the use of cable glands with smaller connection threads than the existing threaded holes

■ Application range

- Machines
- Devices
- Housings

■ Approvals



■ Technical data



Upon request
Also available with pre-installed O-ring



Material
Nickel-plated brass



Temperature range
-60°C to +200°C

■ Design

- Metric connection thread acc. to EN 50262

Article number	Thread, male M1	Thread, female M2	Pieces / PU
SKINDICHT® MR-M			
52104310	16 x 1.5	12 x 1.5	100
52104311	20 x 1.5	12 x 1.5	100
52104312	20 x 1.5	16 x 1.5	100
52104313	25 x 1.5	16 x 1.5	50
52104314	25 x 1.5	20 x 1.5	50
52104315	32 x 1.5	20 x 1.5	50
52104316	32 x 1.5	25 x 1.5	50
52104317	40 x 1.5	25 x 1.5	25
52104318	40 x 1.5	32 x 1.5	25
52104319	50 x 1.5	32 x 1.5	25
52104320	50 x 1.5	40 x 1.5	10
52104321	63 x 1.5	40 x 1.5	10
52104322	63 x 1.5	50 x 1.5	10
SKINDICHT® MR-M, blank brass, without hexagon			
52006579	80 x 2	75 x 1.5	1
SKINDICHT® MR-M, nickel-plated brass, without hexagon			
52006575	72 x 2	63 x 1.5	1

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

For current information see: www.lappkorea.com

SKINDICHT® EKU-M

■ Benefits

- Enables the use of cable glands with larger connection threads than the existing threaded holes
- Assembling with a wrench
- Supporting surface for spanner means scratches on the housing are avoided

■ Application range

- Machines
- Devices
- Housings

■ Approvals

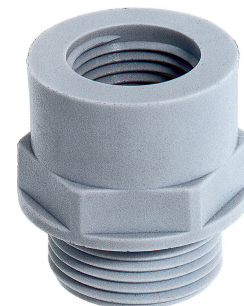


■ Design

- Metric connection thread acc. to EN 50262

■ Technical data

	Colour delivered Light grey (RAL 7035)
	Material Polyamide, glass fibre-reinforced
	Temperature range -40°C to +100°C



Article number	Thread, male M1	Thread, female M2	SW (mm)	Pieces / PU
SKINDICHT® EKU-M				
52100300	12 x 1.5	16 x 1.5	20	100
52100301	16 x 1.5	20 x 1.5	24	100
52100302	20 x 1.5	25 x 1.5	29	100
52100303	25 x 1.5	32 x 1.5	36	50
52100304	32 x 1.5	40 x 1.5	46	25
52100305	40 x 1.5	50 x 1.5	55	10
52100306	50 x 1.5	63 x 1.5	68	10

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

SKINDICHT® ME-M

■ Benefits

- Enables the use of cable glands with larger connection threads than the existing threaded holes

■ Application range

- Machines
- Devices
- Housings

■ Approvals



■ Design

- Metric connection thread acc. to EN 50262

■ Technical data

	Upon request with O-ring fitted
	Material Nickel-plated brass
	Temperature range -60°C to +200°C



Article number	Article designation / size	Thickness (mm)	Pieces / PU
SKINDICHT® ME-M			
52104450	12 x 1.5	16 x 1.5	100
52104452	16 x 1.5	20 x 1.5	100
52104454	20 x 1.5	25 x 1.5	100
52104456	25 x 1.5	32 x 1.5	50
52104458	32 x 1.5	40 x 1.5	50
52104460	40 x 1.5	50 x 1.5	25
52104462	50 x 1.5	63 x 1.5	25
SKINDICHT® ME-M hexagon			
52104463	63 x 1.5	75 x 1.5	25

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

SKINDICHT® ZS-M



■ Benefits

- Enables the use of PG accessories in metric threads
- Assembling with a wrench

■ Application range

- Hexagonal converter from a metric outer thread to a PG inner thread.
- Machines
- Devices
- Housings

■ Approvals



■ Design

- Metric connection thread acc. to EN 50262

■ Note

- SKINDICHT® ZS-M-XL offers a long metric connection thread

■ Technical data



Material

Nickel-plated brass

Article number	Thread, male M 1	Thread, female PG	SW (mm)	Outer thread length (mm)	Pieces / PU
SKINDICHT® ZS-M					
52104330	12 x 1.5	7	14	5	100
52104340	16 x 1.5	9	18	5	100
52104010	16 x 1.5	11	20	5	100
52104360	20 x 1.5	11	22	6	100
52104370	20 x 1.5	13.5	22	6	100
52104380	20 x 1.5	16	24	6	50
52104400	25 x 1.5	21	30	7	50
52104410	32 x 1.5	29	40	8	25
52104420	40 x 1.5	36	50	8	10
52104430	50 x 1.5	42	57	9	10
52104440	63 x 1.5	48	66	10	10
SKINDICHT® ZS-M-XL					
52104335	12 x 1.5	7	14	10	100
52104345	16 x 1.5	9	18	10	100
52104365	20 x 1.5	11	22	10	100
52104375	20 x 1.5	13.5	22	10	100
52104385	20 x 1.5	16	24	10	50
52104405	25 x 1.5	21	30	11	50
52104415	32 x 1.5	29	40	13	25
52104425	40 x 1.5	36	50	13	10
52104435	50 x 1.5	42	57	14	10
52104445	63 x 1.5	48	66	14	10

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

SKINDICHT® ZSE-M

Benefits

- Enables the use of PG accessories in metric threads
- Assembling with a wrench

Application range

- Hexagonal converter from a metric outer thread to a PG inner thread.
- Machines
- Devices
- Housings

Approvals



Design

- Metric connection thread acc. to EN 50262

Note

- SKINDICHT® ZSE-M-XL offers a long metric connection thread

Design

- These converters are used in our cable glands:
- SKINDICHT® SHV-M
- SKINDICHT® SHVE-M
- SKINDICHT® SRE-M
- SKINDICHT® SR-SV-M

Technical data



Material
Body: nickel-plated brass



Article number	Thread, male M1	Thread, female PG	SW (mm)	Outer thread length (mm)	Pieces / PU
SKINDICHT® ZSE-M					
52106000	12 x 1.5	7	14	5	100
52106010	16 x 1.5	9	18	5	100
52106020	20 x 1.5	11	22	6	100
52106030	20 x 1.5	13.5	22	6	100
52106040	20 x 1.5	16	24	6	50
52104050	20 x 1.5	21	30	8	50
52106050	25 x 1.5	21	30	7	50
52106060	32 x 1.5	29	40	8	25
52106070	40 x 1.5	36	50	8	10
52106080	50 x 1.5	42	57	9	10
52106090	63 x 1.5	48	66	10	10
SKINDICHT® ZSE-M-XL					
52106005	12 x 1.5	7	14	10	100
52106015	16 x 1.5	9	18	10	100
52106025	20 x 1.5	11	22	13	100
52106035	20 x 1.5	13.5	22	13	100
52106045	20 x 1.5	16	24	13	50
52106055	25 x 1.5	21	30	13	50
52106065	32 x 1.5	29	40	13	25

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

Parallel corrugated protective cable conduit systems

SILVYN® RILL

- SILVYN® RILL PA 6
- SILVYN® RILL PA 12
- SILVYN® KCLICK-GM
- SILVYN® KCLICK 90°M
- SILVYN® KCLICK GPZ-M
- SILVYN® KSE
- SILVYN® KCLICK-GP
- SILVYN® KCLICK-GPZ
- SILVYN® KCLICK 90° PG
- SILVYN® KCLICK-Y / SILVYN® KCLICK-Y (TPE)
- SILVYN® KCLICK-S / SILVYN® KCLICK-D / SILVYN® KCLICK-V
- SILVYN® KCLICK-RH
- SILVYN® K-EM

SILVYN® FPAS

- SILVYN® FPAS

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SILVYN®

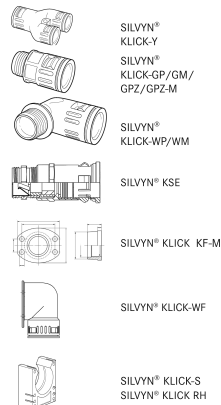
Protective cable conduit and cable carrier systems



SILVYN® RILL PA 6



SILVYN® RILL PA 6



SILVYN®
KLICK-Y
SILVYN®
KLICK-GP/GM/
GPZ/GPZ-M
SILVYN®
KLICK-WP/WM
SILVYN® KSE
SILVYN® KLICK KF-M
SILVYN® KLICK-WF
SILVYN® KLICK-S
SILVYN® KLICK RH



Info

- Maximum safety in the event of a fire

Benefits

- Dimensionally stable
- Flexible
- High flame-retardance and self-extinguishing in accordance with UL 94V-0
- Crush-resistant
- Lightweight

Application range

- Mechanical engineering
- Public utilities
- Railway applications / vehicle construction
- Moving applications
- Outdoor application (in black)

Product features

- Halogen and cadmium-free
- Abrasion-resistant
- High resistance to oil, petrol, acids and other chemicals

Approvals



- UL FILENUMBER E308201

Design

- Fine-profile corrugated polyamide 6 conduit

Note

- UV and weather-resistant in black

Technical data



Approvals

VDE EN/IEC 618386-23
DNV, Lloyd's Register
Rail: DB DIN 5510 Teil2 (S4/SR2/ST2)
SNCF NFF16-101/102 (I2)



Colour delivered

Grey (RAL 7001)
Black (RAL 9005), UV-resistant



Material

PA 6
Silicone-free
Halogen-free
UL 94V-0



Temperature range

-40°C to +115°C
short-term +150°C

Article number	Article designation	Article IØ x OØ (mm)	Bending radius (mm)	Suitable for SILVYN® KLICK-GM/WM	Suitable for SILVYN® KLICK-GP/WP	Suitable for SILVYN® KLICK-GPZ-M/GPZ	PU ring (m)
SILVYN® RILL PA 6 grey							
61746939	7	6.5 x 10.0	13	10 x 1,0	7/-	12 x 1,5/7	50
61746940	9	10.0 x 13.0	20	12 x 1,5/16 x 1,5	9/9	16x1,5/9	50
61746950	11	12.0 x 15.8	35	16 x 1,5/20 x 1,5	11/11	20x1,5/11	50
61747010	13,5	14.3 x 18.5	40	13,5/13,5	-/13,5	50	
61746960	16	16.5 x 21.2	45	20 x 1,5	16/16	25x1,5/16	50
61746970	21	23.0 x 28.5	55	25 x 1,5	21/21	32x1,5/21	50
61746980	29	29.0 x 34.5	65	32 x 1,5	29/29	40x1,5/29	25
61746990	36	36.0 x 42.5	90	40 x 1,5	36/-	50x1,5/36	25
61747000	48	48.0 x 54.5	100	50 x 1,5	48/-	63x1,5/48	25
SILVYN® RILL PA 6 black							
61746935	7	6.5 x 10.0	13	10 x 1,0	7/-	12 x 1,5/7	50
61746945	9	10.0 x 13.0	20	12 x 1,5/16 x 1,5	9/9	16x1,5/9	50
61746955	11	12.0 x 15.8	35	16 x 1,5/20 x 1,5	11/11	20x1,5/11	50
61747015	13,5	14.3 x 18.5	40	13,5/13,5	-/13,5	50	
61746965	16	16.5 x 21.2	45	20 x 1,5	16/16	25x1,5/16	50
61746975	21	23.0 x 28.5	55	25 x 1,5	21/21	32x1,5/21	50
61746985	29	29.0 x 34.5	65	32 x 1,5	29/29	40x1,5/29	25
61746995	36	36.0 x 42.5	90	40 x 1,5	36/-	50x1,5/36	25
61747005	48	48.0 x 54.5	100	50 x 1,5	48/-	63x1,5/48	25

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

Similar products

- SILVYN® RILL PA 12 refer to Main Catalogue page 783

Accessories

- SILVYN® KLICK-GM refer to Main Catalogue page 784
- SILVYN® KLICK 90°M refer to Main Catalogue page 785
- SILVYN® KLICK GPZ-M refer to Main Catalogue page 786
- SILVYN® KLICK- 90° Flange
- SILVYN® KSE refer to Main Catalogue page 787
- SILVYN® KLICK-GP refer to Main Catalogue page 788
- SILVYN® KLICK 90° PG refer to Main Catalogue page 790
- SILVYN® KLICK-GPZ refer to Main Catalogue page 789
- SILVYN® KLICK-Y refer to Main Catalogue page 791
- SILVYN® KLICK-Y (TPE) refer to Main Catalogue page 791
- SILVYN® KLICK-S refer to Main Catalogue page 792
- SILVYN® KLICK-D refer to Main Catalogue page 792
- SILVYN® KLICK-V refer to Main Catalogue page 792
- SILVYN® KLICK-RH refer to Main Catalogue page 793
- SILVYN® K-EM refer to Main Catalogue page 793



Info

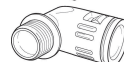
- Designed for robot applications



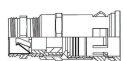
SILVYN®
KLICK-Y



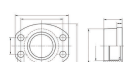
SILVYN®
KLICK-GP/GM/
GPZ/GPZ-M



SILVYN®
KLICK-WP/WM



SILVYN® KSE



SILVYN® KLICK KF-M



SILVYN® KLICK-S
SILVYN® KLICK-RH



SILVYN® RILL PA 12

Benefits

- Dimensionally stable
- Highly flexible at cold temperatures
- Flame-retardant and self-extinguishing according to UL 94V-2
- Crush-resistant
- Highly flexible

Application range

- Mechanical engineering
- In drag chains (SILVYN® CHAIN)
- Building Automation
- Robot-building
- Outdoor application (in black)

Product features

- Halogen and cadmium-free
- Abrasion-resistant
- High resistance to oil, petrol, acids and other chemicals

Approvals



- Railway: DB, SNCF

Design

- Fine-profile corrugated polyamide 12 conduit

Note

- UV and weather-resistant in black

Technical data



Approvals

VDE EN/IEC 61386-23
Lloyd's Register
Rail:
DB DIN 5510 Teil2 (S4/SR2/ST2)
SNCF NFF-16-101/102 (I3/F2)



Colour delivered

Grey (RAL 7001)
Black (RAL 9005), UV-resistant



Material

PA 12
Silicone-free
Halogen-free
UL 94V-2



Temperature range

-50°C bis +100°C
short-term +150°C

Article number	Article designation	Article IØ x OØ (mm)	Bending radius (mm)	Suitable for SILVYN® KLICK-GM/WM	Suitable for SILVYN® KLICK-GP/WM	Suitable for SILVYN® KLICK-GPZ-M/GPZ	PU ring (m)
SILVYN® RILL PA 12 grey							
61815100	7	6.5 x 10.0	13	10 x 1,5	7/-	12 x 1,5/7	50
61815110	9	10.0 x 13.0	15	12 x 1,5/16 x 1,5	9/9	16x1,5/9	50
61815120	11	12.0 x 15.8	22	16 x 1,5/20 x 1,5	11/11	20x1,5/11	50
61815180	13,5	14.3 x 18.5	27	13,5/13,5	-/13,5	50	
61815130	16	16.5 x 21.2	35	20 x 1,5	16/16	25x1,5/16	50
61815140	21	23.0 x 28.5	45	25 x 1,5	21/21	32x1,5/21	50
61815150	29	29.0 x 34.5	50	32 x 1,5	29/29	40x1,5/29	25
61815160	36	36.0 x 42.5	80	40 x 1,5	36/-	50x1,5/36	25
61815170	48	48.0 x 54.5	100	50 x 1,5	48/-	63x1,5/48	25
SILVYN® RILL PA 12 black							
61815105	7	6.5 x 10.0	13	10 x 1,5	7/-	12 x 1,5/7	50
61815115	9	10.0 x 13.0	15	12 x 1,5/16 x 1,5	9/9	16x1,5/9	50
61815125	11	12.0 x 15.8	22	16 x 1,5/20 x 1,5	11/11	20x1,5/11	50
61815185	13,5	14.3 x 18.5	27	13,5/13,5	-/13,5	50	
61815135	16	16.5 x 21.2	35	20 x 1,5	16/16	25x1,5/16	50
61815145	21	23.0 x 28.5	45	25 x 1,5	21/21	32x1,5/21	50
61815155	29	29.0 x 34.5	50	32 x 1,5	29/29	40x1,5/29	25
61815165	36	36.0 x 42.5	80	40 x 1,5	36/-	50x1,5/36	25
61815175	48	48.0 x 54.5	100	50 x 1,5	48/-	63x1,5/48	25

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

Similar products

- SILVYN® RILL PA 6 refer to Main Catalogue page 782

Accessories

- SILVYN® KLICK-GM refer to Main Catalogue page 784
- SILVYN® KLICK 90°M refer to Main Catalogue page 785
- SILVYN® KLICK GPZ-M refer to Main Catalogue page 786
- SILVYN® KLICK- 90° Flange
- SILVYN® KSE refer to Main Catalogue page 787
- SILVYN® KLICK-GP refer to Main Catalogue page 788
- SILVYN® KLICK 90° PG refer to Main Catalogue page 790
- SILVYN® KLICK-GPZ refer to Main Catalogue page 789
- SILVYN® KLICK-Y refer to Main Catalogue page 791
- SILVYN® KLICK-Y (TPE) refer to Main Catalogue page 791
- SILVYN® KLICK-S refer to Main Catalogue page 792
- SILVYN® KLICK-D refer to Main Catalogue page 792
- SILVYN® KLICK-V refer to Main Catalogue page 792
- SILVYN® KLICK-RH refer to Main Catalogue page 793
- SILVYN® K-EM refer to Main Catalogue page 793

SILVYN® KCLICK-GM



■ Benefits

- Fast assembly
- Easy to disassemble
- High-tensile
- High sealing performance
- Can be rotated

■ Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Robot-building
- Rotating applications

■ Approvals



- UL FILENUMBER E308201

■ Design

- Metric connection thread
- Body with inner sealing
- Upper part with snap-in sleeve

■ Note

- For rotating applications, disassemble the upper part to remove sealing, then re-assemble.

■ Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

■ Technical data



Colour delivered
Grey (RAL 7001)
Black (RAL 9005), UV-resistant



Material
PA6



Protection rating
IP 68
IP 69K according to DIN 40050 T.9



Temperature range
-40 °C to +115 °C

Article number	Connection thread M	Hole Ø (mm)	For conduit with outer Ø (mm)	Thread length, D (mm)	SW (mm)	Suitable for SILVYN® RILL	Pieces / PU
SILVYN® KCLICK-GM grey							
55501000	10 x 1.0	6.5	10.0	12.0	17.0	6,5 x 10,0	50
55501010	12 x 1.5	8.0	13.0	12.0	20.0	10 x 13,0	50
55501020	16 x 1.5/1	10.0	13.0	12.0	20.0	10 x 13,0	50
55501030	16 x 1.5/2	12.0	15.8	12.0	23.0	12 x 15,8	50
55501040	20 x 1.5/1	12.0	15.8	13.0	23.0	12 x 15,8	50
55501050	20 x 1.5/2	16.0	21.2	13.0	29.5	16,5 x 21,2	50
55501060	25 x 1.5	20.5	28.5	13.0	37.0	23 x 28,5	25
55501070	32 x 1.5	27.5	34.5	15.0	44.0	29 x 34,5	25
55501080	40 x 1.5	35.0	42.5	15.0	51.5	36 x 42,5	25
55501090	50 x 1.5	45.0	54.5	15.3	65.5	48 x 54,5	10
55500990	63 x 1.5	48.0	54.5	16.0	59.0	48 x 54,5	10
SILVYN® KCLICK-GM black							
55501005	10 x 1.0	6.5	10.0	12.0	17.0	6,5 x 10,0	50
55501015	12 x 1.5	8.0	13.0	12.0	20.0	10 x 13,0	50
55501025	16 x 1.5/1	10.0	13.0	12.0	20.0	10 x 13,0	50
55501035	16 x 1.5/2	12.0	15.8	12.0	23.0	12 x 15,8	50
55501045	20 x 1.5/1	12.0	15.8	13.0	23.0	12 x 15,8	50
55501055	20 x 1.5/2	16.0	21.2	13.0	29.5	16,5 x 21,2	50
55501065	25 x 1.5	20.5	28.5	13.0	37.0	23 x 28,5	25
55501075	32 x 1.5	27.5	34.5	15.0	44.0	29 x 34,5	25
55501085	40 x 1.5	35.0	42.5	15.0	51.5	36 x 42,5	25
55501095	50 x 1.5	45.0	54.5	15.3	65.5	48 x 54,5	10
55500995	63 x 1.5	48.0	54.5	16.0	59.0	48 x 54,5	10

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

■ Similar products

- SILVYN® KCLICK GPZ-M refer to Main Catalogue page 786

SILVYN® KLIKK 90°M

Benefits

- 90° elbow enables best assembling
- Fast assembly
- Easy to disassemble
- High-tensile
- High sealing performance

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- For applications with limited space
- Rotating applications

Approvals



- UL FILENUMBER E308201

Design

- Metric connection thread
- 90° elbow
- Body with inner sealing
- Upper part with snap-in sleeve

Note

- For rotating applications, disassemble the upper part to remove sealing, then re-assemble.

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data

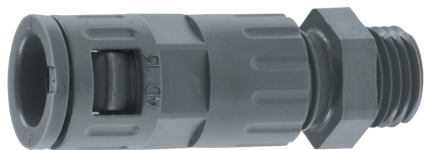
RAL	Colour delivered Grey (RAL 7001) Black (RAL 9005), UV-resistant
Material	PA6
IP	Protection rating IP 68 IP 69K according to DIN 40050 T.9
Temperature range	-40 °C to +115 °C



Article number	Connection thread M	Hole Ø (mm)	For conduit with outer Ø (mm)	Thread length, D (mm)	Suitable for SILVYN® RILL	Pieces / PU
SILVYN® KLIKK-WM grey						
55501110	10 x 1.0	7.0	10.0	12.0	6,5 x 10,0	50
55501120	12 x 1.5	8.0	13.0	12.0	10,0 x 13,0	50
55501130	16 x 1.5/1	12.0	13.0	12.0	10,0 x 13,0	50
55501140	16 x 1.5/2	12.0	15.8	12.0	12 x 15,8	50
55501150	20 x 1.5/1	15.5	15.8	13.0	12 x 15,8	50
55501160	20 x 1.5/2	15.5	21.2	13.0	16,5 x 21,2	50
55501170	25 x 1.5/1	18.0	21.2	13.0	16,5 x 21,2	50
55501180	25 x 1.5/2	18.0	28.5	13.0	23 x 28,5	25
55501190	32 x 1.5/1	24.0	28.5	15.0	23 x 28,5	25
55501200	32 x 1.5/2	24.0	34.5	15.0	29 x 34,5	10
55501210	40 x 1.5/1	32.0	34.5	15.0	29 x 34,5	10
55501220	40 x 1.5/2	32.0	42.5	15.0	36 x 42,5	10
55501230	50 x 1.5/1	39.0	42.5	16.0	36 x 42,5	10
55501240	50 x 1.5/2	39.0	54.5	16.0	48 x 54,5	5
55501250	63 x 1.5	53.0	54.5	16.0	48 x 54,5	5
SILVYN® KLIKK-WM black						
55501115	10 x 1.0	7.0	10.0	12.0	6,5 x 10,0	50
55501125	12 x 1.5	8.0	13.0	12.0	10,0 x 13,0	50
55501135	16 x 1.5/1	12.0	13.0	12.0	10,0 x 13,0	50
55501145	16 x 1.5/2	12.0	15.8	12.0	12 x 15,8	50
55501155	20 x 1.5/1	15.5	15.8	13.0	12 x 15,8	50
55501165	20 x 1.5/2	15.5	21.2	13.0	16,5 x 21,2	50
55501175	25 x 1.5/1	18.0	21.2	13.0	16,5 x 21,2	50
55501185	25 x 1.5/2	18.0	28.5	13.0	23 x 28,5	25
55501195	32 x 1.5/1	24.0	28.5	15.0	23 x 28,5	25
55501205	32 x 1.5/2	24.0	34.5	15.0	29 x 34,5	10
55501215	40 x 1.5/1	32.0	34.5	15.0	29 x 34,5	10
55501225	40 x 1.5/2	32.0	42.5	15.0	36 x 42,5	10
55501235	50 x 1.5/1	39.0	42.5	16.0	36 x 42,5	10
55501245	50 x 1.5/2	39.0	54.5	16.0	48 x 54,5	5
55501255	63 x 1.5	53.0	54.5	16.0	48 x 54,5	5

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

SILVYN® KLIKK GPZ-M



■ Benefits

- Fast assembly
- Easy to disassemble
- Additional cable strain relief
- Additional cable sealing

■ Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Robot-building
- Used in areas where cables and wires need to be provided with strain relief and additional sealing

■ Approvals



- UL FILENUMBER E308201

■ Design

- Metric connection thread
- Cable gland
- Body with inner sealing
- Upper part with snap-in sleeve

■ Note

- For rotating applications, disassemble the upper part to remove sealing, then re-assemble.

■ Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

■ Technical data



Colour delivered
Grey (RAL 7001)
Black (RAL 9005), UV-resistant



Material
PA6



Protection rating
IP 68
IP 69K according to DIN 40050 T.9

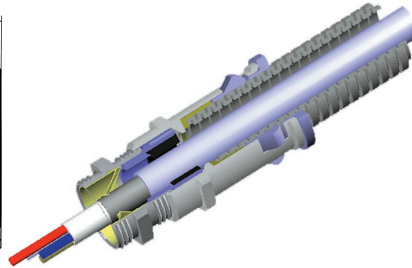
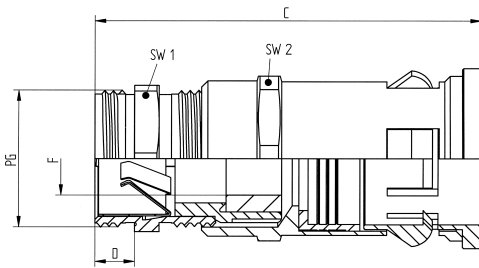


Temperature range
-30°C to +100°C

Article number	Article designation	Hole Ø (mm)	Clamping range (mm)	Thread length, D (mm)	For conduit with outer Ø (mm)	SW (mm)	Suitable for SILVYN® RILL	Pieces / PU
SILVYN® KLIKK, GPZ-M grey								
55500800	12 x 1,5	7.0	4.0 - 6.5	8.0	10.0	16.0	7	20
55500810	16 x 1,5	8.0	5.0 - 9.5	8.0	13.0	18.0	9	20
55500820	20 x 1,5	10.0	8.0 - 12.0	8.0	15.8	21.0	11	20
55500830	25 x 1,5	12.0	11.0 - 16.0	8.0	21.2	27.0	16	10
55500840	32 x 1,5	18.0	15.0 - 21.0	11.0	28.5	34.0	21	10
55500850	40 x 1,5	25.0	16.0 - 26.0	12.0	34.5	40.0	29	10
55500860	50 x 1,5	32.0	27.0 - 35.0	13.0	42.5	49.0	36	10
55500870	63 x 1,5	44.0	32.0 - 42.0	14.0	54.5	60.0	48	10
SILVYN® KLIKK, GPZ-M black								
55500805	12 x 1,5	7.0	4.0 - 6.5	8.0	10.0	16.0	7	20
55500815	16 x 1,5	8.0	5.0 - 9.5	8.0	13.0	18.0	9	20
55500825	20 x 1,5	10.0	8.0 - 12.0	8.0	15.8	21.0	11	20
55500835	25 x 1,5	12.0	11.0 - 16.0	8.0	21.2	27.0	16	10
55500845	32 x 1,5	18.0	15.0 - 21.0	11.0	28.5	34.0	21	10
55500855	40 x 1,5	25.0	16.0 - 26.0	12.0	34.5	40.0	29	10
55500865	50 x 1,5	32.0	27.0 - 35.0	13.0	42.5	49.0	36	10
55500875	63 x 1,5	44.0	32.0 - 42.0	14.0	54.5	60.0	48	10

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

SILVYN® KSE



SILVYN® KSE

■ Benefits

- Fast assembly
- Additional cable strain relief
- Additional cable sealing
- Optimum screen connection (EMC)

■ Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Used in areas where screened cables and wires need to have additional protection

■ Approvals



■ Design

- Metric connection thread
- EMC cable gland
- Body with inner sealing
- Upper part with snap-in sleeve

■ Note

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

■ Technical data

RAL	Colour delivered Black (RAL 9005), UV-resistant
Material	Polyamide Nickel-plated brass
IP	Protection rating IP 68
Temperature range	-40 °C to +115 °C

Article number	PG size	For conduit with outer Ø (mm)	Clamping range (mm)	Overall length, C (mm)	Thread length, D (mm)	SW 1/2 mm	Suitable for SILVYN® RILL	Pieces / PU
SILVYN® KSE								
55001200	9	13.0	4.0 - 8.0	57.0	12.0	17 / 22	9	20
55001210	11	15.8	6.5 - 10.0	62.0	12.0	20 / 25	11	20
55001230	16	21.2	10.0 - 14.0	70.0	12.0	24 / 31	16	10
55001240	21	28.5	14.0 - 17.5	75.0	12.0	30 / 39	21	10

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

■ Similar products

- SILVYN® MSK-M EE refer to Main Catalogue page 776
- SILVYN® MSK-M US refer to Main Catalogue page 816
- SILVYN® KSE-M refer to Main Catalogue page 805

■ Accessories

- SKINDICHT® SM-PE refer to Main Catalogue page 741

SILVYN® KCLICK-GP



■ Benefits

- Fast assembly
- Easy to disassemble
- High-tensile
- High sealing performance
- Can be rotated

■ Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Robot-building
- Rotating applications

■ Approvals



- UL FILENUMBER E308201

■ Design

- PG connection thread
- Body with inner sealing
- Upper part with snap-in sleeve

■ Note

- For rotating applications, disassemble the upper part to remove sealing, then re-assemble.

■ Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

■ Technical data



Colour delivered
Grey (RAL 7001)
Black (RAL 9005), UV-resistant



Material
PA6



Protection rating
IP 68
IP 69K according to DIN 40050 T.9



Temperature range
-40 °C to +115 °C

Article number	Article designation	Suitable for SILVYN® RILL	For conduit with outer Ø (mm)	Wrench size (mm)	Thread length (mm)	Hole (mm)	Pieces / PU
SILVYN® KCLICK-GP grey							
61800860	7	7	10	15.5	10	7	50
61800870	9	9	13	18.0	10	10	50
61800880	11	11	15.8	21.0	10	12.5	50
61800850	13,5	13,5	18.2	24.0	11	13.5	50
61800890	16	16	21.2	27.0	12	17	50
61800900	21	21	28.5	34.0	12	23.5	25
61800910	29	29	34.5	40.0	12	30.5	25
61800920	36	36	42.5	49.0	12	36.5	25
61800930	48	48	54.5	60.0	15	48.5	10
SILVYN® KCLICK-GP black							
61800865	7	7	10	15.5	10	7	50
61800875	9	9	13	18.0	10	10	50
61800885	11	11	15.8	21.0	10	12.5	50
61800855	13,5	13,5	18.2	24.0	11	13.5	50
61800895	16	16	21.2	27.0	12	17	50
61800905	21	21	28.5	34.0	12	23.5	25
61800915	29	29	34.5	40.0	12	30.5	25
61800925	36	36	42.5	49.0	12	36.5	25
61800935	48	48	54.5	60.0	15	48.5	10

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

SILVYN® KCLICK-GPZ

Benefits

- Fast assembly
- Easy to disassemble
- Additional cable strain relief
- Additional cable sealing

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Robot-building
- Used in areas where cables and wires need to be provided with strain relief and additional sealing

Approvals



- UL FILENUMBER E308201

Design

- PG connection thread
- Cable gland
- Body with inner sealing
- Upper part with snap-in sleeve

Note

- For rotating applications, disassemble the upper part to remove sealing, then re-assemble.

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data

RAL	Colour delivered Grey (RAL 7001) Black (RAL 9005), UV-resistant
Material	PA6
IP	Protection rating IP 68 IP 69K according to DIN 40050 T.9
Temperature range	-40 °C to +115 °C



Article number	Article designation	Suitable for SILVYN® RILL	For conduit with outer Ø (mm)	Wrench size (mm)	Clamping range (mm)	Thread length (mm)	min. IØ (mm)	Pieces / PU
SILVYN® KCLICK-GPZ grey								
61801120	7	7	10	16.0	3 - 6.5	8	7.0	20
61801130	9	9	13	18.0	4 - 8	8	8.0	20
61801140	11	11	15.8	21.0	5 - 10	8	10.0	20
61801200	13,5 / 1	11	15.8	27.0	6 - 12	8	12.0	20
61801202	13,5 / 2	13,5	18.5	27.0	6 - 12	8	12.0	20
61801150	16	16	21.2	27.0	10 - 14	10	14.0	10
61801160	21	21	28.5	34.0	13 - 18	11	18.0	10
61801170	29	29	34.5	40.0	18 - 25	12	25.0	10
61801180	36	36	42.5	49.0	22 - 32	13	32.0	10
61801190	48	48	54.5	60.0	34 - 44	14	44.0	10
SILVYN® KCLICK-GPZ black								
61801125	7	7	10	16.0	3 - 6.5	8	7.0	20
61801135	9	9	13	18.0	4 - 8	8	8.0	20
61801145	11	11	15.8	21.0	5 - 10	8	10.0	20
61801205	13,5 / 2	13,5	18.5	27.0	6 - 12	8	12.0	20
61801155	16	16	21.2	27.0	10 - 14	10	14.0	10
61801165	21	21	28.5	34.0	13 - 18	11	18.0	10
61801175	29	29	34.5	40.0	18 - 25	12	25.0	10
61801185	36	36	42.5	49.0	22 - 32	13	32.0	10
61801195	48	48	54.5	60.0	34 - 44	14	44.0	10

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

SILVYN® KLIKK 90° PG



■ Benefits

- 90° elbow enables best assembling
- Fast assembly
- Easy to disassemble
- High-tensile
- High sealing performance

■ Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- For applications with limited space
- Rotating applications

■ Approvals



- UL FILENUMBER E308201

■ Design

- PG connection thread
- 90° elbow
- Body with inner sealing
- Upper part with snap-in sleeve

■ Note

- For rotating applications, disassemble the upper part to remove sealing, then re-assemble.

■ Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

■ Technical data



Colour delivered
Grey (RAL 7001)
Black (RAL 9005), UV-resistant



Material
PA6



Protection rating
IP 68
IP 69K according to DIN 40050 T.9



Temperature range
-40 °C to +115 °C

Article number	Article designation	For conduit with outer Ø (mm)	Thread length (mm)	Clear opening (mm)	Pieces / PU
SILVYN® KLIKK-WP grey					
61801020	9	13	10	12.0	50
61801030	11	15.8	10	15.5	50
56000100	13,5	18.5	11	13.5	50
61801040	16	21.2	12	18.0	50
61801050	21	28.5	12	24.0	25
61801060	29	34.5	12	32.0	10
61801061	36	42.5	14	36.5	10
61801062	48	54.5	14	48.5	5
SILVYN® KLIKK-WP black					
61801025	9	13	10	12.0	50
61801035	11	15.8	10	15.5	50
56000105	13,5	18.5	11	13.5	50
61801045	16	21.2	12	18.0	50
61801055	21	28.5	12	24.0	25
61801065	48	54.5	14	48.5	5

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

SILVYN® KLICK-Y / SILVYN® KLICK-Y (TPE)


SILVYN® KLICK-Y

SILVYN® KLICK-Y (TPE)

Benefits

SILVYN® KLICK-Y

- Fast mounting
- Easy to disassemble
- High-tensile
- Easy combination of different conduit sizes

SILVYN® KLICK-Y (TPE)

- Easy to assemble
- High temperature resistance

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Y-distributor for SILVYN® RILL conduits

Approvals



SILVYN® KLICK-Y

- UL FILENUMBER E308201

Design

SILVYN® KLICK-Y

- 3 x conduit connection
- 2 x bore hole for fixation with M5 screws

SILVYN® KLICK-Y (TPE)

- 3 x conduit connection
- 1 x bore hole for fixation with M4 screws

Note

SILVYN® KLICK-Y (TPE)

- For black (RAL 9005), replace the last digit of the part no. with "5".

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data



Upon request
SILVYN® KLICK-Y
More sizes / combinations



Colour delivered
Grey (RAL 7001)
Black (RAL 9005), UV-resistant



Material
SILVYN® KLICK-Y
PA6
SILVYN® KLICK-Y (TPE)
TPE



Protection rating
SILVYN® KLICK-Y
IP 68
IP 69K according to DIN 40050 T.9
SILVYN® KLICK-Y (TPE)
IP 66

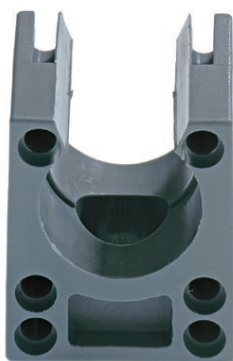


Temperature range
-40 °C to +115 °C

Article number	Article designation	Suitable for SILVYN® RILL	For conduit with outer Ø (mm)	Pieces / PU
SILVYN® KLICK-Y grey				
61801090	2 x 7/1 x 9	7/9	10 / 13	10
61801100	3 x 9	9	13	10
61801110	2 x 9/1 x 11	9/11	13 / 15.8	10
56000130	3 x 11	11	15.8	10
SILVYN® KLICK-Y black				
61801095	2 x 7/1 x 9	7/9	10 / 13	10
61801105	3 x 9	9	13	10
61801115	2 x 9/1 x 11	9/11	13 / 15.8	10
56000135	3 x 11	11	15.8	10
SILVYN® KLICK-Y (TPE) grey				
56000120	3 x 7	7	10	10
56000140	2 x 11/1 x 16	11/16	13 / 21.2	10
56000150	2 x 16/1 x 21	16/21	21.2 / 28.5	10
56000160	2 x 21/1 x 29	21/29	28.5 / 34.5	10
SILVYN® KLICK-Y (TPE) black				
56000125	3 x 7	7	10	10
56000145	2 x 11/1 x 16	11/16	13 / 21.2	10
56000155	2 x 16/1 x 21	16/21	21.2 / 28.5	10
56000165	2 x 21/1 x 29	21/29	28.5 / 34.5	10

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

SILVYN® KCLICK-S / SILVYN® KCLICK-D / SILVYN® KCLICK-V



SILVYN® KCLICK-V



SILVYN® KCLICK-D



SILVYN® KCLICK-S

■ Benefits

SILVYN® KCLICK-S

- Fast assembly
- Easy to disassemble
- Tear-proof connection
- No slack in the conduit

SILVYN® KCLICK-D

- Ensures that the conduit is fixed to the conduit-holder

SILVYN® KCLICK-V

- Connects several conduit holders with one another

■ Application range

SILVYN® KCLICK-S

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Fastening of conduits on machine walls for all applications

SILVYN® KCLICK-D

- In combination with
- SILVYN® KCLICK S
- Cover for conduit holder SILVYN® KCLICK S

SILVYN® KCLICK-V

- In combination with

■ Product features

SILVYN® KCLICK-S

- Impact-resistant polyamide

SILVYN® KCLICK-D

- Fits tightly to SILVYN® KCLICK S

SILVYN® KCLICK-V

- Fits tightly to SILVYN® KCLICK S

■ Approvals



■ Design

SILVYN® KCLICK-S

- Multi-part conduit holder with M5 borehole for fixation

SILVYN® KCLICK-D

- Cover with connection pins

SILVYN® KCLICK-V

- Connection pin

■ Note

- For black (RAL 9005), replace the last digit of the part no. with "5".

■ Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

■ Technical data



Colour delivered
Grey (RAL 7001)
Black (RAL 9005), UV-resistant



Material
PA6



Temperature range
-40 °C to +115 °C

Article number	PG size	Pieces / PU
SILVYN® KCLICK-S grey		
61811110	7	100
61811120	9	100
61811130	11	50
61811190	13,5	50
61811140	16	50
61811150	21	50
61811160	29	30
61811170	36	20
61811180	48	20
SILVYN® KCLICK-D grey		
61811200	7	100
61811260	11	50
61811210	16	50
61811220	21	50
61811230	29	30
61811240	36	20
61811250	48	20
SILVYN® KCLICK-V grey		
61811270	100	

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

■ Similar products

SILVYN® KCLICK-D

- SILVYN® KCLICK-S refer to Main Catalogue page 792

SILVYN® KCLICK-V

- SILVYN® KCLICK-S refer to Main Catalogue page 792

SILVYN® KCLICK-RH

Benefits

- Fast assembly
- Easy to disassemble
- Tear-proof connection
- No slack in the conduit
- No loose parts

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Fastening of conduits on machine walls for all applications

Product features

- Impact-resistant polyamide
- One-piece conduit holder
- Suitable for mounting onto a C-profile rail
- Stackable

Approvals



- UL FILENUMBER E308201

Design

- One-piece conduit holder with M4/M5/M6 borehole for fixation

Suitable conduits

- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Technical data

RAL	Colour delivered Grey (RAL 7001) Black (RAL 9005), UV-resistant
	Material PA6
	Temperature range range



SILVYN® KCLICK-RH

Article number	PG size	Pieces / PU
SILVYN® KCLICK-RH grey		
65500300	7	50
65500310	9	50
65500320	11	50
65500330	13.5	50
65500340	16	50
65500350	21	25
65500360	29	25
65500370	36	25
65500380	48	10
SILVYN® KCLICK-RH black		
65500305	7	50
65500315	9	50
65500325	11	50
65500335	13.5	50
65500345	16	50
65500355	21	25
65500365	29	25
65500375	36	25
65500385	48	10

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

Benefits

- Easy to assemble
- High temperature resistance
- Cable damage can be prevented
- Additional sealing

Application range

- In combination with protective conduit
- SILVYN® RILL PA6
- SILVYN® RILL PA12
- Intersection or end sleeve

Technical data

RAL	Colour delivered Grey (RAL 7001) Black (RAL 9005), UV-resistant
	Material TPE-V
	Temperature range -40°C to +120°C

Approvals



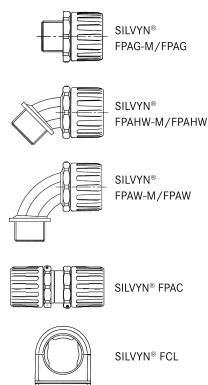
Suitable conduits

- SILVYN® FPAS Page 797
- SILVYN® RILL PA 6 Page 782
- SILVYN® RILL PA 12 Page 783

Article number	Article designation	Article IØ x OØ (mm)	Bending radius (mm)	Suitable for SILVYN® KCLICK-GM/WM	Suitable for SILVYN® KCLICK-GP/WP	Suitable for SILVYN® KCLICK-GPZ-M/GPZ	PU ring (m)
SILVYN® K-EM grey							
65500200	7	10	1.0 - 8.0	29.0	50		
65500210	9	13	1.0 - 10.0	32.5	50		
65500220	11	15.8	4.0 - 12.0	36.5	50		
65500230	16	21.2	6.0 - 16.5	37.5	50		
65500240	21	28.5	6.0 - 23.0	40.2	25		
65500250	29	34.5	6.0 - 29.0	44.2	25		
65500260	36	42.5	10.0 - 37.0	46.0	25		
65500270	48	54.5	10.0 - 47.0	52.0	10		
SILVYN® K-EM black							
65500205	7	10	1.0 - 8.0	29.0	50		
65500215	9	13	1.0 - 10.0	32.5	50		
65500225	11	15.8	4.0 - 12.0	36.5	50		
65500235	16	21.2	6.0 - 16.5	37.5	50		
65500245	21	28.5	6.0 - 23.0	40.2	25		
65500255	29	34.5	6.0 - 29.0	44.2	25		
65500265	36	42.5	10.0 - 37.0	46.0	25		
65500275	48	54.5	10.0 - 47.0	52.0	10		

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

SILVYN® FPAS



SILVYN® FPAS

■ Benefits

- Dimensionally stable
- Flexible
- Flame-retardant and self-extinguishing according to UL 94V-2
- High crush-resistance
- Impact-resistant

■ Application range

- Mechanical engineering
- Plant engineering
- Railway applications / vehicle construction
- Moving applications
- Outdoors

■ Product features

- Halogen and cadmium-free
- Abrasion-resistant
- High resistance to oil, petrol, acids and other chemicals

■ Approvals



- UL FILENUMBER E308201
- UNDERGROUND

■ Design

- Fine-profile corrugated polyamide 6 conduit

■ Technical data



Colour delivered
Black (RAL 9005), UV-resistant
Grey (RAL 7001)



Material
PA 6
Halogen-free



Temperature range
-40°C to +120°C static
-20°C to +100°C dynamic

Article number	Article designation	Internal Ø x external Ø (mm)	Bending radius (mm)	Inner Ø (mm)	PU ring (m)
SILVYN® FPAS black					
61754005	10	6.3 x 10.0	15	6.3	50
61754015	13	9.8 x 13.0	25	9.8	50
61754025	16	11.8 x 15.8	40	11.8	50
61754275	18	14.2 x 18.5	40	14.2	50
61754035	21	16.7 x 21.2	45	16.7	50
61754045	28	22.8 x 28.5	50	22.8	50
61754055	34	28.1 x 34.5	60	28.1	25
61754065	42	35.5 x 42.5	70	35.5	25
61754075	54	47.2 x 54.5	80	47.2	25
61754305	67	56.3 x 67.2	130	56.3	10
SILVYN® FPAS grey					
61754000	10	6.3 x 10.0	15	6.3	50
61754010	13	9.8 x 13.0	25	9.8	50
61754020	16	11.8 x 15.8	40	11.8	50
61754270	18	14.2 x 18.5	40	14.2	50
61754030	21	16.7 x 21.2	45	16.7	50
61754040	28	22.8 x 28.5	50	22.8	50
61754050	34	28.1 x 34.5	60	28.1	25
61754060	42	35.5 x 42.5	70	35.5	25
61754070	54	47.2 x 54.5	80	47.2	25
61754300	67	56.3 x 67.2	130	56.3	10

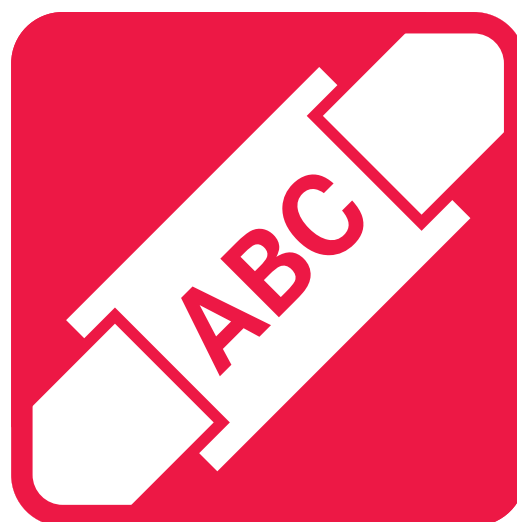
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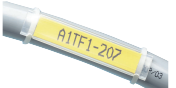
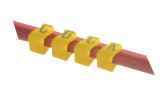
■ Similar products

- SILVYN® FPAG-M refer to Main Catalogue page 798
- SILVYN® FPAX-M refer to Main Catalogue page 799
- SILVYN® FPAHW-M
- SILVYN® FPAG 90° M refer to Main Catalogue page 800
- SILVYN® KSE-M refer to Main Catalogue page 805
- SILVYN® FPAG refer to Main Catalogue page 803
- SILVYN® FPAG 90° PG refer to Main Catalogue page 803
- SILVYN® FCL refer to Main Catalogue page 804
- SILVYN® FPAC refer to Main Catalogue page 805
- SILVYN® FLEXILOK M refer to Main Catalogue page 801
- SILVYN® FLEXILOK PG refer to Main Catalogue page 801
- SILVYN® FLEXILOK 90° M refer to Main Catalogue page 802
- SILVYN® FLEXILOK 90° PG refer to Main Catalogue page 802

FLEXIMARK®

Cable marking systems



		BASIC SYSTEM		CUSTOMIZED SYSTEM		
How?		Ready made to deliver for each environment		Your demand – we deliver		
What?						
CABLE	Outdoor & Indoor	 MINI & MAXI & HOLDERS PTE	 STAINLESS STEEL	 STAINLESS STEEL	 CABLE MARKING	
		 COLLARS TS & HF & MARKING TAGS	 SHRINK TUBES	 COLLARS FOR CABLE TIES & MARKING TAGS	 COLLARS FOR CABLE TIES & MARKING TAGS	 TEXT COLLARS PTET
	Indoor	 LABEL CARDS AND BLOCKS	 DYMO® printer	 SHRINK TUBE MARKING	 CABLE TIE MARKING FKBB	
WIRE	before mounting the wire	 FLEXIPART	 PA MARKING RINGS	 SHRINK TUBE MARKING	 FLEXIPART	 MARKING RINGS
	after mounting the wire	 SNAP-ON COLLARS & MARKING TAGS	 PC MARKING RINGS		 SNAP-ON COLLARS & MARKING TAGS	
COMPONENT	Device marking	 MLM MOUNTING PROFILES & MINI	 PGS CHARACTER HOLDERS		 ENGRAVED MARKING	
	Terminal	 TERMINAL BLOCK	 DYMO® printer		 TERMINAL BLOCK	
	Sensor					

DYMO® is a registered trademark of SANFORD GmbH

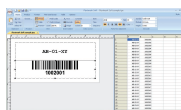
For current information see: www.lappkorea.com

DATA MARKING

Laser office printer



FLEXIMARK® 10.0



Thermal transfer printers



COLLARS FOR CABLE TIES LFL 4,2



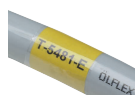
FLEXILABEL LFL & HOLDERS
PTET/LAB



FLEXILABEL TFL & HOLDERS
PTEF/LAB



COLLARS FOR CABLE TIES &
MARKING TAGS TMB



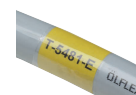
LCK/LCFK LABELS



CABLE LABEL LFL & TIES



CABLE LABEL LTFL & TIES



TCK LABELS



TAG TIES & LA/LB LABELS



FLEXIMARK® flat shrink tube



TAG TIES & TA LABELS



FLEXIPRINT LF



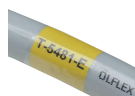
COLLARS TS/HF &
FLEXILABEL LFL 4,2



FLEXIPRINT TF



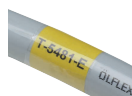
SHRINKING TUBES
SHRINK MARK SM



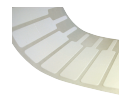
LCFK/LCK LABELS



BRADY® FLAG LABELS B-425



TCK LABELS



FLAG LABELS



SNAP-ON COLLARS &
MARKING TAGS



LA/LB LABELS



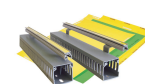
LFL LEXEL/THORSMAN



TA LABELS



BRADY® EPREP



MLM MOUNTING
PROFILES & TFL 9,5



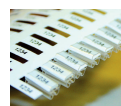
LA/LB/LC LABELS



TERMINAL BLOCK



CLIP-ON COLLARS & LFL



BRADY® DURASLEEVE



CLIP-ON COLLARS &
MARKING TAGS

Connection and crimping

Conductor end sleeves

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Cable ties

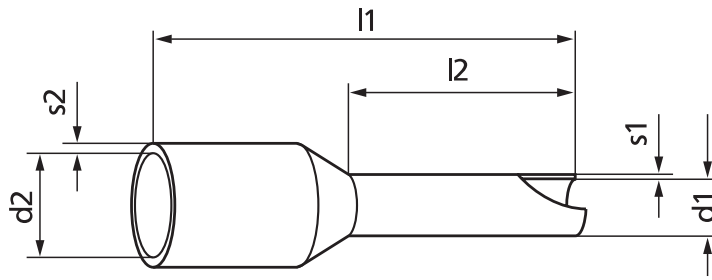
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New

Cable Accessories



Conductor end sleeves insulated



Conductor end sleeves insulated

Benefits

- The funnel-shaped opening makes it easy to slip them onto the strands.

Application range

- Control cabinets and equipment wiring

Product features

- The conductor is permanently connected to the collar by crimping.

Approvals



- All DIN conductor end-sleeves are in accordance with DIN 46228 Part 4

Note

- For processing tools see the keyword index "crimping pliers for conductor end sleeves"

Suitable tools

- PEW 8.87 crimping pliers refer to Main Catalogue page 916
- K29 crimping pliers refer to Main Catalogue page 917

Technical data



Note
Halogen-free



Material
Copper/PP
Surface: tin-plated



Temperature range
Permanent load from -55°C to +105°C

Article number	Article designation	For mm²	AWG	Core colour	l1 mm	l2 mm	d 1 mm	s1 mm	d 2 mm	s2 mm	Pieces / PU
61721866	AHI N 0,25/6	0.25	24	light blue	10.50	6.0	0.80	0.25	2.00	0.25	500
61721867	AHI L 0,25/8	0.25	24	light blue	12.50	8.0	0.80	0.25	2.00	0.25	500
61721868	AHI N 0,34/6	0.34	24	turquoise	10.50	6.0	0.80	0.25	2.00	0.25	500
61721869	AHI L 0,34/8	0.34	24	turquoise	12.50	8.0	0.80	0.25	2.00	0.25	500
61801580	AHI DIN K 0,5/6	0.50	20	white	11.50	6.0	1.10	0.15	2.50	0.25	500
61801590	AHI DIN N 0,5/8	0.50	20	white	13.50	8.0	1.10	0.15	2.50	0.25	500
61801600	AHI DIN HL 0,5/10	0.50	20	white	15.50	10.0	1.10	0.15	2.50	0.25	500
61721871	AHI N 0,5/8	0.50	20	orange	13.50	8.0	1.10	0.15	2.50	0.25	500
61801620	AHI DIN K 0,75/6	0.75	20	grey	12.00	6.0	1.30	0.15	2.80	0.25	500
61801630	AHI DIN N 0,75/8	0.75	20	grey	14.00	8.0	1.30	0.15	2.80	0.25	500
61801640	AHI DIN HL 0,75/10	0.75	20	grey	16.00	10.0	1.30	0.15	2.80	0.25	500
61801650	AHI DIN L 0,75/12	0.75	20	grey	18.00	12.0	1.30	0.15	2.80	0.25	500
61721880	AHI N 0,75/8	0.75	20	white	14.00	8.0	1.30	0.15	2.80	0.25	500
61801660	AHI DIN K 1/6	1.00	18	red	12.50	6.0	1.50	0.15	3.00	0.30	500
61801670	AHI DIN N 1/8	1.00	18	red	14.50	8.0	1.50	0.15	3.00	0.30	500
61801680	AHI DIN HL 1/10	1.00	18	red	16.50	10.0	1.50	0.15	3.00	0.30	500
61801690	AHI DIN L 1/12	1.00	18	red	18.50	12.0	1.50	0.15	3.00	0.30	500
61721890	AHI N 1/8	1.00	18	yellow	14.50	8.0	1.50	0.15	3.00	0.30	500
61801700	AHI K 1,5/6	1.50	16	black	12.50	6.0	1.80	0.15	3.40	0.30	500
61801710	AHI DIN N 1,5/8	1.50	16	black	14.50	8.0	1.80	0.15	3.40	0.30	500
61801720	AHI DIN HL 1,5/10	1.50	16	black	16.50	10.0	1.80	0.15	3.40	0.30	500
61801730	AHI DIN L 1,5/18	1.50	16	black	24.50	18.0	1.80	0.15	3.40	0.30	500
61721900	AHI N 1,5/8	1.50	16	red	14.50	8.0	1.80	0.15	3.40	0.30	500
61721910	AHI HL 1,5/10	1.50	16	red	16.50	10.0	1.80	0.15	3.40	0.30	500
61746720	AHI L 1,5/18	1.50	16	red	24.50	18.0	1.80	0.15	3.40	0.30	500
61801750	AHI DIN N 2,5/8	2.50	14	blue	15.00	8.0	2.30	0.15	4.20	0.30	500
61801760	AHI DIN HL 2,5/12	2.50	14	blue	19.00	12.0	2.30	0.15	4.20	0.30	500
61801770	AHI DIN L 2,5/18	2.50	14	blue	25.00	18.0	2.30	0.15	4.20	0.30	500
61801780	AHI DIN N 4/10	4.00	12	grey	17.50	10.0	2.90	0.20	4.80	0.30	500
61801790	AHI DIN HL 4/12	4.00	12	grey	20.00	12.0	2.90	0.20	4.80	0.30	500
61801800	AHI DIN L 4/18	4.00	12	grey	26.00	18.0	2.90	0.20	4.80	0.30	100
61801810	AHI DIN N 6/12	6.00	10	yellow	20.00	12.0	3.60	0.20	6.20	0.30	100
61801820	AHI DIN L 6/18	6.00	10	yellow	25.00	18.0	3.60	0.20	6.20	0.30	100
61721940	AHI N 6/12	6.00	10	black	20.00	12.0	3.60	0.20	6.20	0.30	100
61721950	AHI L 6/18	6.00	10	black	26.00	18.0	3.60	0.20	6.20	0.30	100
61801830	AHI DIN N 10/12	10.00	8	red	21.00	12.0	4.60	0.20	7.50	0.30	100
61801840	AHI DIN L 10/18	10.00	8	red	27.00	18.0	4.60	0.20	7.50	0.30	100
61721960	AHI N 10/12	10.00	8	ivory	21.00	12.0	4.60	0.20	7.50	0.30	100
61721970	AHI L 10/18	10.00	8	ivory	27.00	18.0	4.60	0.20	7.50	0.30	100
61801850	AHI DIN N 16/12	16.00	6	blue	23.00	12.0	6.00	0.20	8.80	0.40	100
61801860	AHI DIN L 16/18	16.00	6	blue	29.00	18.0	6.00	0.20	8.80	0.40	100
61721980	AHI N 16/12	16.00	6	green	23.00	12.0	6.00	0.20	8.80	0.40	100
61721990	AHI L 16/18	16.00	6	green	29.00	18.0	6.00	0.20	8.80	0.40	100
61801870	AHI DIN N 25/16	25.00	4	yellow	29.00	16.0	7.50	0.20	11.00	0.50	50
61801890	AHI DIN L 25/22	25.00	4	yellow	35.00	22.0	7.50	0.20	11.00	0.50	50
61746770	AHI N 25/16	25.00	4	brown	29.00	16.0	7.50	0.20	11.00	0.50	50
61746780	AHI L 25/22	25.00	4	brown	35.00	22.0	7.50	0.20	11.00	0.50	50
61801900	AHI DIN N 35/16	35.00	2	red	30.00	16.0	8.50	0.20	12.50	0.50	50
61801920	AHI DIN L 35/25	35.00	2	red	39.00	25.0	8.50	0.20	12.50	0.50	50
61746790	AHI N 35/16	35.00	2	beige	30.00	16.0	8.50	0.20	12.50	0.50	50
61746800	AHI L 35/25	35.00	2	beige	39.00	25.0	8.50	0.20	12.50	0.50	50
61801930	AHI DIN N 50/20	50.00	1	blue	36.00	20.0	10.50	0.30	15.00	0.60	50
61801940	AHI DIN L 50/25	50.00	1	blue	41.00	25.0	10.50	0.30	15.00	0.60	50
61801950	AHI N 70/20	70.00	2/0	yellow	37.00	20.0	12.70	0.40	16.00	0.60	25
61801960	AHI L 70/27	70.00	2/0	yellow	44.00	27.0	12.70	0.40	16.00	0.60	25
61801970	AHI N 95/25	95.00	3/0	red	44.00	25.0	14.70	0.40	18.00	0.60	25
61801980	AHI N 120/27	120.00	4/0	blue	48.00	27.0	16.70	0.50	21.00	0.70	25
61801990	AHI N 150/32	150.00	300	yellow	58.00	32.0	19.50	0.50	23.00	1.00	25

K = short; N = medium; HL = large; L = extra large; Other sizes and colours are available upon request
Photographs are not to scale and do not represent detailed images of the respective products

DIN-assorted boxes conductor end sleeves / AHI assorted boxes / TWIN assorted boxes



TWIN assorted boxes



AHI assorted boxes



DIN-assorted boxes conductor end sleeves

Benefits

- Convenient assortment boxes - several diameters always at your fingertips

Application range

DIN-assorted boxes conductor end sleeves

- DIN conductor end sleeves
- Manufacturing of control cabinets and equipment

AHI assorted boxes

- AHI assortment box
- Manufacturing of control cabinets and equipment

TWIN assorted boxes

- TWIN assortment box
- Manufacturing of control cabinets and equipment

Approvals



- The insulated conductor end sleeves are in accordance with DIN 46228, part 4 (0.25 mm² and 0.34 mm² not standardised) in assortment boxes

Note

- For processing tools see the keyword index "crimping pliers for conductor end sleeves"

Design

DIN-assorted boxes conductor end sleeves

- DIN assortment box I:
30 x 0.25 - 6 mm BU, 30 x 0.34 - 6 mm YE,
30 x 0.5 - 8 mm WH, 30 x 0.75 - 8 mm GY,
30 x 1.00 - 8 mm RD
- DIN assortment box II:
50 x 0.5 - 8 mm WH, 100 x 0.75 - 8 mm GY,
100 x 1.00 - 8 mm RD, 100 x 1.5 - 8 mm BK,
50 x 2.5 - 8 mm BU
- DIN assortment box III:
40 x 4.00 - 10 mm GY, 20 x 6.0 - 12 mm YE,
20 x 10.00 - 12 mm RD, 10 x 16.00 - 12 mm BU

AHI assorted boxes

- AHI assortment box I (yellow):
30 x 0.25 - 6 mm LBU, 30 x 0.34 - 6 mm TO,
30 x 0.5 - 8 mm ON, 30 x 0.75 - 8 mm WH,
30 x 1.00 - 8 mm YE
- AHI assortment box II (orange):
50 x 0.5 - 8 mm OG, 100 x 0.75 - 8 mm WH,
100 x 1.00 - 8 mm YE, 100 x 1.5 - 8 mm RD,
50 x 2.5 - 8 mm BU

- AHI assortment box III (blue):

50 x 4.00 - 10 mm GY, 20 x 6.0 - 12 mm BK,
20 x 10.00 - 12 mm WH, 10 x 16.00 - 12 mm GN

TWIN assorted boxes

- TWIN assortment box
- 2x0,75 - 8mm, 2x1,00 - 8mm, 2x1,5 - 8mm,
2x2,5 - 10mm

Article number	Article designation	For mm ²	Contents (unit)	PU
DIN assortment box				
61802040	DIN assortment box I	0.25 - 1.00	150 x 1	1
61802041	DIN assortment box II	0.50 - 2.50	400 x 1	1
61802042	DIN assortment box III	4.00 - 16.00	100 x 1	1
AHI assortment box				
61794720	AHI assortment box I	0.25 - 1.00	150 x 1	1
61794730	AHI assortment box II	0.50 - 2.50	400 x 1	1
61794740	AHI assortment box III	4.00 - 16.00	100 x 1	1
TWIN assortment box				
61802046	TWIN assortment box	2 x 0,75 - 2 x 2,5	200 x 1	1

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

Insulated cable lugs



Insulated cable lugs

Benefits

- EASY-ENTRY funnel shape of the plastic sleeve enables simple, fast and safe insertion of the conductor
- No risk of bent and crushed cables
- For good strength and improved current conduction

Application range

- Manufacturing of control cabinets and equipment

Product features

- Hard-soldered cable lug that can be pressed in any position
- For first-class connection with simple operating principle
- Electrolytic tinning for max. corrosion protection
- Flat receptacle material in contact pressing is double-folded and hard-soldered
- Metal sleeves with internal corrugation

Approvals



- Tested in accordance with DIN IEC 60352
- File Number E334109, see table

Note

- For processing tools see the keyword index "crimping pliers for conductor end sleeves"

Design

- 1 = ring cable lugs
- 2 = forked cable lugs
- 3 = pin cable lugs
- 4 = circular connector
- 5 = connector sleeve
- 6 = butt connector
- 7 = end connector

Technical data



General

Other sizes and colours (also DIN) are available upon request
Halogen-free



Note

For processing tools see the keyword index "crimping pliers for other connections"



Material

High-quality electrolytic copper for good conductivity
Polyamide insulation



Temperature range

-40°C to +105°C
Short-term: up to +120°C

Suitable tools

- DSA 0110 + DSA 0725 crimping pliers refer to Main Catalogue page 924
- CSA 0760 + KSA 0760 crimping pliers refer to Main Catalogue page 924

Article number	Article designation	For mm ²	UL approval	Connection bolt	Core colour	Pieces / PU
Ring cable lugs						
63104010	L-RZ 3	0.25 - 0.75	no	M 3	green	100
63104020	L-RZ 4	0.25 - 0.75	no	M 4	green	100
63104030	L-RZ 5	0.25 - 0.75	no	M 5	green	100
63104040	L-RA 3	0.5 - 1.5	yes	M 3	red	100
63104050	L-RA 35	0.5 - 1.5	yes	M 3.5	red	100
63104060	L-RA 4	0.5 - 1.5	yes	M 4	red	100
63104070	L-RA 5	0.5 - 1.5	yes	M 5	red	100
63104080	L-RA 6	0.5 - 1.5	yes	M 6	red	100
63104160	L-RB 3	1.5 - 2.5	yes	M 3	blue	100
63104170	L-RB 4	1.5 - 2.5	yes	M 4	blue	100
63104180	L-RB 5	1.5 - 2.5	yes	M 5	blue	100
63104190	L-RB 6	1.5 - 2.5	yes	M 6	blue	100
63104200	L-RB 8	1.5 - 2.5	yes	M 8	blue	100
63104340	L-RC 4	4 - 6	yes	M 4	yellow	100
63104350	L-RC 5	4 - 6	yes	M 5	yellow	100
63104360	L-RC 6	4 - 6	yes	M 6	yellow	100
63104370	L-RC 8	4 - 6	yes	M 8	yellow	100
63104380	L-RC 10	4 - 6	yes	M 10	yellow	50
Fork cable lugs						
63105010	L-RZ 3 F	0.25 - 0.75	no	M 3	green	100
63105020	L-RZ 4 F	0.25 - 0.75	no	M 4	green	100
63105050	L-RA 4 F	0.5 - 1.5	yes	M 4	red	100
63105060	L-RA 5 F	0.5 - 1.5	yes	M 5	red	100
63105070	L-RA 6 F	0.5 - 1.5	yes	M 6	red	100
63105130	L-RB 4 F	1.5 - 2.5	yes	M 4	blue	100
63105140	L-RB 5 F	1.5 - 2.5	yes	M 5	blue	100
63105150	L-RB 6 F	1.5 - 2.5	yes	M 6	blue	100
63105210	L-RC 4 F	4 - 6	yes	M 4	yellow	100
63105220	L-RC 5 F	4 - 6	yes	M 5	yellow	100
63105230	L-RC 6 F	4 - 6	yes	M 6	yellow	50
Narrow fork cable lugs						
63105040	L-RA 35 F	0.5 - 1.5	yes	M 3.5	red	100
63105110	L-RB 3 F	1.5 - 2.5	yes	M 3	blue	100
63105120	L-RB 35 F	1.5 - 2.5	yes	M 3.5	blue	100
Flange fork cable lugs						
63108010	L-RA 35 FF	0.5 - 1.5	no	M 3.5	red	100
63108040	L-RB 4 FF	1.5 - 2.5	no	M 4	blue	100
63108050	L-RB 5 FF	1.5 - 2.5	no	M 5	blue	100
Pin cable lugs						
63107010	L-RZP	0.25 - 0.75	no		green	100
63107020	L-RAP	0.5 - 1.5	yes		red	100
63107040	L-RBP	1.5 - 2.5	yes		blue	100
63107070	L-RCP	4 - 6	yes		yellow	100
Circular connector						
63110010	L-RABM	0.5 - 1.5	no		red	100
63110020	L-RB 5 BM	1.5 - 2.5	no		blue	100
Connector sleeve						
63111010	L-RAB	0.5 - 1.5	no		red	100
63111020	L-RB 5 B	1.5 - 2.5	no		blue	100
Butt connector						
63106020	L-RAA 15	0.5 - 1.5	yes		red	100
63106040	L-RBB 25	1.5 - 2.5	yes		blue	100
63106080	L-RCC 6	4 - 6	yes		yellow	50
End joint						
63112010	L-RBJ	1.5 - 2.5	no		blue	100
63112020	L-RBJ	4 - 6	no		yellow	100

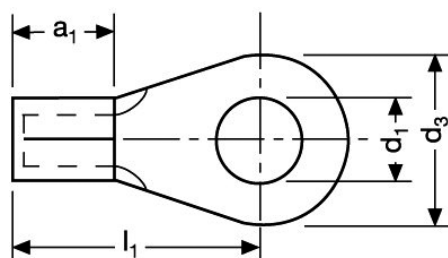
Other sizes and colours are available upon request.

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

Cable lugs KB

Technical data

- Note**
s = thickness of material
- Material**
High-quality electrolytic copper for good conductivity
- Temperature range**
Max. temperature: +120°C (short-term)



Benefits

- For first-class connection with simple operating principle
- Thus providing the best electrical conductivity (least resistance)

Application range

- Manufacturing of control cabinets and equipment
- Trains and buses

Approvals



- In accordance with VG 88710
- Coil form DIN 46234, non-insulated

Note

- For processing tools see the keyword index "crimping pliers for other connections"

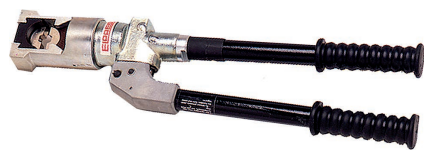
Suitable tools

- PEW 12 universal tool refer to Main Catalogue page 932
- WT 4454 PNEU universal pressing pliers

Article number	Article designation	For mm ²	UL approval	AWG	Nominal size	d1	d3	l1	a1	s	Pieces / PU
63204015	KB1-2,5R DIN 46234	0.5 - 1.5	no	22-16	2.5-1.0	2.8	6.0	11.0	5.0	0.8	100
63204025	KB1-3R DIN 46234	0.5 - 1.5	no	22-16	3.2-1.0	3.2	6.0	11.0	5.0	0.8	100
63204035	KB1-3.5R DIN 46234	0.5 - 1.5	no	22-16	3.5-1.0	3.7	6.0	11.0	5.0	0.8	100
63204045	KB1-4R DIN 46234	0.5 - 1.5	no	22-16	4.0-1.0	4.3	8.0	12.0	5.0	0.8	100
63204055	KB1-5R DIN 46234	0.5 - 1.5	no	22-16	5.0-1.0	5.3	10.0	13.0	5.0	0.8	100
63204065	KB1-6R DIN 46234	0.5 - 1.5	no	22-16	6.0-1.0	6.5	10.0	13.0	5.0	0.8	100
63204075	KB1-8R DIN 46234	0.5 - 1.5	no	22-16	8.0-1.0	8.4	14.0	17.0	5.0	0.8	100
63204085	KB1-10R DIN 46234	0.5 - 1.5	no	22-16	10.0-1.0	10.5	14.0	17.0	5.0	0.8	100
63204095	KB2-5-3R DIN 46234	1.5 - 2.5	no	16-14	3.0-2.5	3.2	6.0	11.0	5.0	0.8	100
63204105	KB2-5-3.5R DIN 46234	1.5 - 2.5	no	16-14	3.5-2.5	3.7	6.0	11.0	5.0	0.8	100
63204115	KB2-5-4R DIN 46234	1.5 - 2.5	no	16-14	4.0-2.5	4.3	8.0	12.0	5.0	0.8	100
63204125	KB2-5-5R DIN 46234	1.5 - 2.5	no	16-14	5.0-2.5	5.3	10.0	14.0	5.0	0.8	100
63204135	KB2-5-6R DIN 46234	1.5 - 2.5	no	16-14	6.0-2.5	6.5	11.0	16.0	5.0	0.8	100
63204145	KB2-5-8R DIN 46234	1.5 - 2.5	no	16-14	8.0-2.5	8.4	14.0	17.0	5.0	0.8	100
63204155	KB2-5-10R DIN 46234	1.5 - 2.5	no	16-14	10.0-2.5	10.5	14.0	17.0	5.0	0.8	100
63204165	KB2-5-12R DIN 46234	1.5 - 2.5	no	16-14	12.0-2.5	13.0	18.0	20.0	5.0	0.8	100
63204175	KB6-4R DIN 46234	2.5 - 6	no	12-10	4.0-6.0	4.3	8.0	14.0	6.0	1.0	100
63204185	KB6-5R DIN 46234	2.5 - 6	no	12-10	5.0-6.0	5.3	10.0	15.0	6.0	1.0	100
63204195	KB6-6R DIN 46234	2.5 - 6	no	12-10	6.0-6.0	6.5	11.0	16.0	6.0	1.0	100
63204205	KB6-8R DIN 46234	2.5 - 6	no	12-10	8.0-6.0	8.4	14.0	19.0	6.0	1.0	100
63204215	KB6-10R DIN 46234	2.5 - 6	no	12-10	10.0-6.0	10.5	18.0	21.0	6.0	1.0	100
63204225	KB6-12R DIN 46234	2.5 - 6	no	12-10	12.0-6.0	13.0	18.0	21.0	6.0	1.0	100
63204235	KB10-5R DIN 46234	10	no	8	5.0-10.0	5.3	10.0	16.0	8.0	1.1	100
63204245	KB10-6R DIN 46234	10	no	8	6.0-10.0	6.5	11.0	17.0	8.0	1.1	100
63204255	KB10-8R DIN 46234	10	no	8	8.0-10.0	8.4	14.0	20.0	8.0	1.1	100
63204265	KB10-10R DIN 46234	10	no	8	10.0-10.0	10.5	18.0	21.0	8.0	1.1	100
63204275	KB10-12R DIN 46234	10	no	8	12.0-10.0	13.0	22.0	23.0	8.0	1.1	100
63204285	KB16-5R DIN 46234	16	no	6	5.0-16.0	5.3	11.0	20.0	10.0	1.2	100
63204295	KB16-6R DIN 46234	16	no	6	6.0-16.0	6.5	11.0	20.0	10.0	1.2	100
63204305	KB16-8R DIN 46234	16	no	6	8.0-16.0	8.4	14.0	22.0	10.0	1.2	100
63204315	KB16-10R DIN 46234	16	no	6	10.0-16.0	10.5	18.0	24.0	10.0	1.2	100
63204325	KB16-12R DIN 46234	16	no	6	12.0-16.0	13.0	22.0	26.0	10.0	1.2	100
63204335	KB25-5R DIN 46234	25	no	4	5.0-25.0	5.3	12.0	25.0	11.0	1.5	100
63204345	KB25-6R DIN 46234	25	no	4	6.0-25.0	6.5	12.0	25.0	11.0	1.5	100
63204355	KB25-8R DIN 46234	25	no	4	8.0-25.0	8.4	16.0	25.0	11.0	1.5	100
63204365	KB25-10R DIN 46234	25	no	4	10.0-25.0	10.5	18.0	26.0	11.0	1.5	100
63204375	KB25-12R DIN 46234	25	no	4	12.0-25.0	13.0	31.0	31.0	11.0	1.5	100
63204385	KB25-16R DIN 46234	25	no	4	16.0-25.0	17.0	35.0	36.0	11.0	1.5	100
63204395	KB35-6R DIN 46234	35	no	2	6.0-35.0	6.5	15.0	26.0	12.0	1.6	100
63204405	KB35-8R DIN 46234	35	no	2	8.0-35.0	8.4	16.0	26.0	12.0	1.6	100
63204415	KB35-10R DIN 46234	35	no	2	10.0-35.0	10.5	18.0	27.0	12.0	1.6	100
63204425	KB35-12R DIN 46234	35	no	2	12.0-35.0	13.0	22.0	31.0	12.0	1.6	100
63204435	KB35-16R DIN 46234	35	no	2	16.0-35.0	17.0	28.0	36.0	12.0	1.6	100
63204445	KB50-6R DIN 46234	50	no	1/0	6.0-50.0	6.5	18.0	34.0	16.0	1.8	100
63204455	KB50-8R DIN 46234	50	no	1/0	8.0-50.0	8.4	18.0	34.0	16.0	1.8	100
63204465	KB50-10R DIN 46234	50	no	1/0	10.0-50.0	10.5	18.0	34.0	16.0	1.8	100
63204475	KB50-12R DIN 46234	50	no	1/0	12.0-50.0	13.0	22.0	36.0	16.0	1.8	100
63204485	KB50-16R DIN 46234	50	no	1/0	16.0-50.0	17.0	28.0	40.0	16.0	1.8	100
63204495	KB70-6R DIN 46234	70	no	2/0	6.0-70.0	6.5	22.0	38.0	18.0	2.0	100
63204505	KB70-8R DIN 46234	70	no	2/0	8.0-70.0	8.4	22.0	38.0	18.0	2.0	100
63204515	KB70-10R DIN 46234	70	no	2/0	10.0-70.0	10.5	22.0	38.0	18.0	2.0	100
63204525	KB70-12R DIN 46234	70	no	2/0	12.0-70.0	13.0	22.0	38.0	18.0	2.0	100
63204535	KB70-16R DIN 46234	70	no	2/0	16.0-70.0	17.0	28.0	42.0	18.0	2.0	100
63204545	KB95-8R DIN 46234	95	no	3/0	8.0-95.0	8.4	24.0	42.0	20.0	2.5	50
63204555	KB95-10R DIN 46234	95	no	3/0	10.0-95.0	10.5	24.0	42.0	20.0	2.5	50
63204565	KB95-12R DIN 46234	95	no	3/0	12.0-95.0	13.0	24.0	42.0	20.0	2.5	50
63204575	KB95-16R DIN 46234	95	no	3/0	16.0-95.0	17.0	28.0	44.0	20.0	2.5	50
63204585	KB120-8R DIN 46234	120	no	4/0	8.0-120.0	8.4	24.0	44.0	22.0	3.0	25
63204595	KB120-10R DIN 46234	120	no	4/0	10.0-120.0	10.5	24.0	44.0	22.0	3.0	25
63204605	KB120-12R DIN 46234	120	no	4/0	12.0-120.0	13.0	24.0	44.0	22.0	3.0	25
63204615	KB120-16R DIN 46234	120	no	4/0	16.0-120.0	17.0	28.0	48.0	22.0	3.0	25
63204625	KB150-10R DIN 46234	150	no	5/0	10.0-150.0	10.5	30.0	50.0	24.0	3.2	25
63204635	KB150-12R DIN 46234	150	no	5/0	12.0-150.0	13.0	30.0	50.0	24.0	3.2	25
63204645	KB150-16R DIN 46234	150	no	5/0	16.0-150.0	17.0	30.0	50.0	24.0	3.2	25
63204655	KB185-10R DIN 46234	185	no	6/0	10.0-185.0	10.5	36.0	50.0	28.0	3.5	20
63204665	KB185-12R DIN 46234	185	no	6/0	12.0-185.0	13.0	36.0	50.0	28.0	3.5	20
63204675	KB185-16R DIN 46234	185	no	6/0	16.0-185.0	17.0	36.0	50.0	28.0	3.5	20
63204685	KB240-10R DIN 46234	240	no	7/0	10.0-240.0	10.5	38.0	56.0	32.0	4.0	10
63204695	KB240-12R DIN 46234	240	no	7/0	12.0-240.0	13.0	38.0	56.0	32.0	4.0	10
63204705	KB240-16R DIN 46234	240	no	7/0	16.0-240.0	17.0	38.0	56.0	32.0	4.0	10

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

V 1311 pressing pliers, hydraulic



Benefits

- Ergonomic handles
- Pressing head rotates by 180 degrees
- Automatic quick feed of pressing dies and mandrels
- Few tool parts, easy to change

Application range

- System 1311 for pressing copper connections of 10 - 400 mm²

Technical data



Note

Crimping profile: Hexagonal
Pressing force: 130 kN (13 t)

Design

- Without pressing dies and die holders

Included

- Complete unit, no external pump required
- Included: FV 1311 bag

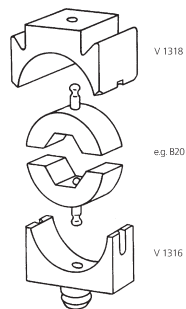
Article number	Article designation	For mm ²	Inner die holders	Outer die holders	Weight (kg)	Length (mm)	Pieces / PU
61795925	V 1311	10.0 - 400.0	V 1316	V 1318	4.9	590	1

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

Accessories

- Tube cable lugs KR/ KRT/ KRF refer to Main Catalogue page 927
- Die holders for system 1311 refer to Main Catalogue page 930
- Die holders for system 1311 refer to Main Catalogue page 930

Die holders for system 1311



Benefits

- Systems 1311 for pressing copper connections of 10 - 400 mm²

Design

- For the V1311 pliers, both the inner die holder V1316 and the outer die holder V1318 are needed.
- These must be ordered separately.

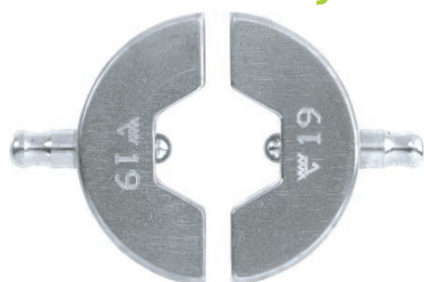
Suitable tools

- V 1311 pressing pliers, hydraulic refer to Main Catalogue page 930

Article number	Article designation	For crimping tools	Dies per PU	PU
61795941	V 1316 inner die-holder	V 1311	1	1
61795942	V 1318 outer die-holder	V 1311	1	1

Component composition: First specify the pressing dies. Note that die holders are not needed for all pressing dies (depending on the cross section of the tube cable lugs to be pressed)
Photographs are not to scale and do not represent detailed images of the respective products.

Die holders for system 1311



Application range

- Pressing dies for copper branch terminals are available upon request
- The 1311 system allows tube cable lugs (KR/ KRT/ KRF), butt connectors (KS/ KST/ KSF) and copper branch terminals to be pressed. Inserts are supplied in pairs.

Included

- KS/ KST/ KSF butt connectors are available upon request. Press inserts are delivered in pairs.

Article number	Article designation	For KR/ KS mm ²	For KRT/ KST mm ²	For KRF/ KSF mm ²	PU
Pressing dies - in pairs					
61795950	B7	10.0	10.0		1
61795951	B8	10.0		10.0	1
61795960	B8,5		16.0		1
61795970	B9			16.0	1
61795971	B10		25.0		1
61795972	B11			25.0	1
61795980	B12		35.0		1
61795981	B13			35.0	1
61795990	B14		50.0		1
61795991	B14,5			50.0	1
61796000	B16		70.0		1
61796001	B17			70.0	1
61796010	B18		95.0		1
61796021	B20			95.0	1
61796020	B19		120.0		1
61796030	B22		150.0	120.0	1
61796032	B25			150.0	1
61796031	B24		185.0		1
61796042	13B25			185.0	1
61796043	13B26		240.0		1
61796044	13B30		300.0	240.0	1
61796045	13B32		400.0	300.0	1
61796046	13B38			400.0	1

Component composition: First specify the pressing dies. Note that die holders are not needed for all pressing dies (depending on the cross section of the tube cable lugs to be pressed)
Photographs are not to scale and do not represent detailed images of the respective products.

Copper braid

Technical data


General

Minor differences are possible depending on the production batch


Note

Degree of coverage: 85 % at maximum opening


Material

Tinned-copper


Temperature range

Max. temperature: +120 °C (short-term)
-30 °C to +105 °C

Benefits

- EMC-compliant screening improves compatibility and protects the cable from interferences transmitted by other electric fields

Application range

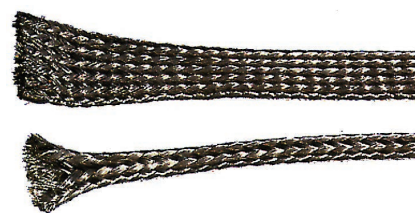
- EMC-compliant screening
- Can be used as earthing tape

Approvals



Design

- With these three available sizes, a diameter range from 1 to 20 mm can be covered.
- Variable diameter by tightening the braid.



Suitable tools

- SILVYN® EMC AS-CU Main Catalogue Page 814

Article number	Article designation	For mm ²	Approx. Ø range in mm	Number of wires x Ø (mm)	Weight (g)	Contents (m)
61721370	CU 14	1.32	1 - 4	24 x 7 x 0,10	17.0	100.0
61721380	CU 410	4.14	4 - 10	24 x 22 x 0,10	38.0	100.0
61721390	CU 1020	8.29	10 - 20	48 x 22 x 0,10	75.0	100.0

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

3M Scotch™ 1183 screening tape

Technical data


Caution

Adhesion (stripping force): 3.8 N/10 mm
Tear strength: 44 N/10 mm


Approvals

UL-recognised


Note

Contact resistance (in acc. with MIL-STD-202):
0.005 Ohms
Data sheet is available upon request


Info

Storage: good stability when stored in a cool and dry location (room temperature and approx. 50% relative humidity)


Colour delivered

Silver grey (RAL 7001)


Material

The 3M screening tape consists of a smooth tin-plated copper film as a lining with a conductive acrylic adhesive.


Temperature range

-10 °C to +80 °C

Benefits

- This electrically-conductive strip provides exceptional screening of electromagnetic fields.
- Uniform foil composition and its good conductivity to the substrate ensure low contact resistance, which is crucial for the degree of screening.
- Solderable and corrosion-resistant
- Acrylic adhesive that is resistant to solvents

Application range

- EMC-compliant screening

Product features

- This copper foil is plated with a thin layer of tin.
- This provides very good soldering characteristics and resistance to corrosion and oxidation.
- The tin-plating used is compatible with a wide range of base materials such as aluminium, lead and tin alloys, and galvanised steels.

Approvals



Design

- With these three available sizes, a diameter range from 1 to 20 mm can be covered.
- Variable diameter by tightening the braid.

Article number	Article designation	Width (mm)	Contents (m)
61721420	3M Scotch 1183 / 9x16,5	9	16.5
61721421	3M Scotch 1183 / 12x16,5	12	16.5
61721422	3M Scotch 1183 / 19x16,5	19	16.5
61721423	3M Scotch 1183 / 25x16,5	25	16.5

Scotch™ 1183 is a registered trademark of 3M

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

Accessories

- SKINTOP® MS-SC-M refer to Main Catalogue page 668
- SKINTOP® MS-SC refer to Main Catalogue page 719

Cable-Eater bunched cable conduit



Cable-Eater bunched cable conduit

Benefits

- The cable eater offers the ideal solution for bundling cable/wires.

Application range

- The main fields of application include the bundling and protection of cables in cable pre-assembly, the electrical industry and switch cabinet and plant construction.

Approvals



Included

- Suitable insertion tool
- SHR protective cable conduit

Technical data



Note
Halogen-free
Flame-retardant according to UL 94 HB



Colour delivered
White
Black



Material
Polypropylene (PP)
UV-resistant

Article number	Article description	Colour / bundle Ø (mm)	Inner Ø (mm)	Panel thickness (mm)	Processing tool/ installation tool	Contents (m)
61830300	SHR-08-PPB	black / 6 - 9	8.0	0.8	STKP 8	100
61830310	SHR-15-PPB	black / 10 - 16	15.0	0.8	STKP 15	50
61830320	SHR-20-PPB	black / 17 - 21	20.0	0.9	STKP 20	30
61830330	SHR-25-PPB	black / 21 - 28	25.0	1.0	STKP 25	20
61830302	SHR-08-PPW	white / 6 - 9	8.0	0.8	STKP 8	100
61830312	SHR-15-PPW	white / 10 - 16	15.0	0.8	STKP 15	50
61830322	SHR-20-PPW	white / 17 - 21	20.0	0.9	STKP 20	30
61830332	SHR-25-PPW	white / 21 - 28	25.0	1.0	STKP 25	20

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

Accessories

- Spare tool Cable - Eater refer to Main Catalogue page 952

Spare tool Cable - Eater



Application range

- Cable pull-in tool for SILVYN® RILL PA6 SINUS

Suitable tools

- SILVYN® RILL PA6 SINUS Main Catalogue Page 811

Article number	Article description	Pieces / PU
Cable Eater tool		
61830340	CAT - 08 - PP	1
61830350	CAT - 15 - PP	1
61830360	CAT - 20 - PP	1
61830370	CAT - 25 - PP	1

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

Benefits

- High resistance to bases, oils, greases, oil derivatives, solvents containing chlorine

Application range

- Basic Tie is a multipurpose cable tie for many applications.

Product features

- Flame retardancy:
UL 94 class V2.
- Water absorption: 2.5 %
(50 % relative humidity)

Approvals



Info

- The standard cable ties for many applications

Technical data



General

Dielectric strength:
50,000 volts/mm
For higher tensile strength



Note

Melting point: +256 °C



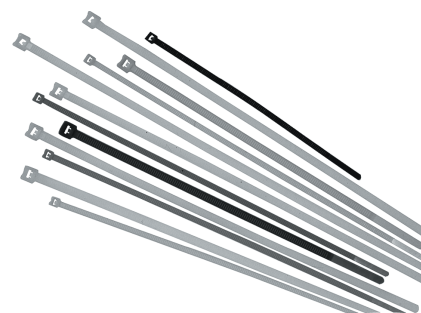
Material

Polyamide 6.6 - halogen-free



Temperature range

-40 °C to +85 °C
Max. temperature: +110 °C (short-term)



Note

- Not resistant to phenols
- Limited resistance to acids

Article number	Article designation	UL approval	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	PU
Natural colour						
61831001	Basic Tie 98x2.5 nat.	yes	98.0 x 2.5	1.0 - 21.0	80	1,000
61831003	Basic Tie 160x2.6 nat.	yes	160.0 x 2.6	1.0 - 40.0	80	1,000
61831004	Basic Tie 200x2.6 nat.	yes	200.0 x 2.6	1.0 - 52.0	80	1,000
61831005	Basic Tie 140x3.6 nat.	yes	140.0 x 3.6	2.0 - 35.0	130	1,000
61831006	Basic Tie 200x3.6 nat.	yes	200.0 x 3.6	2.0 - 50.0	130	1,000
61831007	Basic Tie 290x3.6 nat.	yes	290.0 x 3.6	2.0 - 80.0	130	500
61831013	Basic Tie 370x3.6 nat.	yes	370.0 x 3.6	2.0 - 103.0	130	100
61831009	Basic Tie 160x4.5 nat.	yes	160.0 x 4.5	2.5 - 40.0	220	1,000
61831011	Basic Tie 200x4.8 nat.	yes	200.0 x 4.8	3.0 - 50.0	220	1,000
61831014	Basic Tie 290x4.8 nat.	yes	290.0 x 4.8	3.5 - 79.0	220	100
61831016	Basic Tie 360x4.8 nat.	yes	360.0 x 4.8	3.5 - 103.0	220	100
61831020	Basic Tie 240x7.8 nat.	yes	240.0 x 7.8	3.5 - 63.0	540	100
61831021	Basic Tie 300x7.8 nat.	yes	300.0 x 7.8	4.0 - 80.0	540	100
61831022	Basic Tie 365x7.8 nat.	yes	365.0 x 7.8	8.0 - 100.0	540	100
61831023	Basic Tie 450x7.8 nat.	yes	450.0 x 7.8	35.0 - 130.0	540	100
61831024	Basic Tie 540x7.8 nat.	yes	540.0 x 7.8	35.0 - 158.0	540	100
61831025	Basic Tie 750x7.8 nat.	yes	750.0 x 7.8	35.0 - 200.0	540	100
61831026	Basic Tie 780x9.0 nat.	yes	780.0 x 9.0	32.0 - 233.0	700	100
UV-resistant - black						
61831041	Basic Tie 98x2.5 bk	yes	98.0 x 2.5	1.0 - 21.0	80	1,000
61831043	Basic Tie 160x2.6 bk	yes	160.0 x 2.6	1.0 - 40.0	80	1,000
61831044	Basic Tie 200x2.6 bk	yes	200.0 x 2.6	1.0 - 52.0	80	1,000
61831045	Basic Tie 140x3.6 bk	yes	140.0 x 3.6	2.0 - 35.0	130	1,000
61831046	Basic Tie 200x3.6 bk	yes	200.0 x 3.6	2.0 - 50.0	130	1,000
61831047	Basic Tie 290x3.6 bk	yes	290.0 x 3.6	2.0 - 80.0	130	500
61831053	Basic Tie 370x3.6 bk	yes	370.0 x 3.6	2.0 - 103.0	130	100
61831049	Basic Tie 160x4.5 bk	yes	160.0 x 4.5	2.5 - 40.0	220	1,000
61831051	Basic Tie 200x4.8 bk	yes	200.0 x 4.8	3.0 - 50.0	220	1,000
61831054	Basic Tie 290x4.8 bk	yes	290.0 x 4.8	3.5 - 79.0	220	100
61831056	Basic Tie 360x4.8 bk	yes	360.0 x 4.8	3.5 - 103.0	220	100
61831060	Basic Tie 240x7.8 bk	yes	240.0 x 7.8	3.5 - 63.0	540	100
61831061	Basic Tie 300x7.8 bk	yes	300.0 x 7.8	4.0 - 80.0	540	100
61831062	Basic Tie 365x7.8 bk	yes	365.0 x 7.8	8.0 - 100.0	540	100
61831063	Basic Tie 450x7.8 bk	yes	450.0 x 7.8	35.0 - 130.0	540	100
61831064	Basic Tie 540x7.8 bk	yes	540.0 x 7.8	35.0 - 158.0	540	100
61831065	Basic Tie 750x7.8 bk	yes	750.0 x 7.8	35.0 - 200.0	540	100
61831066	Basic Tie 780x9.0 bk	yes	780.0 x 9.0	32.0 - 233.0	700	100

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

Twist Tail™ cable tie



Twist Tail™ cable tie



Info

- No special tool needed
- Worked instantly

Benefits

- The round, flat, edge-free tie-heads allow assembly without getting caught and protect against injury and damage at adjacent cables and components.
- The cable tie can be gripped securely for easy tightening.
- In addition, the safety-grip tab prevents the tie from slipping out during assembly, and secures it before tightening by hand.

Application range

- Industrial cable ties for quick and secure assembly
- General purpose applications, indoors and outdoors

Approvals



Design

- Wrap the cable tie around a bundle of cables, bend the excess tail in two directions and twist. The tail breaks right off, leaving no sharp edges to scratch your hands or your cables.
- Available in 3 different lengths and 2 colours (white and UV-resistant black)

Technical data



General

Tensile strength: 133 N



Approvals

Flammability class: UL 94 V-2/polyamide 6.6



Note

Halogen-free
silicone-free

Colour delivered

Black (RAL 9005), UV-resistant
white

Material

Polyamide 6.6



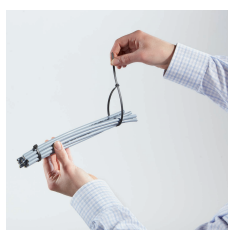
Temperature range

-40°C to +85°C

Article number	Article description	UL approval	Length (mm)	Max. bundle Ø (mm)	Pieces / PU
white					
61832007	TWIST TAIL TT-7-30-9-L	yes	181	45.0	50
61832009	TWIST TAIL TT-11-30-9-L	yes	282	76.0	50
61832011	TWIST TAIL TT-14-30-9-L	yes	358	102.0	50
Black (RAL 9005), UV-resistant					
61832008	TWIST TAIL TT-7-30-0-L	yes	181	45.0	50
61832010	TWIST TAIL TT-11-30-0-L	yes	282	76.0	50
61832012	TWIST TAIL TT-14-30-0-L	yes	358	102.0	50

TWIST TAIL™ is a registered trademark of Thomas & Betts

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



TY - FAST®- UV-resistant cable ties / TY - FAST® standard cable ties



TY - FAST® standard cable ties

Benefits

TY - FAST® standard cable ties

- TY-FAST® cable ties have low threading and high tying forces due to their integrated lock.
- The round, flat, edge-free tie-heads allow assembly without getting caught and protect against injury and damage at adjacent cables and components.
- The raised tie end and the “SURE-GRIP” gripping profile on both sides of the tie end offer improved grip.
- The cable tie can be gripped securely for easy tightening.
- In addition, the safety-grip tab prevents the tie from slipping out during assembly, and secures it before tightening by hand or with a tool.

Application range

TY - FAST® standard cable ties

- Cable ties for industrial applications
- Industrial cable ties for quick and secure assembly

TY - FAST®- UV-resistant cable ties

- Cable ties for industrial applications

Approvals



TY - FAST® standard cable ties

- File Number E49405, see table

Design

TY - FAST®- UV-resistant cable ties

- TY-FAST® cable ties are also available in UV-resistant and weather-resistant design, in black.
- The description for these cable ties are marked with “x”.

Suitable tools

- TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers refer to Main Catalogue page 962

Technical data



Approvals

TY - FAST® standard cable ties

Flammability class: UL 94 V-2/polyamide 6.6



Info

TY - FAST®- UV-resistant cable ties

In black colour UV-resistant and weatherproofed
Halogen-free
Colour delivered



Colour delivered

TY - FAST®- UV-resistant cable ties
Black



Material

TY - FAST® standard cable ties

Polyamide 6.6 - halogen-free

TY - FAST®- UV-resistant cable ties

Polyamide 6.6



Temperature range

-40 °C to +80 °C

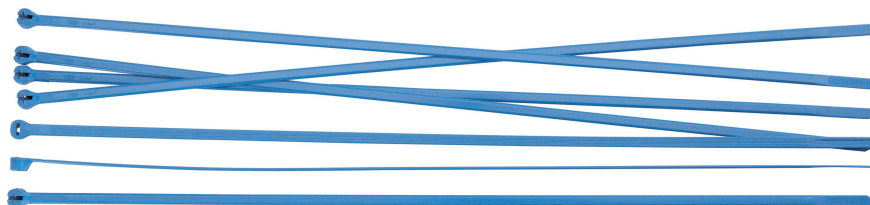
Article number	Article designation	UL approval	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	PU
Natural colour						
61810350	TY100-18	yes	111.0 x 2.4	25.0	80.0	1,000
61810360	TY125-18	yes	136.0 x 2.4	32.0	80.0	1,000
61810370	TY200-18	yes	197.0 x 2.4	50.0	80.0	1,000
61810380	TY125-40	yes	142.0 x 3.6	32.0	180.0	1,000
61810390	TY200-40	yes	205.0 x 3.6	50.0	180.0	1,000
61810400	TY300-40	yes	290.0 x 3.6	76.0	180.0	1,000
61810410	TY175-50	yes	186.0 x 4.7	44.0	220.0	1,000
61810420	TY300-50	yes	291.0 x 4.7	76.0	220.0	1,000
61810430	TY400-50	yes	368.0 x 4.7	102.0	220.0	1,000
61810440	TY200-120	no	219.0 x 7.6	50.0	540.0	500
61810450	TY400-120	yes	365.0 x 7.6	102.0	540.0	500
UV-resistant - black						
61810460	TY100-18x	yes	111.0 x 2.4	25.0	80.0	1,000
61810470	TY125-18x	yes	136.0 x 2.4	32.0	80.0	1,000
61810480	TY200-18x	yes	197.0 x 2.4	50.0	80.0	1,000
61810490	TY125-40x	yes	142.0 x 3.6	32.0	180.0	1,000
61810500	TY200-40x	yes	205.0 x 3.6	50.0	180.0	1,000
61810510	TY300-40x	yes	290.0 x 3.6	76.0	180.0	1,000
61810520	TY175-50x	yes	186.0 x 4.7	44.0	220.0	1,000
61810530	TY300-50x	yes	291.0 x 4.7	76.0	220.0	1,000
61810540	TY400-50x	yes	368.0 x 4.7	102.0	220.0	1,000
61810550	TY200-120x	no	219.0 x 7.6	50.0	540.0	500
61810560	TY400-120x	no	365.0 x 7.6	102.0	540.0	500

TY-FAST® is a registered trademark of Thomas & Betts

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

New

TY-RAP® detectable cable ties



TY-RAP® Detectable cable ties

■ Benefits

- Detectable cable ties with international FDA and HACCP hygiene monitoring regulations
- The round, flat, edge-free tie-heads allow assembly without getting caught and protect against injury and damage at adjacent cables and components.
- The cable tie can be gripped securely for easy tightening.
- In addition, the safety-grip tab prevents the tie from slipping out during assembly, and secures it before tightening by hand or with a tool.

■ Application range

- Food and beverage industry, especially for production and processing equipment of milk and meat products
- Applications with strong chemical influences
- Pharmaceutical production

■ Product features

- The new Ty-Rap® cable ties are designed with a unique compound that activate metal detectors, X-ray and visual recognition systems.

■ Approvals



■ Note

- Storage requirements: nylon (polyamide) is, by its nature, susceptible to external influences. Cable ties are mechanically moistened in order to ensure optimal use. As such, they must be stored in a cool, dry location and must not be exposed to direct sunlight. Cable ties are packed in plastic bags to retain moisture; these should remain closed until the cable ties are used.

■ Suitable tools

- TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers refer to Main Catalogue page 962

■ Technical data



Approvals

Flammability class: UL 94 HB/polypropylene
Flammability class: UL 94 V-2/polyamide 6.6



Colour delivered

Blue



Material

Polyamide 6.6 or polypropylene
Halogen-free and silicone-free



Temperature range

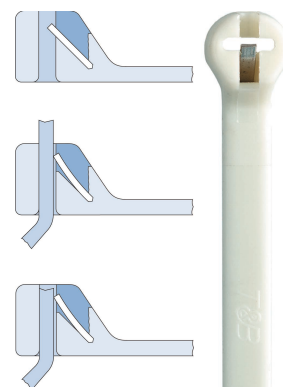
-40°C up to +85°C

Article number	Article description	UL approval	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	Pieces / PU
Detectable polyamide 6.6						
61723351	Cable tie TY-RAP TY523M-NDT	no	92 x 2	2.0 - 6.0	80	100
61723352	Cable tie TY-RAP TY525M-NDT	no	186 x 4	3.5 - 45.0	220	100
61723353	Cable tie TY-RAP TY528M-NDT	no	360 x 4	3.5 - 102.0	220	100
61723354	Cable tie TY-RAP TY527M-NDT	no	340 x 7	6.0 - 90.0	540	50
Detectable polypropylene						
61723355	Cable tie TY-RAP TY523M-PDT	no	92 x 2	2.0 - 16.0	50	100
61723356	Cable tie TY-RAP TY525M-PDT	no	186 x 4	3.5 - 45.0	130	100
61723357	Cable tie TY-RAP TY528M-PDT	no	360 x 4	3.5 - 102.0	130	100
61723358	Cable tie TY-RAP TY527M-PDT	no	340 x 7	6.0 - 90.0	270	50

TY-FAST® is a registered trademark of Thomas & Betts

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

TY- RAP® standard cable ties



TY- RAP® standard cable ties

Benefits

- The blade ensures secure and durable binding
- The high strength is constant even under harsh conditions: extreme temperature ranges, humidity and extreme cold.
- The lock is also resistant to shocks and vibrations.

Application range

- Good quality cable ties with steel blade

Product features

- The steel blade is fixed to the tie head and is made from corrosion-resistant, anti-magnetic steel (type 316).

Approvals



- File Number E49405, see table

Design

- Cable ties with steel blade
- Standard colour: natural

Included

- Items provided with the add-in "B" are supplied in a handy workbox, where the cable ties are arranged properly.
- The TY-RAP® is packed in a recyclable plastic bag.

Suitable tools

- TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers refer to Main Catalogue page 962

Technical data

- Note**
Steel blade: anti-magnetic steel 316
- Material**
Polyamide 6.6
Halogen-free
- Temperature range**
-40 °C to +80 °C

Article number	Article description	UL approval	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	Pieces / PU
TY-RAP® Standard						
61715000	TYB* 23 M	no	92.0 x 2.4	2.0 - 16.0	80.0	1,000
61716250	TY 232 M	yes	200.0 x 2.4	2.0 - 50.0	80.0	1,000
61716310	TY 234 M	yes	356.0 x 2.4	2.0 - 102.0	80.0	1,000
61715060	TYB* 24 M	no	140.0 x 3.6	2.0 - 29.0	180.0	1,000
61716370	TY 242 M	yes	208.0 x 3.6	2.0 - 50.0	180.0	1,000
61715180	TY 26 M	yes	281.0 x 3.6	2.0 - 76.0	180.0	1,000
61716430	TY 244 M	yes	368.0 x 3.6	2.0 - 103.0	180.0	1,000
61715120	TYB* 25 M	no	186.0 x 4.8	3.5 - 45.0	220.0	1,000
61716490	TY 253 M	yes	293.0 x 4.8	3.5 - 78.0	220.0	1,000
61715300	TY 28 M	yes	360.0 x 4.8	3.5 - 102.0	220.0	1,000
61716550	TY 272 M	yes	223.0 x 7.6	6.0 - 50.0	540.0	500
61715240	TY 27 M	yes	340.0 x 7.0	6.0 - 90.0	540.0	500
61715360	TY 29 M	yes	762.0 x 7.6	6.0 - 229.0	540.0	500

B = box, otherwise plastic bag

TY-RAP® is a registered trademark of Thomas & Betts

TY-RAP® Standard in other colours are available upon request (see description).

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

TY- RAP® heat-resistant cable ties



■ Benefits

- Contains all the advantages of TY-RAP®, with higher heat-resistance

■ Application range

- This temperature-resistant cable tie can be used in areas exposed to high temperatures such as electrical heating devices or heating installations.

■ Approvals



- File Number E49405, see table

■ Design

- Without pressing dies and die holders

■ Technical data



■ Approvals

Flammability class: UL 94 V-2/polyamide 6.6



■ Info

Halogen-free and silicone-free



■ Material

Heat-resistant polyamide 6.6



■ Temperature range

-40°C to +100°C

■ Suitable tools

- TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers refer to Main Catalogue page 962

Article number	Article description	UL approval	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	N) Pieces / PU
TY-RAP® heat-resistant						
61723470	TYH 23 M	yes	92.0 x 2.4	2.0 - 16.0	80.0	1,000
61723460	TYH 232 M	yes	200.0 x 2.4	2.0 - 50.0	80.0	1,000
61723440	TYH 24 M	yes	140.0 x 3.6	2.0 - 29.0	180.0	1,000
61723430	TYH 242 M	no	208.0 x 3.6	2.0 - 50.0	180.0	1,000
61723410	TYH 26 M	yes	281.0 x 3.6	2.0 - 76.0	180.0	1,000
61723420	TYH 25 M	yes	186.0 x 4.8	3.5 - 45.0	220.0	1,000
61723380	TYH 28 M	yes	360.0 x 4.8	3.5 - 102.0	220.0	1,000
61723390	TYH 272 M	no	223.0 x 7.6	6.0 - 50.0	540.0	500
61723400	TYH 27 M	yes	340.0 x 7.0	6.0 - 90.0	540.0	500
61723350	TYH 29 M	no	762.0 x 7.6	6.0 - 229.0	540.0	500

TY-RAP® is a registered trademark of Thomas & Betts

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

TY- RAP® weather-proof, UV-stabilised



■ Benefits

- Weather-resistant for harsh environmental conditions

■ Application range

- The TY-RAP® weather-resistant product is used outdoors for installation and maintenance of power plants.

■ Product features

- Heat and UV-resistant TY- RAP®

■ Approvals



- File Number E49405, see table



■ Info

- Good quality cable ties with steel blade

■ Technical data



■ Colour delivered

UV-resistant - black



■ Material

Polyamide 6.6 - halogen-free



■ Temperature range

-40°C to +85°C

Article number	Article description	UL approval	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	N) Pieces / PU
TY-RAP® weather-resistant						
61723010	TYB* 23 MX	no	92.0 x 2.4	2.0 - 16.0	80.0	1,000
61723110	TY 232 MX	no	200.0 x 2.4	2.0 - 50.0	80.0	1,000
61723120	TY 234 MX	no	356.0 x 2.4	2.0 - 102.0	80.0	1,000
61723020	TYB* 24 MX	no	140.0 x 3.6	2.0 - 29.0	180.0	1,000
61723130	TY 242 MX	yes	208.0 x 3.6	2.0 - 50.0	180.0	1,000
61723040	TY 26 MX	yes	281.0 x 3.6	2.0 - 76.0	180.0	1,000
61723140	TY 244 MX	no	368.0 x 3.6	2.0 - 103.0	180.0	1,000
61723030	TYB* 25 MX	no	186.0 x 4.8	3.5 - 45.0	220.0	1,000
61723150	TY 253 MX	no	293.0 x 4.8	3.5 - 78.0	220.0	1,000
61723060	TY 28 MX	yes	360.0 x 4.8	3.5 - 102.0	220.0	1,000
61723160	TY 272 MX	no	223.0 x 7.6	6.0 - 50.0	540.0	500
61723050	TY 27 MX	yes	340.0 x 7.0	6.0 - 90.0	540.0	500
61723070	TY 29 MX	no	762.0 x 7.6	6.0 - 229.0	540.0	500

TY-RAP® is a registered trademark of Thomas & Betts

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Appendix

Technical tables

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Type designations for telecommunications cables and fibre-optic cables

Fibre-optic cables



1. Basic type

A	Outdoor cable
AT	Outdoor cable, divisible
J	Indoor cable
J/A or U	Indoor/outdoor cable, universal cable

2. Fibres

B	Loose tube, unfilled
D	Loose tube, filled
V	Tight-buffered fibres

3. Design elements

F	Petroleum jelly filling
Q	Swelling tape

4. Further design elements

S	Metal element in cable core
---	-----------------------------

5. Sheath

2Y	PE sheath
11Y	PUR sheath
H	Halogen-free sheath
(ZM)	With metallic strain relief elements
(ZN)	With non-metallic strain relief elements
(ZN)2Y	PE sheath with non-metallic strain relief elements

6. Armouring

B	Armouring
B2Y	Armouring with PE casing
(BN)	Glass yarn armouring
(SG)	Steel sheath
(SR)	Corrugated steel sheath
(SR)2Y	Corrugated steel sheath with PE casing

7. Number of fibres

Number of fibres

8. Fibre type

E	Monomode fibre glass/glass (SM GOF)
G	Gradient fibre glass/glass (MM GOF)
K	Stepped fibre glass/plastic (PCF)
P	Polymer optical fibre/plastic (POF)

9. Core diameter/fibre sheath diameter

50/125	Multimode glass fibre
62,5/125	Multimode glass fibre
9/125	Monomode glass fibre
200/230	Plastic-coated glass fibre
980/1000	Polymer optical fibre

10. Category: fibre quality

OM3	For 50/125 OM3 multimode fibres
OM2	For 50/125 OM2 multimode fibres
OM1	For 62.5/125 OM1 multimode fibres
OS2	For 9/125 OS2 monomode fibres (G 652D)

EXAMPLE 1: A-DQ(ZN)(SR)2Y 12G 50/125 OM3

Outdoor cable with corrugated steel sheath, central loose tube, non-metallic strain relief made of glass yarn, 12 fibres, 50/125 µm OM3 multimode fibres

EXAMPLE 2: J-V2Y(ZN)11Y 2P 980/1000

Plastic fibre-optic cable, two-fibre (duplex), indoor cable with PE inner sheath, non-metallic strain relief, PUR outer sheath

Type designations for UNITRONIC® field bus



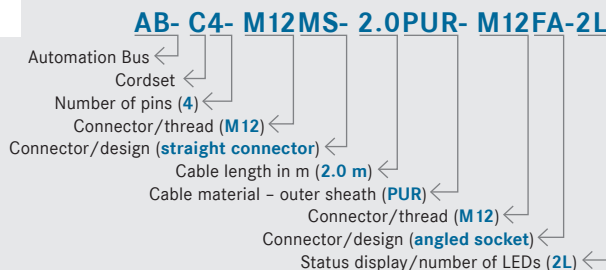
S/A cables

e.g. item no. 22260339

Connection on left

Cable

Connection on right



MS – straight connector

MA – angled connector

FS – straight socket

FA – angled socket

M8, M12, M16, M23 – thread

L – status display/LEDs

SH – screened version

VA – stainless steel knurl

M12Y – M12 Y connector

B – bridged

3-, 4-, 5-, 8-, .. number of pins

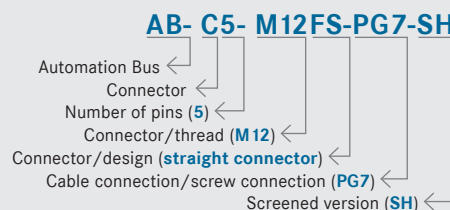
A, AD, B, BI, C, CI – valve connector type

S – valve connector with Z diode

SV – valve connector with varistor



Ready-made connector e.g. item no. 22260127



MS – straight connector

MA – angled connector

FS – straight socket

FA – angled socket

P – piercing connection

SH – screened version

M8, M12, M16, M23 – thread

3-, 4-, 5-, 8-, .. number of pins

PG7, PG9, PG11, PG13 – cable connection

F0.34 (fast connection, max. 0.34 mm² cond. cross-sec.)

F0.75 (fast connection, max. 0.75 mm² cond. cross-sec.)

M16-0.5 (M16 flush-type conn. with 0.5 m PUR strand)

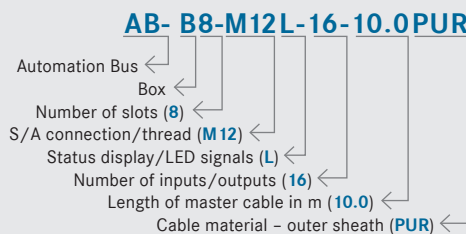
PG9-0.5 (PG9 flush-type conn. with 0.5 m PUR strand)

DSI – flush-type connector (rear wall mounting)

PO – flush-type connector (can be positioned)



S/A passive distributor box e.g. item no. 22260025



INFO: S/A box with double assignment → $\frac{(\text{number of inputs/outputs})}{(\text{number of slots})} = 2$

PUR – distributor box with perm. connected master cable (PUR)

C – distributor box with master cable conn. (pluggable screw connection)

M8L – distributor box with M8 slots and LED signals

M16 – distributor box with M16 master cable conn.

M12 – distributor box with M12 master cable conn.

Further abbreviations:

AB-PC – Automation Bus Power Cable

AB-PB – Automation Bus PROFIBUS

AB-DN – Automation Bus DeviceNet

AB-CAN – Automation Bus CAN

AB-ASI – Automation Bus AS-Interface

AB-ASI-J – AS-Interface distributor

DI – Digital Inputs

DO – Digital Outputs

R – Relay outputs



US dimension units for cables – comparison with metric dimensions

In North American markets, cable cross-sections are usually stated as AWG (American Wire Gauge) sizes or, for large cable cross-sections (above AWG 4/0), using the unit “kcmil”. You will find these units in the relevant standards for designing cables by current rating.

Multi-standard cables must comply with both the specifications of the metric system (in which the cross-section in mm² is stated as the nominal size) as well the requirements of the AWG system.

For this reason, both systems are compared below based on the nominal size.

Please note that exact correspondences between the two systems do not exist as the specifications of the two systems differ in terms of the cross-section and conductor resistance. The following table can be used to help you when selecting the correct nominal cross-section.

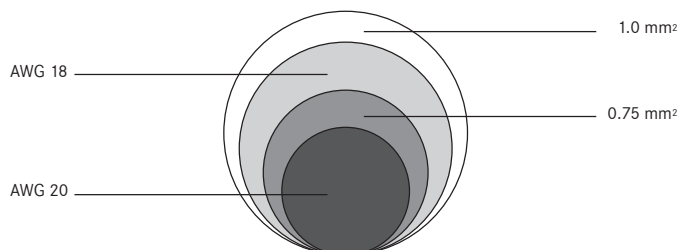
Standards required as part of project planning, such as UL1581 or IEC 60228 (VDE 0295), must be applied accordingly.

Please note that when selecting appropriate connecting elements such as conductor end sleeves, the **actual** conductor cross-section is decisive. This is stated on the relevant product page.

Column 1a	Column 1b	Column 2	Column 3	Column 4	Column 5a	Column 5b
North American cross-section required		Geometric conversion	Metric nominal cross-section that meets the electrical requirements	Metric nominal cross-section required	North American size that meets the electrical requirements	
AWG	kcmil	mm ²	mm ²	mm ²	AWG	kcmil
	750	380.03	400	400		800
	500	253.35	300	300		750
	450	228.02	240	240		500
	400	202.68				450
	350	177.35	185	185		400
	300	152.01				350
	250	126.68	150	150		300
4/0		107.22	120	120		250
3/0		85.01	95	95	4/0	
2/0		67.43	70	70	3/0	
1/0		53.49			2/0	
1		42.41	50	50	1/0	
2		33.62	35	35	1	
3		26.67			2	
4		21.15	25	25	3	
5		16.77			4	
6		13.30	16	16	5	
7		10.55			6	
8		8.37	10	10	7	

Column 1a	Column 1b	Column 2	Column 3	Column 4	Column 5a	Column 5b
North American cross-section required		Geometric conversion	Metric nominal cross-section that meets the electrical requirements	Metric nominal cross-section required	North American size that meets the electrical requirements	
AWG	kcmil	mm ²	mm ²	mm ²	AWG	kcmil
9		6.63			8	
10		5.26	6	6	9	
11		4.17			10	
12		3.31	4	4	11	
13		2.62			12	
14		2.08	2.5	2.5	13	
15		1.65			14	
16		1.31	1.5	1.5	15	
17		1.04			16	
18		0.82	1	1	17	
19		0.65	0.75	0.75	18	
20		0.52			19	
21		0.41	0.5	0.5	20	
22		0.33	0.34	0.34	21	
23		0.26			22	
24		0.20	0.25	0.25	23	
25		0.16			24	
26		0.13	0.14	0.14	25	

Principle of cross-section figures



EXAMPLE 1:

The electro-technical project planning requirements as per North-American standards stipulate that you require a cable of AWG 20.

The relevant product page in the catalogue does not list any cables with this AWG size. A size of AWG 20 is listed in the above table in column 1a. Column 3 lists the metric nominal cross-section that, as a minimum, meets the electrical requirements of size AWG 20. Thus, you will require a cable with a nominal cross-section of 0.75 mm².

EXAMPLE 2:

The electro-technical project planning requirements as per European standards stipulate that you require a cable of 0.75 mm².

The product page in the catalogue lists only AWG figures or large metric cross-sections. Nominal cross-section 0.75 mm² is listed in the above table in column 4. Column 5a lists the AWG size that, at a minimum, meets the electrical requirements of a nominal cross-section of 0.75 mm². Thus, you will require a cable with size AWG 18.



Laying guidelines for cables and wires

Cables must be selected in accordance with the laying and operating conditions. They must be protected against mechanical, thermal and chemical effects as well against moisture penetrating through the cable ends.

Insulated power cables must not be laid underground. Temporary covering of NSSHÖU rubber-sheathed cables or trailing cables with soil, sand or a similar material, e.g. on building sites, does not constitute underground installation.

Fasteners and fixtures must not cause any damage to fixed wires and cables. Where cables or wires running horizontally along walls or ceilings are fixed using clips, the following guidelines regarding clip spacing must be observed:

For non-reinforced cables and wires, 20 x outside diameter.

These spacing guidelines also apply when laying cables in conduits and racks. When laying cables vertically, the spacing between clips can be increased depending on the type of cable or clip.

When connecting flexible cables (e.g. ÖLFLEX® cables, UNITRONIC® cables) to portable power consumers, there must be no strain or thrust at the insertion points and the cables must be secured against twisting and kinking. Outer cable sheaths must not be damaged at the insertion points or by the strain relief devices. Standard version flexible PVC cables are not designed for outdoor use.

Flexible rubber-sheathed cables (e.g. ÖLFLEX® CRANE cables) are only suitable for permanent outdoor use if their outer sheath is made of a compound, generally based on polychloroprene (NEOPRENE®). Special cables must be deployed for permanent underwater use.

Thermal stress

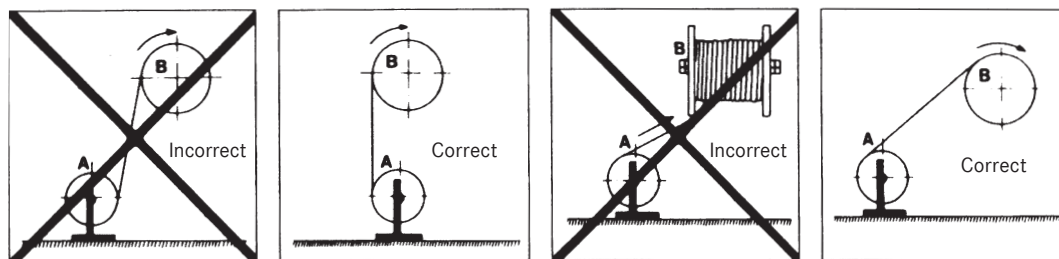
The temperature limits for the respective cable designs can be found in the technical data. The upper temperature limits must not be exceeded as a result of the cable heating up due to current heat and thermal environmental factors. The lower temperature limits denote the lowest permitted ambient temperature.

Tensile strain

Tensile strain on the conductor should be as low as possible. The following tensile strains for conductors must not be exceeded for cables.

- When laying and operating cables for portable equipment: 15 N per mm² conductor cross-section; this does not include screening, concentric conductors and divided protective conductors. In the case of cables that are subjected to dynamic stresses, e.g. in crane systems with high acceleration or power chains subject to frequent movement, appropriate measures must be taken, e.g. enlargement of the bending radius in individual cases. A shorter service life may be expected.
- Cables for static installation. When laying permanent cables, 50 N per mm² conductor cross-section.
- For fibre optic cables, BUS, LAN, industrial and Ethernet cables, the respective permitted strain must be observed. These values can be found in the product data sheets or are available on request.

For more information on this subject, see tables T3, T4 and T5.



Winding and unwinding cables



Power rating

Table A1. Current rating

Conductor cross-section area mm ²	Current rating single cable A
1.0	26
1.5	32
2.5	43
4	59
6	77
10	110
16	142
25	194
35	245
50	310
70	387
95	464
120	548
150	632
185	722
240	871
300	1000
400	1226

These rating are applicable to a single cable install in 'free air' with unrestricted ventilation.

They are based upon a 45°C ambient air temperature with a maximum conductor operating temperature of 120°C.

Table A2. Derating factors for other ambient temperature

Temperature °C	Factor K1
30	1.15
35	1.10
40	1.05
45	1.00
50	0.94
55	0.88
60	0.81
65	0.74
70	0.66
75	0.57
80	0.47
85	0.33

Table A3. Correction factors for other ambient temperatures

Temperature °C	Factor K1
90	0.78
105	0.89
120	1.00
140	1.12
150	1.18

Table A4. Multi conductors

No. of conductor	Factor K1
2~4	0.85
5~8	0.8
9~13	0.75
14~20	0.7



Short current

Table 1. Recommended short-circuit current ratings

Conductor cross-section area mm ²	Current A
1.0	122
1.5	183
2.5	305
4	488
6	732
10	1220
16	1950
25	3050
35	4270
50	6100
70	8540
95	11590
120	14640
150	18300
185	22570
240	29280
300	36600
400	48800

The tabulated values of short circuit current are applicable to standard wall cables to EN 50264 and are based upon a duration of current flow of 1 s.

It is assumed the cable has an initial conductor of 90°C and that the final conductor temperature will be limited to 200°C.

The currents for short-circuits of different durations can be calculated using the following formula:

$$I = \frac{K \times S}{t^{0.5}}$$

where

I = maximum permissible short circuit current (r.m.s.);

K = constant (= 122);

S = nominal cross sectional area of the conductor (mm²);

t = duration of short circuit (seconds) with a maximum of 5 s.