THE WORLD OF LAPP

Innovations 2019

LAPP

Legend for icons

INDUSTRIES

- Automation
- e-Mobility
- Food & Beverage
- Mechanical and Plant Engineering
- Oil & Gas
- Rail
- Solar Energy
- Wind Energy

PRODUCT CHARACTERISTICS

- Suitable for outdoor use
- Good chemical resistance
- Flame-retardant
- Wide clamping range
- Halogen-free
- Heat-resistant
- Cold-resistant
- Corrosion-resistant
- Maximum vibration protection
- Mechanical resistance
- Assembly time
- Low weight
- Oil-resistant
- Optimum strain relief
- Space requirement
- Power chain
- Clean room
- Robust
- Acid-resistant
- Reliability
- Integrated SKINTOP® cable gland
- Voltage
- Connector with standard housing unit
- Interference signals
- Temperature-resistant
- Torsion-resistant
- Torsion load
- UV-resistant
- Waterproof
- Variety of approval certifications

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

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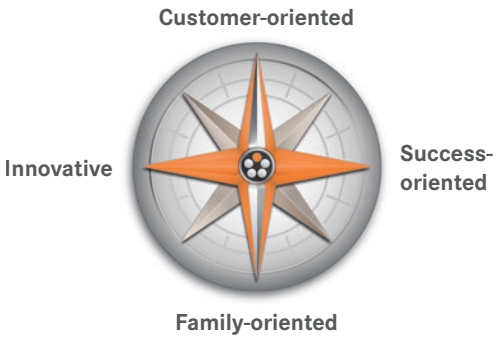
Andreas Lapp,
Matthias Lapp,
Ursula Ida Lapp,
Alexander Lapp,
Siegbert Lapp.

family

On course for success



Family business and global player

LAPP is both. The history of our company has been one of success and expansion ever since it was founded in 1959 by Ursula Ida and Oskar Lapp. It remains resolutely family owned to this day. We safeguard our success by staying close to our customers and markets, maintaining our innovative strength and brand quality, and being a reliable partner. We provide continuity, always guided in our thoughts and actions by our values.

Success built on family values

At LAPP, we maintain values that promote cooperation and enable relationships with employees, suppliers and customers based on partnership and trust. Good relations and mutual respect are key elements of our company culture and a central plank of company policy. We know that our successful business development of the last decades is down in particular to our 3,770 skilled and dedicated staff around the world, as well as the reliable partnership with our customers.

With 17 production facilities, over 40 sales companies and hundreds of dedicated consultants, we are always close to the individual needs and challenges of our customers all over the globe. We are constantly developing our products and system solutions, setting standards in safety, quality and functionality. This is why we are one of the world's leading manufacturers of integrated solutions and branded products in cable and connection technology. As our success story enters its third generation, we are aware of our duty to the future.

> www.lappkabel.com/company

innova-tions

Connecting the future

As happens so often with new innovations, it all started with a problem. It was the 1950s, a time when individual cores had to be painstakingly inserted into sleeving. Oskar Lapp took a close look at the conventional wires and cables of the day and was convinced that he could find a better solution. He thought, he tinkered, and eventually developed the world's first industrially produced control cable. This product became the bedrock on which LAPP built its reputation, not only as a manufacturer of cable and system solutions in Germany, but also as a global leader in innovation and quality.

Given the name ÖLFLEX®, Oskar Lapp's invention was groundbreaking in several ways. The oil-resistant and flexible control cable was delivered as a finished product, with multiple conductor cores stranded and surrounded by a protective sheath. Alongside this, the new cable simplified the allocation of the individual cores with a revolutionary idea that went on to become standard. Oskar Lapp introduced the system of colour coding for single cores, saving his customers an enormous amount of work.

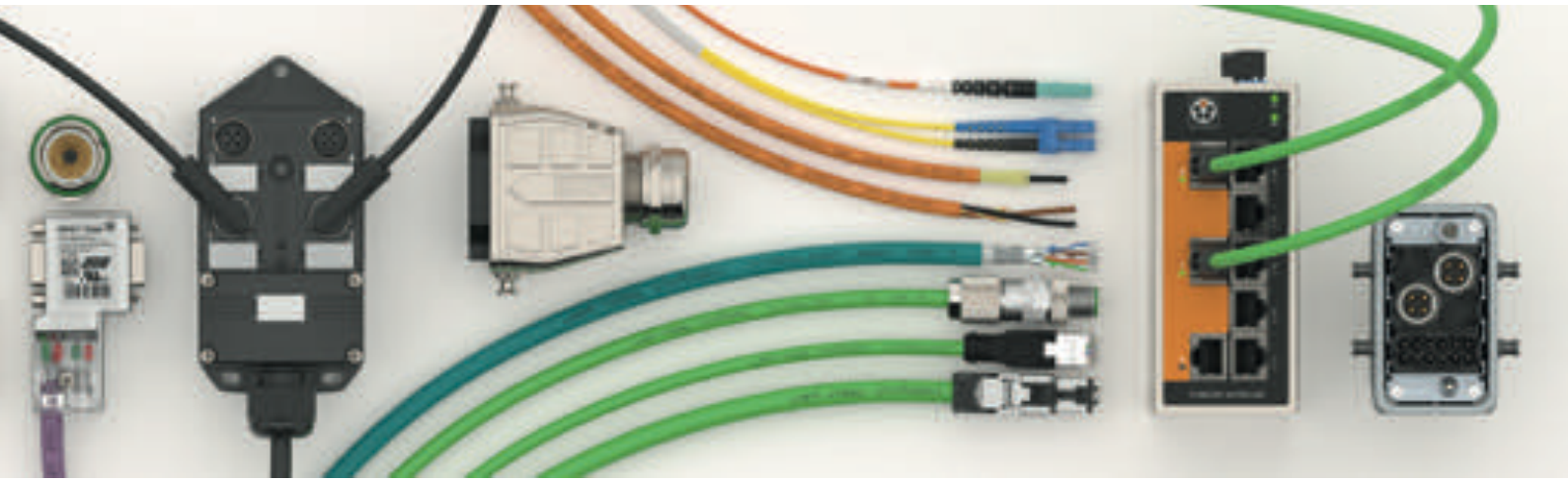
Innovations like these make life easier and generate value. Through his ingenuity, Oskar Lapp set the course for his business.

The perfect partner

History has shown that LAPP has always seen itself as a problem solver and a partner to which customers come for solutions. It has constantly strived to shape the world of tomorrow. As Oskar Lapp liked to say: **“Cables connect the present and the future”**.

Innovations have been part of the LAPP DNA since the very beginning. The data transmission systems UNITRONIC®, ETHERLINE® and HITRONIC®, for example, not only deliver value, but ensure peace of mind for the long term with cutting-edge technology developed by LAPP itself. From sensor/actuator connections, complex network structures with bus systems using UNITRONIC® cables, and robust cable components for Profinet, EtherCAT or EtherNet/IP systems with ETHERLINE® to secure and reliable data transmission at the speed of light with HITRONIC®, LAPP is the perfect partner for premium, tailor-made connections from A to B.

This is the result of decades of development work and constant innovation in the core business of cable and connection solutions. One example of this is the modular, easily configurable industrial connector EPIC®, which offers excellent robustness and safety during connection and disconnection. Another product, the SKINTOP® cable gland, perfectly sums up what makes LAPP solutions stand apart: a simple system that delivers perfect results effortlessly. In this case, the cable is automatically secured, centred and sealed with optimum strain relief.



Making solutions possible

SILVYN® is another example of a product designed with durability in mind. Being future ready is not just a matter of technology. Equally important is the longevity of the individual components. The protective cable conduit systems in the SILVYN® range maintain LAPP’s guaranteed quality against even extreme external chemical and mechanical loads. The SILVYN® CHAIN cable chains are designed to fulfil this function in dynamic applications. The FLEXIMARK® range of customised marking solutions are also made to last.

For LAPP, the challenge is not simply a matter of providing the right components. Instead, it is about developing products that help customers overcome challenges and that meet their needs. The LAPP Group’s search for innovations that solve problems is a global one. It maintains local partnerships on the ground and delivers a service that keeps its promises wherever the customer is. It is this combination of product and service that helps LAPP stand apart.

The quality of the goals determines the quality of the future. Oskar Lapp kept his eye on both, and became one of history’s great innovators.

ÖLFLEX® DC 100

Colour-coded cable for the power supply of plants with DC grids

Info

- Designed for DC applications in industrial environment with color code acc. EN 60445
- Further products for DC grids on demand:
  - ÖLFLEX® DC SERVO 700 for drive engineering
  - ÖLFLEX® DC CHAIN 800 for power chains

Benefits

- Specially constructed for the long term operation with DC voltage up to 0,9 / 1,8 kV
- Suitable for the construction of energy efficient DC grids in industrial plants

Application range

- Plant engineering
  Industrial machinery
  Heating and air-conditioning systems
  Power stations
  Stage applications
- For plants where power is supplied by a direct current network
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load

Product features

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

Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation: special PVC
- Core colors: red (L+), white (L-), green-yellow
- PVC outer sheath, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

Core identification code
red, white, green-yellow

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

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

Nominal voltage
DC (core-ground): max. 0,9 kV
DC (core-core): max. 1,8 kV

Test voltage
4000 V

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

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

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® DC 100				
11101106	3 G 1.5	8.7	43	134.2
11101107	3 G 2.5	10.0	72	188.2
11101108	3 G 4.0	11.4	115	263.4
11101109	3 G 6.0	12.6	173	346.2
11101110	3 G 10.0	15.9	288	584.4
11101111	3 G 16.0	18.3	461	823.8
11101113	3 G 25.0	23.0	720	1071
11101114	3 G 35.0	25.6	1008	1684
11101115	3 G 50,0	31,0	1440	2050
11101116	3 G 70,0	35,3	2016	2780
11101117	3 G 95,0	41,3	2736	3710
11101118	3 G 120,0	47,6	3456	4845
11101119	3 G 150,0	51,5	4320	5840
11101120	3 G 185,0	56,4	5328	7075

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

Accessories

- KNIPEX Cable shear refer to main catalogue 2018/19
- EASY STRIP stripping and cutting tool refer to main catalogue 2018/19
- STAR STRIP stripping tool refer to main catalogue 2018/19

ÖLFLEX® CLASSIC 115 CY BK

Screened PVC control cable with small outer diameter and black outer sheath

Info

- With black outer sheath, UV-resistant
- Thin and light, without inner sheath
- EMC-compliant

Benefits

- Suitable for outdoor applications
- Space-saving installation due to small cable diameters

Application range

- Measurement and control technology
- Plant engineering
  Industrial machinery
  Heating and air-conditioning systems
- Conveyor and transport systems
- Suitable for outdoor applications
- In EMC-sensitive environments (electromagnetic compatibility)

Product features

- UV and weather-resistant according to ISO 4892-2
- Flame-retardant according IEC 60332-1-2
- Good chemical resistance, see catalogue appendix T1
- High degree of screening
  low transfer impedance
  (max. 250 Ω/km at 30 MHz)

Norm references / Approvals

- Based on EN 50525-2-51

Product Make-up

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- Cores twisted in layers
- Plastic foil wrapping
- Tinned-copper braiding
- PVC outer sheath, black

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black with white numbers acc. to VDE 0293-1

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

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

Nominal voltage
U0/U: 300/500 V

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

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

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

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 115 CY BK				
1136510	2 X0.5	5.8	36	54
1136511	3 G0.5	6.1	43	63
1136512	3 X0.5	6.1	43	63
1136513	4 G0.5	6.5	49	71
1136514	4 X0.5	6.5	49	71
1136515	5 G0.5	7.0	57	86
1136516	5 X0.5	7.0	57	86
1136517	7 G0.5	7.5	69	105
1136518	7 X0.5	7.5	69	105
1136519	12 G0.5	9.9	104	163
1136520	12 X0.5	9.9	104	163
1136521	18 G0.5	11.5	141	226
1136522	25 G0.5	13.4	211	350
1136523	2 X0.75	6.2	43	59
1136110	3 G0.75	6.5	52	76
1136525	3 X0.75	6.5	52	76
1136111	4 G0.75	7.0	61	91
1136527	4 X0.75	7.0	61	91
1136113	5 G0.75	7.7	72	100
1136529	5 X0.75	7.7	72	100
1136114	7 G0.75	8.3	89	127
1136531	7 X0.75	8.3	89	127
1136115	12 G0.75	10.9	138	232
1136533	18 G0.75	12.7	211	292
1136534	25 G0.75	14.8	280	435
1136535	2 X1.0	6.5	51	71
1136536	3 G1.0	6.8	62	86
1136537	3 X1.0	6.8	62	86
1136538	4 G1.0	7.3	74	98
1136539	4 X1.0	7.3	74	98
1136540	5 G1.0	8.1	88	121
1136541	5 X1.0	8.1	88	121

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
1136542	7 G1.0	8.8	112	147
1136543	7 X1.0	8.8	112	147
1136544	12 G1.0	11.5	185	249
1136545	18 G1.0	13.9	268	364
1136546	25 G1.0	15.9	354	486
1136547	2 X1.5	7.1	65	86
1136548	3 G1.5	7.5	82	112
1136549	3 X1.5	7.5	82	112
1136550	4 G1.5	8.2	100	135
1136551	4 X1.5	8.2	100	135
1136552	5 G1.5	8.9	119	148
1136553	5 X1.5	8.9	119	148
1136554	7 G1.5	9.9	154	192
1136555	7 X1.5	9.9	154	192
1136556	12 G1.5	13.0	268	332
1136557	18 G1.5	15.6	373	484
1136558	25 G1.5	17.9	530	734
1136559	34 G1.5	20.8	683	944
1136560	3 G2.5	8.9	118	151
1136561	4 G2.5	9.9	147	188
1136562	5 G2.5	11.0	176	224
1136563	7 G2.5	11.9	253	294
1136564	12 G2.5	16.0	355	521
1136565	18 G2.5	19.0	569	740
1136566	4 G4.0	11.6	248	287
1136567	4 G6.0	14.2	343	424
1136568	4 G10.0	17.2	495	637
1136569	5 G10.0	19.5	592	824
1136570	4 G16.0	20.2	800	1050
1136571	5 G16.0	22.6	895	1285
1136572	4 G25.0	25.1	1075	1413
1136573	4 G35.0	28.0	1576	1867

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

Similar products

- ÖLFLEX® ROBUST 215 C refer to main catalogue 2018/19
- ÖLFLEX® CLASSIC 110 CY BLACK 0,6/1 kV refer to main catalogue 2018/19

Accessories

- SKINTOP® BRUSH ADD-ON refer to main catalogue 2018/19
- 3M Scotch™ 1183 screening tape refer to main catalogue 2018/19
- SKINTOP® MS-M BRUSH refer to main catalogue 2018/19

ÖLFLEX® CLASSIC 128 H BK 0,6/1 kV

Cost-effective halogen-free control cable with improved fire characteristics, 0,6/1kV

Info

- For space-saving and cost-effective installation
- For use within public buildings and industrial plants
- UV and weather-resistant according to ISO 4892-2

Benefits

- Space-saving installation due to small cable diameters
- Easy installation due to flexible design

Application range

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

Product features

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

Norm references / Approvals

- Based on EN 50525-3-11

Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Outer sheath made of special halogen-free coumpound, black

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

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

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

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

Nominal voltage
U0/U: 600/1000 V

Test voltage
4000 V

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

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

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 128 H BK 0,6/1 kV				
1123520	2 X 1.0	7.4	19.2	76
1123521	3 G 1.0	7.8	28.8	101
1123522	4 G 1.0	8.4	38.4	120
1123523	5 G 1.0	9.2	48	143
1123524	7 G 1.0	9.9	67.2	179
1123525	12 G 1.0	12.8	115.2	283
1123528	2 X 1.5	8.4	28.8	112
1123529	3 G 1.5	8.9	43.2	135
1123530	4 G 1.5	9.6	57.6	163
1123531	5 G 1.5	10.5	72	196
1123532	7 G 1.5	11.4	100.8	253
1123533	12 G 1.5	15.1	172.8	396
1123534	18 G 1.5	18.0	259.2	589

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
1123535	25 G 1.5	21.1	360	801
1123537	3 G 2.5	10.1	72	189
1123538	4 G 2.5	11.0	96	232
1123539	5 G 2.5	12.1	120	279
1123541	12 G 2.5	17.9	288	603
1123544	3 G 4.0	11.4	115.2	260
1123545	4 G 4.0	12.5	153.6	322
1123546	5 G 4.0	13.7	192	387
1123548	4 G 6.0	13.9	230.4	431
1123549	5 G 6.0	15.8	288	533
1123550	4 G 10.0	17.9	384	734
1123551	4 G 16.0	20.7	614.4	1080
1123552	5 G 16.0	23.0	768	1303
1123553	4 G 25.0	25.2	960	1617

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

Similar products

- ÖLFLEX® CLASSIC 130 H BK 0,6/1 kV refer to main catalogue 2018/19

Accessories

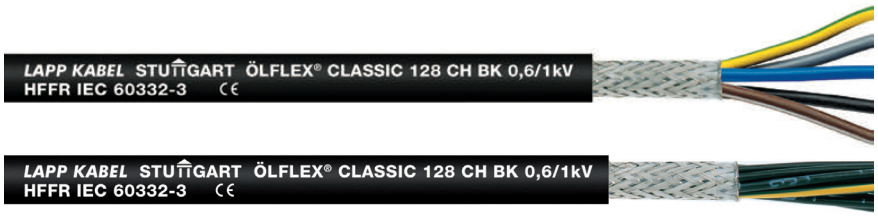
- SKINTOP® ST-HF-M refer to page 23

ÖLFLEX® CLASSIC 128 CH BK 0,6/1 kV

Cost-effective halogen-free control cable with improved fire characteristics, 0,6/1kV, with screen

Info

- For space-saving and cost-effective installation
- For use within public buildings and industrial plants
- EMC/Screened



Benefits

- Easy installation due to flexible design
- Space-saving installation due to small cable diameters

Application range

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

Product features

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

Norm references / Approvals

- Based on EN 50525-3-11

Product Make-up

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

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

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

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

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

Nominal voltage
U0/U: 600/1000 V

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

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

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

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 128 CH BK 0,6/1 kV				
1123557	2 X 1.0	8.2	49.6	107
1123558	3 G 1.0	8.6	62	129
1123559	4 G 1.0	9.2	75	153
1123560	5 G 1.0	10.0	90	181
1123561	7 G 1.0	10.7	112.1	220
1123562	12 G 1.0	14.0	176.5	343
1123564	25 G 1.0	19.0	353.3	667
1123565	2 X 1.5	9.2	65.4	135
1123566	3 G 1.5	9.7	81.8	164
1123567	4 G 1.5	10.4	101	199
1123568	5 G 1.5	11.3	120.4	236
1123569	7 G 1.5	12.2	154.3	292
1123570	12 G 1.5	16.3	271.1	498

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
1123571	18 G 1.5	19.4	373.8	700
1123573	2 X 2.5	10.4	91.4	176
1123574	3 G 2.5	10.9	117.2	218
1123575	4 G 2.5	11.8	147.1	268
1123576	5 G 2.5	12.9	177.3	322
1123577	7 G 2.5	14.4	231.6	411
1123578	12 G 2.5	19.3	402.1	704
1123579	18 G 2.5	23.0	607.3	1058
1123580	25 G 2.5	26.8	847.4	1449
1123582	4 G 4.0	13.5	212	357
1123583	5 G 4.0	14.9	255.8	434
1123584	3 G 6.0	13.7	233.6	372
1123585	4 G 6.0	15.1	295.1	472
1123586	5 G 6.0	16.8	390.1	611

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

Similar products

- ÖLFLEX® CLASSIC 135 CH BK 0,6/1 kV refer to main catalogue 2018/19

Accessories

- SKINTOP® BRUSH ADD-ON refer to main catalogue 2018/19
- SKINTOP® MS-HF-M BRUSH refer to main catalogue 2018/19
- SKINTOP® MS-M BRUSH refer to main catalogue 2018/19

ÖLFLEX® SERVO 2XSLCH-JB

EMC-optimised motor cable, low-capacitance, double screened and halogen-free with improved fire behaviour

Info

- EMC-optimised design
- Halogen-free and highly flame-retardant
- 3+3 symmetry reduces common-mode interference effects and bearing currents

Benefits

- EMC-compliant installation of power drive systems conforming to EN 61800-3
- High power transmission for large drives
- Low capacitance design enables longer cable connection between frequency converter and motor
- Symmetrical 3+3 Version supports the reduction of damaging bearing currents
- Reduction of flame propagation, density and toxicity of smoke gases in event of fire

Application range

- Connecting cable between frequency converter and motor
- In dry, damp or wet interiors
- Paper industry, automotive industry
- Food production and packaging machinery
- Machine tools

Product features

- Low-capacitance design
- Fire behaviour:
  - Flame-retardant (IEC 60332-1-2)
  - Halogen-free (IEC 60754-1)
  - No corrosive gases (IEC 60754-2)
  - Low smoke density (IEC 61034-2)
  - Low toxicity (EN 50305)
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)

Norm references / Approvals

- Based on VDE 0276, 0250, 0207

Product Make-up

- Fine-wire, bare copper conductor
- Core insulation: XLPE
- Cores twisted concentrically (symmetrically splitted protective conductor of 3+3 version is gusset-filling divided between the power cores)
- Screening: wrapping of laminated aluminium foil in combination with tinned copper braiding
- Outer sheath: Halogen-free special compound, colour black (RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

Core identification code
Colours according to HD 308 S2
VDE 0293-308

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

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

Nominal voltage
U0/U: 600/1000 V

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

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor
Protective conductor of 3+3 version is gusset-filling divided between power cores

Temperature range
Flexing: -15°C to +90°C
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO 2XSLCH-JB / 4-core version				
1133500	4 G 1.5	10,9	95	230
1133501	4 G 2.5	11,8	150	300
1133502	4 G 4.0	14,1	235	485
1133503	4 G 6.0	15,5	320	630
1133504	4 G 10.0	18,2	533	860
1133505	4 G 16.0	20,6	789	1290
1133506	4 G 25.0	24,9	1236	1860
1133507	4 G 35.0	27,9	1662	2610
1133508	4 G 50.0	33,9	2345	2950
1133509	4 G 70.0	38,9	3196	3950
1133510	4 G 95.0	44,2	4316	5300
1133511	4 G 120.0	51,3	5435	6600
1133512	4 G 150.0	55,5	6394	7043
1133513	4 G 185.0	60,5	7639	8384

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO 2XSLCH-JB / 3+3 core version				
1133514	3 X 1,5 + 3 G 0,25	10,9	88	140
1133515	3 X 2,5 + 3 G 0,5	11,7	144	220
1133516	3 X 4 + 3 G 0,75	13.0	224	323
1133517	3 X 6 + 3 G 1	14,3	276	420
1133518	3 X 10 + 3 G 1,5	16,7	491	615
1133519	3 X 16 + 3 G 2,5	18,9	723	819
1133520	3 X 25 + 3 G 4	22,5	1136	1325
1133521	3 X 35 + 3 G 6	25,5	1535	1718
1133522	3 X 50 + 3 G 10	30,9	2156	2399
1133523	3 X 70 + 3 G 10	35,2	2871	3056
1133524	3 X 95 + 3 G 16	39,9	3953	4162
1133525	3 X 120 + 3 G 16	46,1	4836	5074
1133526	3 X 150 + 3 G 25	50.0	5412	6128
1133527	3 X 185 + 3 G 35	54,5	7041	7500
1133528	3 X 240 + 3 G 50	62,9	8986	9770

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

Similar products

- ÖLFLEX® SERVO 9YSLCY-JB refer to main catalogue 2018/19
- ÖLFLEX® SERVO 2YSLCY-JB refer to main catalogue 2018/19

Accessories

- SKINTOP® BRUSH ADD-ON refer to main catalogue 2018/19
- SKINTOP® MS-SC-M refer to main catalogue 2018/19
- SKINTOP® MS-M BRUSH refer to main catalogue 2018/19

ÖLFLEX® SERVO FD 7TCE

Highly flexible, low capacitive servo motor cable with TC-ER (UL) or c(UL)-Listing for North America

Info

- Core Line Performance - Medium to increased travel lengths or acceleration
- Wide application range (NFPA 70/NEC)/ compliance with NFPA 79 for industrial machinery
- Low-capacitance design

Benefits

- Multi-standard certification offers universal application range, reduces part varieties and saves costs
- TC-ER and Flexible Motor Supply Cable listings enable open wiring on cable trays as well as the static or highly flexible usage for industrial machines with the same cable
- Cost-saving, easy installation due to omission of closed raceways (suitable for open wiring)
- Low capacitance design enables longer cable connection between frequency converter and motor
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Ideal for export-oriented machinery and equipment manufacturers thanks to high normative acceptance by the North American NEC (National Electrical Code)

Application range

- Connecting cable between servo controller and motor
- In power chains or moving machine parts
- Static open wiring on and between cable tray an industrial machine acc. NEC
- Industrial machinery and machine tools
- Linear robots, automated handling equipment
- Assembly lines, production lines, in all kinds of machines

Product features

- Oil-resistant according to UL OIL RES I & II
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- -40°C Cold Bend; -25°C Cold Impact; 90°C Wet or Dry
- Sunlight Resistant
- Direct Burial (according US standard)
- Low capacitance

Norm references / Approvals

- UL TC-ER (exposed run) per UL 1277
- Flexible Motor Supply Cable per UL 2277
- Class 1 Division 2 per NEC Article 501
- C(UL) CIC FT4 (18AWG - 14AWG); cRU AWM I/II A/B FT4
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper
- Core insulation: EPR compound
- Individual design depending on the item: power cores without or with one or two individually screened control core pairs twisted together in short lay lengths
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath: Specially formulated thermoplastic elastomer (TPE), orange

Technical data

Classification ETIM 5/6
ETIM 5.0 Class-ID: EC000057
ETIM 5.0 Class-Description: Low voltage power cable

Core identification code
Power cores: black with marking U/ L1/C/L+; V/L2; W/L3/D /L-; GN/YE protective conductor
Optional designs with
one pair of control cores: black; white
Two pairs of control cores: black with white numbers: 5, 6, 7, 8

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

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

Minimum bending radius
Flexing: up from 7.5 x outer diameter
Fixed installation: 5 x outer diameter

Nominal voltage
UL TC: 600V
UL Flexible Motor Supply: 1000V
c(UL) CIC/TC: 600V
cRU AWM: 1000V
IEC U0/U: 600/1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 2 kV

Protective conductor
G = with GN-YE protective conductor

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

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

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO FD 7TCE				
700750	4 G 1.5	10.2	90,8	174
700751	4 G 2.5	11.4	141,4	230
700752	4 G 4.0	13.1	200,9	319
700753	4 G 6.0	15.0	282,8	431
700754	4 G 1,5 + (2 x 1,5)	12.7	144,4	259
700755	4 G 2,5 + (2 x 1,5)	13.8	199,4	356
700756	4 G 4 + (2 x 1,5)	16.1	273,8	447
700757	4 G 6 + (2 x 1,5)	17.1	345,3	537
700758	4 G 1 + 2 x (2 x 1,0)	13.3	151,8	280
700759	4 G 1,5 + 2 x (2 x 1,0)	14.8	190,5	355
700760	4 G 2,5 + 2 x (2 x 1,0)	15.9	277,7	410
700761	4 G 4 + (2 x 1,0) + (2 x 1,5)	17.9	318,5	525
700762	4 G 6 + (2 x 1,0) + (2 x 1,5)	18.8	389,9	613

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Kupferpreisbasis: EUR 150 / 100 kg; Zur Anwendung und Definition von ‚Metallpreisbasis' und ‚Metallzahl' siehe Kataloganhang T17
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- Circular connectors refer to main catalogue 2018/19
- EMC refer to main catalogue 2018/19

NA2XS(F)2Y

Longitudinally water-tight PE medium voltage cable with aluminiom conductor

Info

- 3 voltage classes: 6/10 kV, 12/20 kV, 18/30 kV
- With solid aluminium conductor

Application range

- Power and control cable for fixed installation in the following applications:
- In water, in ground, outdoors and indoors
- In cable trays for power stations, industry, and distribution networks
- Also suitable for applications where longitudinal water propagation inside the cable should be avoided.
- Burial without additional, suitable underground protection according to HD 620/VDE 0276-620 - Part 10-C (point 4): normal minimum installation depth 0.6 m, but at least 0.8 m under roads

Product features

- Suitable for installation or operation under high mechanical stress due to the PE-sheath
- Current rating according to HD 620/ VDE 0276-620, Part 10-C, Table 7 (buried at +20 °C ground temperature according to HD 620/VDE 0276-620, Part 10-C, point 5) for routing underground and Table 8 (in the air at an air temperature of +30 °C according to HD 620/ VDE 0276-620, Part 10-C, point 5) when used outdoors; but always taking into consideration corrections/reductions to the current rating that may be necessary according to VDE 0298-4, and VDE 0298-4 (also refer to the catalogue appendix T12) for installation in and on buildings

Norm references / Approvals

- HD 620/ VDE 0276-620

Product Make-up

- Aluminium conductor
- Abbreviation „rm“:
  r = round conductor form;
  m = multi-wire conductor
- Core insulation: Cross-linked Polyethylen (XLPE)
- Screen made of copper wires with one or two copper bond counter spiral
- Longitudinally water-tight wrapping
- Outer sheath: PE, black

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

Conductor stranding
Multi-wire

Minimum bending radius
Fixed installation: 15 x outer diameter

Nominal voltage
U_0/U: 6/10 kV, 12/20 kV, 18/30 kV

Test voltage
Depending on nominal voltage:
6/10 kV: 15 kV
12/20 kV: 30 kV
18/30 kV: 45 kV

Temperature range
During installation: -5°C to +50°C
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm² per conductor	Copper index (kg/km)	Alu index (kg/km)	Outer diameter [mm]	Weight (kg/km)
6/10 kV					
1552026	1 x 50 RM/16	182	145	25.0	617
38107610	1 x 70 RM/16	182	203	27.0	709
38107611	1 x 95 RM/16	182	276	28.0	805
38107612	1 x 120 RM/16	182	348	30.0	901
38801523	1 x 150 RM/25	283	435	31.0	1082
38106386	1 x 185 RM/25	283	537	33.0	1216
38801932	1 x 240 RM/25	283	696	35.0	1415
38802344	1 x 300 RM/25	283	870	37.0	1620
38107614	1 x 400 RM/35	394	1160	40.0	2024
38107615	1 x 400 RM/50	566	1160	40.0	2024
38107616	1 x 500 RM/35	394	1450	43.0	2369
38107617	1 x 630 RM/35	394	1827	47.0	2817
38107618	1 x 800 RM/35	394	2320	51.0	3381
38107619	1 x 1000 RM/35	394	2900	56.0	4100
12/20 kV					
38107620	1 x 50 RM/16	182	145	29.0	768
38000155	1 x 70 RM/16	182	203	31.0	868
38000184	1 x 95 RM/16	182	276	32.0	975
1552028	1 x 120 RM/16	182	348	34.0	1079
38107621	1 x 150 RM/16	182	435	35.0	1268
3037568	1 x 150 RM/25	283	435	35.0	1268
1552029	1 x 185 RM /25	283	537	37.0	1413
38801987	1 x 240 RM/25	283	696	39.0	626
38801756	1 x 300 RM/25	283	870	41.0	1845
38801724	1 x 400 RM/35	394	1160	44.0	2226
38801988	1 x 500 RM/35	394	1450	47.0	2599
38801986	1 x 630 RM/35	394	1827	51.0	3093
1552065	1 x 800 RM/35	394	2320	56.0	3727
38103208	1 x 100 RM/35	394	2900	61.0	4450

Article number	Number of cores and mm² per conductor	Copper index (kg/km)	Alu index (kg/km)	Outer diameter [mm]	Weight (kg/km)
18/30 kV					
38000116	1 x 50 RM/16	182	145	34.0	981
38107622	1 x 80 RM/16	182	203	36.0	1085
38000476	1 x 95 RM/16	182	276	37.0	1211
38107623	1 x 95 RM/35	394	396	37.0	1211
38106295	1 x 120 RM/16	182	348	39.0	1325
38105412	1 x 150 RM/25	283	435	40.0	1524
38106387	1 x 185 RM/25	283	537	42.0	1681
38105413	1 x 300 RM/25	283	870	46.0	2150
1552033	1 x 500 RM/35	394	1160	49.0	2550
1552045	1 x 500 RM/35	394	1450	52.0	2959
1552030	1 x 630 RM/35	394	1827	56.0	3498
38106514	1 x 800 RM/35	394	2320	61.0	4152

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Aluminium price basis: excludes aluminium. Refer to catalogue appendix T17 for the application and definition of „Metal price basis“ and „Metal index“.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories
- Cable lugs and other connectors made of aluminium or bi-metal Al-Cu are available upon request

NA2XS(FL)2Y

Longitudinally and transversely water-tight PE medium voltage cable with aluminiom conductor

Info
- 3 voltage classes: 6/10 kV, 12/20 kV, 18/30 kV
- With solid aluminium conductor

Application range
- Power and control cable for fixed installation in the following applications:
- In water, in ground, outdoors and indoors
- In cable trays for power stations, industry, and distribution networks
- Also suitable for applications where longitudinal and transversal water propagation inside the cable should be avoided.
- Burial without additional, suitable underground protection according to HD 620/VDE 0276-620 - Part 10-C (point 4): normal minimum installation depth 0.6 m, but at least 0.8 m under roads

Product features
- Suitable for installation or operation under high mechanical stress due to the PE-sheath
- Current rating according to HD 620/ VDE 0276-620, Part 10-C, Table 7 (buried at +20 °C ground temperature according to HD 620/VDE 0276-620, Part 10-C, point 5) for routing underground and Table 8 (in the air at an air temperature of +30 °C according to HD 620/VDE 0276-620, Part 10-C, point 5) when used outdoors; but always taking into consideration corrections/reductions to the current rating that may be necessary according to VDE 0298-4, and VDE 0298-4 (also refer to the catalogue appendix T12) for installation in and on buildings

Norm references / Approvals
- HD 620/ VDE 0276-620

Product Make-up
- Aluminium conductor
- Abbreviation „rm“:
  r = round conductor form;
  m = multi-wire conductor
- Core insulation: Cross-linked Polyethylen (XLPE)
- Screen made of copper wires with one or two copper bond counter spiral
- Longitudinally water-tight wrapping
- Metal tape firmly connected with PE sheath
- Outer sheath: PE, black

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

Conductor stranding
Multi-wire

Minimum bending radius
Fixed installation: 15 x outer diameter

Nominal voltage
U_0/U: 6/10 kV, 12/20 kV, 18/30 kV

Test voltage
Depending on nominal voltage:
6/10 kV: 15 kV
12/20 kV: 30 kV
18/30 kV: 45 kV

Temperature range
During installation: -5°C to +50°C
Fixed installation: -40°C to +90°C

Power and control cables

LAPP

Building Installation • Medium voltage cables

Article number	Number of cores and mm² per conductor	Copper index (kg/km)	Alu index (kg/km)	Outer diameter [mm]	Weight (kg/km)
6/10 kV					
38107624	1 x 120 RM/16	182	348	31.0	951
38107625	1 x 150 RM/25	283	435	32.0	1134
38107626	1 x 240 RM/25	283	696	36.0	1473
38107627	1 x 400 RM/35	394	1160	41.0	2091
12/20 kV					
38107628	1 x 70 RM/16	182	203	32.0	914
38107629	1 x 70 RM/25	283	203	32.0	1015
38107630	1 x 95 RM/25	283	276	34.0	1100
38107631	1 x 120 RM/16	182	348	35.0	1136
38106494	1 x 150 RM/25	283	435	36.0	1327
38107252	1 x 185 RM/25	283	537	38.0	1474
38107253	1 x 240 RM/25	283	696	40.0	1691
38107632	1 x 300 RM/25	283	870	42.0	1914
38106656	1 x 400 RM/35	394	1160	45.0	2298
38107633	1 x 500 RM/35	394	1450	48.0	2675
18/30 kV					
38107634	1 x 70 RM/16	182	203	37.0	1144
38107635	1 x 95 RM/16	182	276	38.0	1273
38107636	1 x 120 RM/16	182	348	40.0	1389
38107637	1 x 150 RM/25	283	435	41.0	1590
38106590	1 x 185 RM/25	283	537	43.0	1750
38107638	1 x 240 RM/25	283	696	45.0	1984
38107639	1 x 300 RM/25	283	870	48.0	2225
38107640	1 x 400 RM/35	394	1160	50.0	2629
38107641	1 x 500 RM/35	394	1450	53.0	3042

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Aluminium price basis: excludes aluminium. Refer to catalogue appendix T17 for the application and definition of „Metal price basis“ and „Metal index“.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- Cable lugs and other connectors made of aluminium or bi-metal Al-Cu are available upon request

ETHERLINE® T1 FLEX

Flexible use

Info

- Single Pair Ethernet
- Industrial Ethernet to the edge
- High mechanical and chemical resistance

Benefits

- Up to 100 Mbit/s with only one twisted pair
- Industrial Ethernet up to the sensor/actuator in the field level of Automation
- Lean and flexible cable construction

Application range

- 10/100 Mbit/s for Industrial Ethernet
- One Pair Ethernet
- For flexible applications (7-wire stranded conductor)
- Industrial use

Product features

- Halogen-free according to VDE 0472-815
- Oil-resistant according to EN 60811-404
- Flammability:
  IEC/EN: 60332-1-2
  UL/CSA: Horizontal Flame, FT2

Norm references / Approvals

- IEEE 802.3bw: 100BASE-T1
- IEEE 802.3cg: 10BASE-T1 (Standard in development)
- UL-AWM-Style 21198 (80 °C / 300 V)

Product Make-up

- 7-wire bare stranded copper conductor
- Core insulation: Based on Polyolefin
- Screening: wrapped with braided tinned-copper wires
- Outer sheath: PUR, violet (RAL 4001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Peak operating voltage
(not for power applications) 125 V

Minimum bending radius
Occassional flexible use:
15 x outer diameter
Fixed installation: 8 x outer diameter

Test voltage
C/C: 2000 V
C/S: 2000 V

Characteristic impedance
nom. 100 Ω

Temperature range
Fixed installation: -40°C to +80°C
Flexing: -30°C to +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Core diameter in mm	Outer diameter [mm]	Weight (kg/km)
ETHERLINE® T1 FLEX					
2170924	ETHERLINE® T1 P FLEX 1x2xAWG18/7	2 x 1 x AWG18/7	2.55	8.0	61
2170921	ETHERLINE® T1 P FLEX 1x2xAWG26/7	2 x 1 x AWG26/7	1.1	4.7	25

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

EPIC® MH 1 250A

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

Info

- High current module up to 250A with touch protection for maximum safety
- Modular connector system, mateable with the market standard

EPIC® MH 1 PE 250A

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

Info

- Protective earth conductor module for a safe PE connection
- Modular connector system, mateable with the market standard

Suitable housing

- EPIC® MH 6 multi frame
- EPIC® MH 10 multi frame
- EPIC® MH 16 multi frame
- EPIC® MH 24 multi frame

Suitable contacts:

EPIC® MH 1 250A

- EPIC® MH 10.0mm Contacts Page 17

EPIC® MH 1 PE 250A

- EPIC® MH PE 10.0mm Contacts Page 17

Benefits

EPIC® MH 1 250A

- High power module 1pole for high power transmission
- Touch protection for maximum safety of the user (protected)
- Crimp connection up to 95mm² for maximum contact safety with the cable
- Protective earth conductor (PE) for a safe PE connection with connection to the frame and housing
- Railway applications
  - Fire protection on railway vehicles: Test according EN 45545-2. Requirement sets R22 and R23. Hazard level HL1, HL2 and HL3

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC002641
ETIM 5.0/6.0 Class-Description: Modular connector (industrial connector)

Rated voltage (V)
1000 V AC/DC

Rated impulse voltage
8 kV

Rated current (A)
250

Pollution degree
3

Flammability
UL94 V-0

Number of contacts
1

Termination methods
EPIC® MH 1 250A
Crimp termination: 25mm² ... 95mm²
EPIC® MH 1 PE 250A
Crimp termination: 25mm² ... 95mm²
Stranded wire for PE connection to the module frame

Material
PA Polyamid

Cycle of mechanical operation
500

Temperature range
-40°C to +120°C

EPIC® MH 1 PE 250A

- Modular connector system, plugable with the market standard
- Protective earth conductor module (PE) for a safe PE connection with connection to the frame and housing
- Crimp connection up to 95mm² for maximum contact safety with the cable
- Railway applications
  - Fire protection on railway vehicles: Test according EN 45545-2. Requirement sets R22 and R23. Hazard level HL1, HL2 and HL3

Application range

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

Article number	Article description	Contact type	Slots	Pieces / PU
EPIC® MH 1 250A				
44423342	EPIC® MHS 1 CM 250A	male	2	10
44423328	EPIC® MHS 1 CM 250A protected	male	2	10
44423329	EPIC® MHB 1 CM 250A protected	female	2	10
EPIC® MH 1 PE 250A				
44423354	EPIC® MHS 1 PE CM 250A	male	2	1
44423355	EPIC® MHB 1 PE CM 250A	female	2	1

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

EPIC® MH 10.0mm Contacts

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

Info

- Crimping contacts for maximum cross sections and currents
- Modular connector system, mateable with the market standard

EPIC® MH PE 10.0mm Contacts

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

Info

- Protection earth (PE) crimping contacts for maximum cross sections
- Modular connector system, mateable with the market standard

Benefits

EPIC® MH 10.0mm Contacts

- Male and female contacts with silver plating
- Crimping with Klauke D 22 and HD 13 series
- Cross section: 25, 35, 50, 70 and 95 mm²

Application range

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

Suitable tools

EPIC® MH PE 10.0mm Contacts

- For use in battery powered hydraulic crimping tool Klauke type EK 60 with D13 series crimping dies or EK 120 battery powered tool with HD13 series crimping dies

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000796
ETIM 5.0/6.0 Class-Description: Contact for industrial connectors

Termination methods
EPIC® MH 10.0mm Contacts
Crimp termination: 25mm² ... 95mm²
EPIC® MH PE 10.0mm Contacts
Crimp termination: 25mm² ... 95mm²
Stranded wire for PE connection to the module frame

Stripping length (mm)
EPIC® MH 10.0mm Contacts
23
EPIC® MH PE 10.0mm Contacts
20

Material
brass silver plated

Cycle of mechanical operation
500

Article number	Article description	Contact type	Connection cross section (mm²)	Pieces / PU
EPIC® MH 10.0mm operating contacts				
44423330	EPIC® MH SCEM AG 25sqmm D=10.0	male	25	10
44423331	EPIC® MH BCEM AG 25sqmm D=10.0	female	25	10
44423332	EPIC® MH SCEM AG 35sqmm D=10.0	male	35	10
44423333	EPIC® MH BCEM AG 35sqmm D=10.0	female	35	10
44423334	EPIC® MH SCEM AG 50sqmm D=10.0	male	50	10
44423335	EPIC® MH BCEM AG 50sqmm D=10.0	female	50	10
44423336	EPIC® MH SCEM AG 70sqmm D=10.0	male	70	10
44423337	EPIC® MH BCEM AG 70sqmm D=10.0	female	70	10
44423338	EPIC® MH SCEM AG 95sqmm D=10.0	male	95	10
44423339	EPIC® MH BCEM AG 95sqmm D=10.0	female	95	10
EPIC® MH 10.0mm protection earth contacts				
44423344	EPIC® MH PE SCEM AG 25sqmm D=10.0	male	25	1
44423345	EPIC® MH PE BCEM AG 25sqmm D=10.0	female	25	1
44423346	EPIC® MH PE SCEM AG 35sqmm D=10.0	male	35	1
44423347	EPIC® MH PE BCEM AG 35sqmm D=10.0	female	35	1
44423348	EPIC® MH PE SCEM AG 50sqmm D=10.0	male	50	1
44423349	EPIC® MH PE BCEM AG 50sqmm D=10.0	female	50	1
44423350	EPIC® MH PE SCEM AG 70sqmm D=10.0	male	70	1
44423351	EPIC® MH PE BCEM AG 70sqmm D=10.0	female	70	1
44423352	EPIC® MH PE SCEM AG 95sqmm D=10.0	male	95	1
44423353	EPIC® MH PE BCEM AG 95sqmm D=10.0	female	95	1

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EPIC® MH LWL Modul LC

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

Info

- Fire Optic module for fitting 6 fiber optics LC connector in one module
- Modular connector system, mateable with the market standard

Suitable housing

- EPIC® MH 6 multi frame
- EPIC® MH 10 multi frame
- EPIC® MH 16 multi frame
- EPIC® MH 24 multi frame

Benefits

- Fire Optic module for fitting 6 fiber optics LC connector in one module
- No EMC influences on the fiber optic data transmission
- EPIC® MH LWL Module is mateable with the market standard
- Integrated coupling element (sleeve) in one module for direct connection and exact positioning of the connection
- Railway applications
  - Fire protection on railway vehicles: Test according EN 45545-2. Requirement sets R22 and R23. Hazard level HL1, HL2 and HL3

Application range

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

Suitable cables

- For fibre optics 50 - 62,5 / 125 µm and singlemode suitable

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC002641
ETIM 5.0/6.0 Class-Description: Modular connector (industrial connector)

Flammability
UL94 V-0

Number of contacts
6

Material
PA Polyamid

Cycle of mechanical operation
500

Temperature range
-40 °C to +120 °C

Article number	Article description	Contact type	Number of operating contacts	Slots	Pieces / PU
EPIC® MH LWL Modul LC					
44423340	EPIC® MHS 6 LWL LC	male	6	1	1
44423341	EPIC® MHB 6 LWL LC	female	6	1	1

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

EPIC® H-A 10

H-A connector insert up to 400V with service friendly screw connection

Info

- New higher voltage resistance, 400V in a small space
- Universal for current and voltage transmission

EPIC® H-A 16

H-A connector insert up to 400V with service friendly screw connection

Info

- New higher voltage resistance, 400V in a small space
- Universal for current and voltage transmission

Suitable housing

EPIC® H-A 10

- EPIC® H-A 10 TG
- EPIC® H-A 10 TGH
- EPIC® H-A 10 TS
- EPIC® H-A 10 TSH
- EPIC® H-A 10 AG-LB
- EPIC® H-A 10 AD-LB
- EPIC® H-A 10 SGR-LB
- EPIC® H-A 10 SGRL-LB
- EPIC® H-A 10 SDR-LB
- EPIC® H-A 10 SDRL-LB
- EPIC® H-A 10 TBF-LB
- EPIC® H-A 10 TBFH-LB

EPIC® H-A 16

- EPIC® H-A 16 TG
- EPIC® H-A 16 TGH
- EPIC® H-A 16 TS
- EPIC® H-A 16 TSH
- EPIC® H-A 16 AG-LB
- EPIC® H-A 16 AD-LB
- EPIC® H-A 16 SGR-LB
- EPIC® H-A 16 SGRL-LB
- EPIC® H-A 16 SDR-LB]
- EPIC® H-A 16 SDRL-LB
- EPIC® H-A 16 TBF-LB
- EPIC® H-A 16 TBFH-LB

Similar products

- Further products with higher numbering in the internet. (H-A 32, H-A 48)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000438
ETIM 5.0/6.0 Class-Description:
Contact insert for industrial connectors

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

Rated impulse voltage
4 kV

Rated current (A)
IEC: 16 A
UL: 14 A
CSA: 16 A

Pollution degree
3

Flammability
UL94 V-0

Contact resistance
1.5 - 4 mohm

Contacts
Copper alloy, hard silver-plated

Number of contacts
EPIC® H-A 10
10 + PE
EPIC® H-A 16
16 + PE

Termination methods
Screw termination: 0.5 - 2.5 mm²

Stripping length (mm)
8

Material
PC Polycarbonat

Cycle of mechanical operation
500

VDE-tested
Certified production control:
VDE-REG. no.: B437
UL-tested:
UL File Number: E75770

Temperature range
-40°C to +120°C

Benefits

- New higher voltage resistance, 400V in a small space
- Slim connector insert for standard application
- Service friendly screw connection for different cross section, PH1 screw heat suitable for electric screwdrivers
- Universal for current and voltage transmission

Application range

- Machine and equipment manufacturing
- Control engineering
- Plastics industry

Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to main catalogue 2018/19

Article number	Article description	Contact type	Wire protection	Number of operating contacts	Pieces / PU
H-A 10 screw termination					
10440100	H-A 10 SS	male	yes	1 - 10	5
10441100	H-A 10 BS	female	yes	1 - 10	5
10440000	H-A 10 SS	male		1 - 10	5
10441000	H-A 10 BS	female		1 - 10	5
H-A 16 screw termination					
10530000	H-A 16 SS	male	yes	1 - 16	5
10531000	H-A 16 BS	female	yes	1 - 16	5
10532000	H-A 16 SS	male		1 - 16	5
10533000	H-A 16 BS	female		1 - 16	5

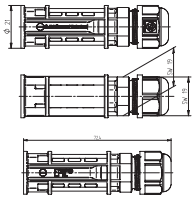
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Similar products

- Further products with higher numbering in the internet. (H-A 32, H-A 48)

EPIC® SOLAR 4Plus M

Connector system for weatherproof cabling of photovoltaic systems

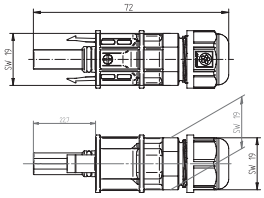


Info

- 4 mm connector system with double hook
- For photovoltaic plants up to 1.5kV system voltage

EPIC® SOLAR 4Plus F

Connector system for weatherproof cabling of photovoltaic systems



Info

- 4 mm connector system with double hook
- For photovoltaic plants up to 1.5kV system voltage

Benefits

- Low contact-resistance for efficient power transmission
- Crimp connection for reliable field mounting
- Suitable for various ÖLFLEX® SOLAR cables
- Reliable connection, only possible to unlock with a tool, according NEC standard
- Tested accroding IEC 62852: Connectors for DC-application in photovoltaic systems

Application range

- Photovoltaic plants
- Crystalline and thin-film constructions
- Solartracker

Product features

- 4 mm connector system with double hook
- 10mm² maximum crimp connection for high currents and long cables
- 1,500 V system voltage for modern photovoltaic plants with huge power

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC002635
ETIM 5.0/6.0 Class-Description: Circular connector (industrial connector)

Rated voltage (V)
1.5 kV

Rated impulse voltage
16 kV

Pollution degree
3

Contact resistance
< 0.5 mOhm

Protection rating
IP68 (10h/1m)

Cycle of mechanical operation
100

Protection class
II

Temperature range
-40°C to +105°C

Suitable cables

- H1Z2Z2-K
- ÖLFLEX® SOLAR XLWP
- ÖLFLEX® SOLAR XLS-R
- ÖLFLEX® SOLAR XLR-E

Suitable connectors

- EPIC® SOLAR 4 THIN
- EPIC® SOLAR 4
- EPIC® SOLAR 4 Splitter

Suitable tools

- EPIC® CRIMPTOOL refer to main catalogue 2018/19
- EPIC® SOLAR TOOL CSC refer to main catalogue 2018/19
- EPIC® SOLAR TOOL refer to main catalogue 2018/19

Article number	Article designation	Cross-section (mm²)	Clamping range in mm	Rated current (A)	PU
EPIC® SOLAR 4Plus male field-mountable, inclusive contacts					
44428233	EPIC® SOLAR 4Plus M 2.5mm2	2.5	5.2 - 7.1	22	100
44428235	EPIC® SOLAR 4Plus M 4mm² ... 6mm²	4 - 6	5.2 - 7.1	30	100
44428237	EPIC® SOLAR 4Plus M 10mm²	10	5.2 - 7.1	35	100
EPIC® SOLAR 4Plus male contacts as spare part					
44428217	EPIC® SOLAR 4Plus PIN M 2.5mm²	2.5			100
44428219	EPIC® SOLAR 4Plus PIN M 4mm² ... 6mm²	4.0 - 6.0			100
44428239	EPIC® SOLAR 4Plus PIN M 10mm²	10			100
EPIC® SOLAR 4Plus female field-mountable, inclusive contacts					
44428234	EPIC® SOLAR 4Plus F 2.5mm2	2.5	5.2 - 7.1	22	100
44428236	EPIC® SOLAR 4Plus F 4mm² ... 6mm²	4 - 6	5.2 - 7.1	30	100
44428238	EPIC® SOLAR 4Plus F 10mm²	10	5.2 - 7.1	35	100
EPIC® SOLAR 4Plus female contacts as spare part					
44428218	EPIC® SOLAR 4Plus PIN F 2.5mm2	2.5			100
44428220	EPIC® SOLAR 4Plus PIN F 4mm² ... 6mm²	4.0 - 6.0			100
44428240	EPIC® SOLAR 4Plus PIN F 10mm²	10			100

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Accessories

EPIC® SOLAR 4Plus

- EPIC® CRIMPTOOL refer to main catalogue 2018/19
- EPIC® SOLAR TOOL CSC refer to main catalogue 2018/19

EPIC® POWER LS1 D6 TWIST

Circular connectors for servomotors and power supply

Info

- TWIST quick-lock technology
- Connector with 1/4 turn safely locked
- Vibration-proof

EPIC® POWER LS1 D6 TWIST short

Circular connectors for servomotors and power supply

Info

- TWIST quick-lock technology
- Connector with 1/4 turn safely locked
- Vibration-proof

Suitable contacts:

- EPIC® POWER LS1 Contacts female refer to main catalogue 2018/19
- PU = 5 pieces: the contacts are included. 2 mm contact crimp range is 0.5 - 2.5 mm².
- PU = 20 pieces: the contacts must be ordered separately

Benefits

- Locking 70% faster
- EMC-optimised design
- Safety use in field environment by high protection class

Application range

- Plant engineering
- Servo drives and servo assemblies
- Not pluggable with standard EPIC POWER LS1 counterparts type A1,A3,F6,F7,G4,G6

Product features

- UL pending

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC002635
ETIM 5.0/6.0 Class-Description: Circular connector (industrial connector)

Rated voltage (V)
630 V (2 mm contacts)
250 V (1 mm contacts)

Rated impulse voltage
6 kV (2 mm contacts)
4 kV (1 mm contacts)

Rated current (A)
26A/3+PE+4, 25A/5+PE (2mm contacts)
7 A (1 mm contacts)

Pollution degree
3

Contact resistance
< 4 mOhm

Contacts
Gold-plated brass

Number of contacts
3+PE+4(2mm/1mm)
5+PE(2mm)

Termination methods
Crimp termination: 0.5 - 4.0 mm² (2 mm contacts)
Crimp termination: 0.14 - 1.0 mm² (1 mm contacts)

Material
Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM

Protection rating
IP68 (10h/1m)

Cycle of mechanical operation
500

Temperature range
-25°C up to +125°C

Article number	Article description	Contacts included	Clamping range in mm	Pin configuration	Pieces / PU
Type LS1 D6, cable connector, 6-pin, for female contacts					
24441263	LS1 D6	6	8,5 - 11	5+PE	5
24441264	LS1 D6		8,5 - 11	5+PE	20
24441265	LS1 D6	6	10,5 - 15,5	5+PE	5
24441266	LS1 D6		10,5 - 15,5	5+PE	20
24441267	LS1 D6	6	7,5 - 15,5	5+PE	5
24441268	LS1 D6		7,5 - 15,5	5+PE	20
24441269	LS1 D6	6	14 - 17	5+PE	5
24441270	LS1 D6		14 - 17	5+PE	20
24441293	LS1 D6	6	7,5 - 15,5	5+PE	1
Type LS1 D6, cable connector, 8-pin, for female contacts					
24441271	LS1 D6	8	8,5 - 11	3+PE+4	5
24441272	LS1 D6		8,5 - 11	3+PE+4	20
24441273	LS1 D6	8	10,5 - 15,5	3+PE+4	5
24441274	LS1 D6		10,5 - 15,5	3+PE+4	20
24441275	LS1 D6	8	7,5 - 15,5	3+PE+4	5
24441276	LS1 D6		7,5 - 15,5	3+PE+4	20
24441277	LS1 D6	8	14 - 17	3+PE+4	5
24441278	LS1 D6		14 - 17	3+PE+4	20
24441294	LS1 D6	8	7,5 - 15,5	3+PE+4	1
Type LS1 D6 short, cable connector, 6-pin, for female contacts					
24441279	LS1 D6	6	8,5 - 11	5+PE	5
24441280	LS1 D6		8,5 - 11	5+PE	20
24441281	LS1 D6	6	10,5 - 15,5	5+PE	5
24441282	LS1 D6		10,5 - 15,5	5+PE	20
24441283	LS1 D6	6	7,5 - 15,5	5+PE	5
24441284	LS1 D6		7,5 - 15,5	5+PE	20
Type LS1 D6 short, cable connecor, 8-pin, for female contacts					
24441285	LS1 D6	8	8,5 - 11	3+PE+4	5
24441286	LS1 D6		8,5 - 11	3+PE+4	20
24441287	LS1 D6	8	10,5 - 15,5	3+PE+4	5
24441288	LS1 D6		10,5 - 15,5	3+PE+4	20
24441289	LS1 D6	8	7,5 - 15,5	3+PE+4	5
24441290	LS1 D6		7,5 - 15,5	3+PE+4	20

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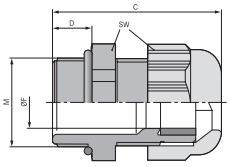
SKINTOP® ST-HF-M

Halogen-free plastic cable gland

Info

- NEW: Black version (UV-resistant, also suitable for outdoor applications)



Benefits

- Maximum reliability
- Extremely flame-retardant according to UL 94 V0
- Completely halogen-free (including sealing material)
- Self-extinguishing, no dripping
- Permanent vibration protection

Application range

- Underground railways and trains
- When the protection of people and property is a priority
- Public buildings
- Ventilation systems
- Tunnel construction

Norm references / Approvals

- DIN EN 45545-2 (HL3)
- Filament testing according to EN 60695-2-1/1 +960°C

Product Make-up

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

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000441
ETIM 5.0/6.0 Class-Description: Cable screw gland

Caution
Refer to Appendix T21 for the installation dimensions and torques

Colour delivered
RAL 7035 light grey
RAL 9005 black/UV-resistant

Material
Body: polyamide
Sealing ring: special elastomer
O-ring: special elastomer

Protection rating
IP 68 - 5 bar

Temperature range
Fixed: -40°C to +100°C
Dynamic: -20°C to +100°C

Article number	Article designation / size	Clamping range ØF mm	SW wrench size mm	Overall length C mm	Thread length D mm	Pieces / PU
SKINTOP® ST-HF-M light grey						
53111407	M 12 x 1,5	4-5,5	15	30.0	8	100
53111417	M 16 x 1,5	4,5-9	19	34.0	8	100
53111427	M 20 x 1,5	7-13	25	37.0	9	100
53111437	M 25 x 1,5	9-17	30	40.0	10	50
53111447	M 32 x 1,5	11-21	36	47.0	10	25
53111457	M 40 x 1,5	19-28	46	52.0	10	10
53111467	M 50 x 1,5	27-35	55	62.0	12	5
53111477	M 63 x 1,5	34-45	66	71.0	12	5
SKINTOP® ST-HF-M black						
53111408	M 12 x 1,5	4-5,5	15	30.0	8	100
53111418	M 16 x 1,5	4,5-9	19	34.0	8	100
53111422	M 20 x 1,5	7-13	25	37.0	9	100
53111438	M 25 x 1,5	9-17	30	40.0	10	50
53111448	M 32 x 1,5	11-21	36	47.0	10	25
53111458	M 40 x 1,5	19-28	46	52.0	10	10
53111468	M 50 x 1,5	27-35	55	62.0	12	5
53111478	M 63 x 1,5	34-45	66	70.0	12	5

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

Accessories

- SKINTOP® GMP-HF-M refer to main catalogue 2018/19

SKINTOP® FLAT

Cable gland with sealing insert for flat cables

Info

- Innovative, patented sealing construction enables IP68 over the entire clamping range

Benefits

- Specially designed sealing insert enables very high IP protection
- Wide, variable clamping ranges
- Suitable for both angular and round cable contours
- Even pressure distribution on the flat cable
- Halogen-free

Application range

- For inserting flat cables
- Conveyor and transport systems
- Indoor cranes and high-rack facilities
- Lifts
- Cable trolley systems
- Submersible pumps

Product Make-up

- Metric connection thread acc. to DIN EN 60423
- Technical information referring to DIN IEC 62444

Note

- Size M 63 x 1.5 and M 63 x 1.5 plus in preparation

Suitable cables

- ÖLFLEX® CRANE F
- ÖLFLEX® LIFT F

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000441
ETIM 5.0/6.0 Class-Description: Cable screw gland

Caution
Tightening torques see installation instructions

Material
Body: Nickel-plated brass
Insert: Polyamid
Sealing: NBR
O-Ring: NBR

Protection rating
IP 68 - 5 bar

Temperature range
-20°C to +100°C

Article number	Article designation / size	Cable width min. / max. mm	Cable thickness min. / max. mm	SW wrench size mm	Overall length C mm	Thread length D mm	Pieces / PU
SKINTOP® FLAT							
53119375	M 25 x 1,5	11 - 16	3 - 6	29	37.5	8	25
53119376	M 32 x 1,5	15 - 20	3 - 7	36	42.2	9	25
53119377	M 40 x 1,5	18 - 28	3 - 9	45	49.5	9	10
53119378	M 50 x 1,5	26 - 33	5 - 11	54	52.0	10	5

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

Accessories

- SKINDICHT® SM-M refer to main catalogue 2018/19

SKINTOP® MULTI-M

Cable bushing system with metric thread

Info

- Compact, round multi cable bushing system with innovative gel technology

Benefits

- Large clamping range of 4 mm per bushing due to elastic gel technology with innovative membrane technology
- Easy installation of the cables even for high packing density
- Optimum strain relief at the entire cable bundle
- Not used bushings remain securely sealed

Application range

- Used in areas where a lot of cables and wires need to be inserted into housings with minimum space requirements
- For not harnessed cables and media hoses
- Apparatus and switch cabinet construction
- Automation technology

Product features

- Cables can be inserted directly without using a pricking awl
- Secure sealing at the cable & housing
- High packing density
- Halogen-free and silicone-free
- UV-, Ozon and oil resistant

Norm references / Approvals

- UL pending

Included

- SKINTOP® MULTI-M including locknut and O-ring

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000240
ETIM 5.0/6.0 Class-Description: Cable entry

Certifications
UL pending
Fire behaviour according to UL94 V-2

Note
On request:
- individual bushing configuration
- other metric thread sizes

Material
Frame: Polycarbonat
Sealing: Gel
O-Ring: NBR

Protection rating
IP 68

Temperature range
With O-ring: -30°C to +100°C
Without O-ring: -30°C to +110°C

Article number	Article designation / size	Max. number of executions	Number of cables x clamping range	SW wrench size mm	Pieces / PU
SKINTOP® MULTI-M					
52220111	M50x1,5	18	18 x 2-6 mm	54	1
52220112	M63x1,5	30	30 x 2-6 mm	67	1

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

Similar products

- SKINTOP® DIX-M refer to main catalogue 2018/19
- SKINTOP® CUBE MULTI refer to main catalogue 2018/19
- SKINTOP® MULTI refer to main catalogue 2018/19
- SKINTOP® MULTI VENT refer to main catalogue 2018/19

Accessories

- SKINTOP® DIX-DV refer to main catalogue 2018/19

SKINDICHT® TWIST-M

Swivelling coupler with hexagonal collar

Benefits

- Exact positioning of e.g. elbowed fittings
- Swivelling coupler with increased sealing
- Prevents cables and conduits to get damaged due to (unintentionally) encountered torsional stress

Application range

- Control cabinet manufacturing
- Control systems
- Mechanical engineering
- For mobile equipment and machines
- In combination with metric threaded (conduit) fittings

Product features

- Swivelling upper part
- High sealing performance

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000441
ETIM 5.0/6.0 Class-Description: Cable screw gland

Material
Body: nickel-plated brass
Spring ring: spring steel
Sealing: FKM

Protection rating
IP 68

Temperature range
-20°C up to +200°C

Article number	Thread, male M1	Thread, female M2	SW wrench size mm	Pieces / PU
SKINDICHT® TWIST-M				
52104730	12 x 1.5	12 x 1.5	16	10
52104731	16 x 1.5	16 x 1.5	20	10
52104732	20 x 1.5	20 x 1.5	24	10
52104733	25 x 1.5	25 x 1.5	29	5
52104734	32 x 1.5	32 x 1.5	36	5
52104735	40 x 1.5	40 x 1.5	45	2
52104736	50 x 1.5	50 x 1.5	54	2
52104737	63 x 1.5	63 x 1.5	67	2

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

Accessories

- SKINDICHT® SM-M refer to main catalogue 2018/19

SILVYN® MSK-U-M

Universal metric threaded coupler with integrated cable strain relief, for use with conduit fittings

Info

- Integrated SKINTOP® cable strain relief

Benefits

- Optimum cable and conduit strain relief
- Maximum cable sealing
- Fast and easy assembly
- Wide clamping range
- Anti-turn protection

Application range

- In combination with metric threaded conduit fittings
- Used in areas where cables and wires need to be provided with strain relief and additional sealing

Product features

- Combination of SILVYN® and SKINTOP®

Note

- For suitable accessories, refer to SKINTOP® metric accessories

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001180
ETIM 5.0/6.0 Class-Description: Screw connection for protective metallic hose

Material
Body: nickel-plated brass
Insert: Polyamide
Sealing ring: CR/NBR
O-ring: NBR

Protection rating
Cable: IP 68
Conduit: depending on the used conduit system

Temperature range
static -40°C up to +100°C
dynamic -25°C up to + 100°C

Article number	Metric size	Clamping range in mm	Suitable gland size	Pieces / PU
SILVYN® MSK-U-M				
55506129	12 x 1.5	3.5 - 7.0	M 12 x 1,5	5
55506130	16 x 1.5	4.5 - 10.0	M 16 x 1,5	5
55506131	20 x 1.5	7.0 - 13.0	M 20 x 1,5	5
55506132	25 x 1.5	9.0 - 17.0	M 25 x 1,5	5
55506133	32 x 1.5	11.0 - 21.0	M 32 x 1,5	5
55506134	40 x 1.5	19.0 - 28.0	M 40 x 1,5	1
55506153	50 x 1.5	27.0 - 35.0	M 50 x 1,5	1
55506154	63 x 1.5	34.0 - 45.0	M 63 x 1,5	1

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Accessories

- SKINDICHT® SM-M refer to main catalogue 2018/19
- SKINTOP® DIX-M refer to main catalogue 2018/19
- SKINTOP® DIX-M AUTOMATION refer to main catalogue 2018/19
- SKINTOP® DIX-DV refer to main catalogue 2018/19

PVX 1300 pressing pliers battery-operated

Info

- NEW: two-stage DUAL crimping technique (first hexagonal pressing, then additional mandrel pressing)

Benefits

- Pressure strength control using pressure monitoring
- Buzzing signal and flashing light if right pressure is not achieved
- Display with information on the tool and service interval
- Single-handed operation for easy handling
- Rapid feed for more efficient crimping

Application range

- Battery powered crimp tool for crimping of CU terminals KRF/KRT 10-400 mm²
- Same accessories as V1311-A pliers

Product features

- Crimps/charge: 60-120 depending on size and temperature
- Battery type: Makita 5 Ah
- Charging time: 40 min

Included

- Supplied with robust plastic case, battery charger and instruction manual
- Pressing dies and die holders need to be ordered seperately

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000168
ETIM 5.0/6.0 Class-Description: Crimp tool cable lugs, cable end sleeves, screen connection

Note
Crimping profile: DUAL (hexagonal + mandrel) or hexagonal
Pressing force: 124 kN (13 t)

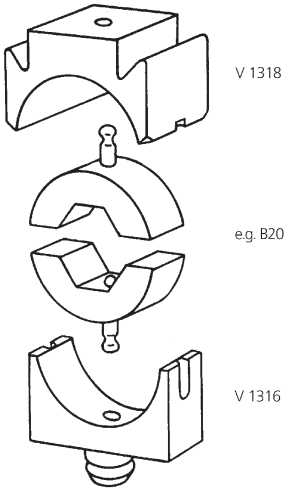
Article number	Article designation
PVX 1300 pressing pliers battery-operated	
61813872	Crimping tool PVX 1300

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

Accessories

- Die holders for system 1311 refer to page 28
- Dies for system 1311 and 1300 refer to page 29

Die holders for system 1311



Application range

- Both the inner die holder V1316 and the outer die holder V1318 is needed

Note

- Only needed for dies which have no „13“ in article designation

Suitable tools

- V 1311-A pressing pliers, hydraulicrefer to main catalogue 2018/19
- PVX 1300 pressing pliers battery-operated refer to page 28

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001282
ETIM 5.0/6.0 Class-Description: Insert for crimp tool cable lugs, cable end sleeves, screen connection

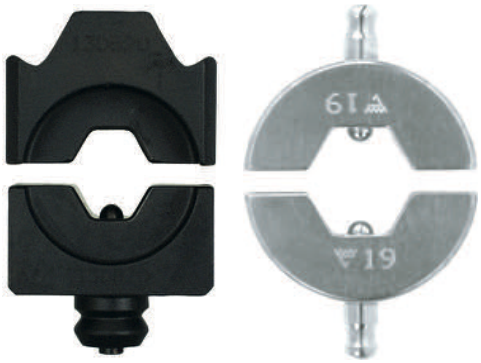
Article number	Article designation	Dies per PU	PU
Die holders for system 1311			
61795941	V 1316 inner die-holder	1	1
61795942	V 1318 outer die-holder	1	1

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

Dies for system 1311 and 1300

Info

- NEW: two-stage DUAL crimping technique (first hexagonal pressing, then additional mandrel pressing)



Application range

- Pressing dies for V 1311 and PVX 1300 for crimping cable lugs (KRT/KRF) and butt connectors (KST/KSF)

Included

- Pressing dies are delivered in pairs
- For pressing dies where the article designation begins with „13B“ no extra die holders are needesd, for all other dies you need to order the die holders separately.

Suitable tools

- V 1311-A pressing pliers, hydraulic refer to main catalogue 2018/19
- PVX 1300 pressing pliers battery-operated refer to page 28

Technical data

ETIM

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001282
ETIM 5.0/6.0 Class-Description: Insert for crimp tool cable lugs, cable end sleeves, screen connection

Article number	Article designation	For KRT/KST mm²	For KRF/KSF mm²	PU
Pressing dies DUAL				
61795982	13DB8		10	1
61795983	13DB9		16	1
61795984	13DB11		25	1
61813899	13DB13		35	1
61795952	13DB14,5		50	1
61795985	13DB17		70	1
61813874	13DB20		95	1
61813871	13DB22		120	1
61795986	13DB25		150	1
61813873	13DB27		185	1
61795987	13DB30		240	1
61795988	13DB32		300	1
Pressing dies hexagonal				
61795950	B7	10		1
61795951	B8		10	1
61795960	B8,5	16		1
61795970	B9		16	1
61795971	B10	25		1
61795972	B11		25	1
61795980	B12	35		1
61795981	B13		35	1
61795990	B14	50		1
61795991	B14,5		50	1
61796000	B16	70		1
61796001	B17		70	1
61796010	B18	95		1
61796020	B19	120		1
61796021	B20		95	1
61796030	B22	150	120	1
61796031	B24	185		1
61796032	B25		150	1
61796043	13B26	240		1
61796047	13B27		185	
61796044	13B30	300	240	1
61796045	13B32	400	300	1
61796046	13B38		400	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 and graphics are not to scale and do not represent detailed images of the respective products.

FLEXIMARK® thermal printer SQUIX and EOS5*

Info

- Technical support available in English free of charge (Phone: +4615577764, E-mail: support@fleximark.se)

Benefits

- High print speed (up to 150 mm/sec)
- High print resolution: 300 dpi
- Simple communication with FLEXIMARK® Software
- Basic maintenance such as cleaning the label sensor, changing the print head or print roller, can be easily done by yourself

Application range

- Printing on a variety of different materials (among others FLEXIMARK® shrink tube, cablelabel PUR and TA foam component marking)
- The thermal transfer printing method increases the smudge and scratch resistance of the printed surface, and provides increased resistance to oils and chemicals as well

Note

- For cutting of e.g. shrink tubes use optional cutter for the EOS 5
- For perforating flat shrink tubes use thermal transfer printer SQUIX together with the optional perforation cutter

Included

- FLEXIMARK® Software
- FLEXIMARK® thermal printer SQUIX or EOS5 with operating manual and service manual
- Windows® driver
- FLEXIMARK® Ribbon R71 55/360 resin BK (article number 83259604)
- Power supply USB cable (length 1.8 m)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-Description: Accessories for fax/printer/MFC

Dimensions
SQUIX: 274x242x446 mm (HxWxD)
EOS5: 245x264x412mm (HxWxT)

Label rolls
Material thickness:
0.055-1.2 mm (SQUIX)
0.055-0.7 mm (EOS5)
Carrier width:
10-120 mm (SQUIX)
10-116 mm (EOS5)
Max. core diameter Ø:
38.0-100.0mm (SQUIX)
38-76mm (EOS5)

Ribbons
Run length up to 500m (SQUIX) or 360m (EOS5)

Speed
Up to 150.00 mm/s

Weight
SQUIX: 9.0 kg
EOS5: 5 kg

Material
Labels or continuous material on coils

Article number	Article designation	PU
FLEXIMARK® thermal printer SQUIX and EOS5*		
83259532	FLEXIMARK® Thermoprint EOS5/300	1
83259602	FLEXIMARK® Thermoprinter SQUIX 4/300M	1
83259536	FLEXIMARK® Cutter EOS5	1
83259603	FLEXIMARK® Perforation cutter PCU400 SQUIX 1	1

* Trade product, no Lapp product
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FLEXIMARK® products are sold in packaging units. As example if you like to order 640 labels of LCK 32 you just need to order 1 PU instead of 640 single labels.

Accessories

- FLEXIMARK® ribbons SQUIX, EOS4 and EOS5 refer to main catalogue 2018/19

Shrink tube PROTECT-HF

Info

- Thin walled
- Halogen-free

Benefits

- Flexible
- Halogen-free products do not develop corrosive or toxic gases in the event of a fire, are flame-retardant, show little fire propagation and develop only little smoke
- PROTECT-HF RW: Can be flattened for marking purposes, suitable for railway applications

Application range

- Insulation, protection and cable bundling
- Green-yellow shrink tube: For identifying and marking earthing connectors and cables
- PROTECT-HF RW: For railway applications and marking systems

Product features

- Halogen-free
- Good chemical resistance
- Flame retardant
- Silicone-free
- UV-resistant (only colour: black)

Norm references / Approvals

- PROTECT-HF / Box: Flammability class FMVSS 302
- PROTECT-HF RW: Flammability class ASTM D 635-HB, Railway normative (BS-6853 (1999) Vehicle category 1A, EN 45545-2 HL 3, LUL 1-085 A3), Boeing BSS 7239 toxic gas generation M7

Included

- PROTECT-HF Box: Stackable boxes for easy storage
- PROTECT-HF: Plastic bag with 1.22 m units
- PROTECT-HF RW: Delivered on spool

Suitable tools

- HG 2320 hot-air pistol refer to main catalogue 2018/19

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000217
ETIM 5.0/6.0 Class-Description: Shrink tubing

On request
Other colours are available upon request

Note
Thin walled
Dielectric strength: 20 kV/mm

Info
Shrinking ratio: 2:1

Colour delivered
Black
Green-yellow

Material
Polyolefin

Temperature range
Shrinking temperature: +90 °C
PROTECT-HF / Box: -30 °C to +105 °C
PROTECT-HF RW: -55 °C to +105 °C

Article number	Article description	Colour	Shrinkage range (mm)	Panel thickness, shrunk +- 0.1 mm	Contents (m)	PU
Shrink tube PROTECT-HF Box						
61742489	PROTECT-HF Box 1,2/0,6 BK	black	1.2 - 0.6	0.41	15	1
61742490	PROTECT-HF Box 1,6/0,8 BK	black	1.6 - 0.8	0.43	15	1
61742491	PROTECT-HF Box 2,4/1,2 BK	black	2.4 - 1.2	0.51	15	1
61742492	PROTECT-HF Box 3,2/1,6 BK	black	3.2 - 1.6	0.51	15	1
61742493	PROTECT-HF Box 4,8/2,4 BK	black	4.8 - 2.4	0.51	12	1
61742494	PROTECT-HF Box 6,4/3,2 BK	black	6.4 - 3.2	0.65	12	1
61742495	PROTECT-HF Box 9,5/4,7 BK	black	9.5 - 4.7	0.65	10	1
61742496	PROTECT-HF Box 12,7/6,4 BK	black	12.7 - 6.4	0.65	8	1
61742497	PROTECT-HF Box 19,1/9,5 BK	black	19.1 - 9.5	0.77	5	1
61742498	PROTECT-HF Box 25,4/12,7 BK	black	25.4 - 12.7	0.89	3	1

Article number	Article description	Colour	Shrinkage range (mm)	Panel thickness, shrunk +- 0.1 mm	Contents (m)	PU
Shrink tube PROTECT-HF						
61742472	PROTECT-HF 1,2/0,6 BK	black	1.2 - 0.6	0.41	61	1
61742473	PROTECT-HF 1,6/0,8 BK	black	1.6 - 0.8	0.43	61	1
61742474	PROTECT-HF 2,4/1,2 BK	black	2.4 - 1.2	0.51	61	1
61742475	PROTECT-HF 3,2/1,6 BK	black	3.2 - 1.6	0.51	61	1
61742476	PROTECT-HF 4,8/2,4 BK	black	4.8 - 2.4	0.51	61	1
61742477	PROTECT-HF 6,4/3,2 BK	black	6.4 - 3.2	0.65	30.5	1
61742478	PROTECT-HF 9,5/4,7 BK	black	9.5 - 4.7	0.65	30.5	1
61742479	PROTECT-HF 12,7/6,4 BK	black	12.7 - 6.4	0.65	30.5	1
61742480	PROTECT-HF 19,1/9,5 BK	black	19.1 - 9.5	0.77	30.5	1
61742481	PROTECT-HF 25,4/12,7 BK	black	25.4 - 12.7	0.89	18.3	1
61742482	PROTECT-HF 3,2/1,6 GN/YE	green-yellow	3.2 - 1.6	0.51	61	1
61742483	PROTECT-HF 4,8/2,4 GN/YE	green-yellow	4.8 - 2.4	0.51	61	1
61742484	PROTECT-HF 6,4/3,2 GN/YE	green-yellow	6.4 - 3.2	0.65	30.5	1
61742485	PROTECT-HF 9,5/4,7 GN/YE	green-yellow	9.5 - 9.5	0.65	30.5	1
61742486	PROTECT-HF 12,7/6,4 GN/YE	green-yellow	12.7 - 6.4	0.65	30.5	1
61742487	PROTECT-HF 19,1/9,5 GN/YE	green-yellow	19.1 - 9.5	0.77	30.5	1
61742488	PROTECT-HF 25,4/12,7 GN/YE	green-yellow	25.4 - 12.7	0.89	18.3	1
Shrink tube PROTECT-HF RW						
61742499	PROTECT-HF RW 2,4/1,2 BK	black	2.4 - 1.2	0.43 - 0.6	300	1
61742501	PROTECT-HF RW 3,2/1,6 BK	black	3.2 - 1.6	0.55 - 0.72	300	1
61742502	PROTECT-HF RW 4,8/2,4 BK	black	4.8 - 2.4	0.55 - 0.72	300	1
61742503	PROTECT-HF RW 6,4/3,2 BK	black	6.4 - 3.2	0.65 - 0.8	300	1
61742504	PROTECT-HF RW 9,5/4,7 BK	black	9.5 - 4.7	0.65 - 0.75	150	1
61742505	PROTECT-HF RW 12,7/6,4 BK	black	12.7 - 6.4	0.65 - 0.75	100	1
61742506	PROTECT-HF RW 19,1/9,5 BK	black	19.1 - 9.5	0.7 - 0.85	50	1
61742507	PROTECT-HF RW 25,4/12,7 BK	black	25.4 - 12.7	0.85 - 1.0	50	1
61742508	PROTECT-HF RW 2,4/1,2 WH	white	2.4 - 1.2	0.43 - 0.6	300	1
61742509	PROTECT-HF RW 3,2/1,6 WH	white	3.2 - 1.6	0.55 - 0.72	300	1
61742510	PROTECT-HF RW 4,8/2,4 WH	white	4.8 - 2.4	0.55 - 0.72	300	1
61742511	PROTECT-HF RW 6,4/3,2 WH	white	6.4 - 3.2	0.65 - 0.8	300	1
61742512	PROTECT-HF RW 9,5/4,7 WH	white	9.5 - 4.7	0.65 - 0.75	150	1
61742513	PROTECT-HF RW 12,7/6,4 WH	white	12.7 - 6.4	0.65 - 0.75	100	1
61742514	PROTECT-HF RW 19,1/9,5 WH	white	19.1 - 9.5	0.7 - 0.85	50	1
61742523	PROTECT-HF RW 25,4/12,7 WH	white	25.4 - 12.7	0.85 - 1.0	50	1
61742515	PROTECT-HF RW 2,4/1,2 YE	yellow	2.4 - 1.2	0.43 - 0.6	300	1
61742516	PROTECT-HF RW 3,2/1,6 YE	yellow	3.2 - 1.6	0.55 - 0.72	300	1
61742517	PROTECT-HF RW 4,8/2,4 YE	yellow	4.8 - 2.4	0.55 - 0.72	300	1
61742518	PROTECT-HF RW 6,4/3,2 YE	yellow	6.4 - 3.2	0.65 - 0.8	300	1
61742519	PROTECT-HF RW 9,5/4,7 YE	yellow	9.5 - 4.7	0.65 - 0.75	150	1
61742520	PROTECT-HF RW 12,7/6,4 YE	yellow	12.7 - 6.4	0.65 - 0.75	100	1
61742521	PROTECT-HF RW 19,1/9,5 YE	yellow	19.1 - 9.5	0.7 - 0.85	50	1
61742522	PROTECT-HF RW 25,4/12,7 YE	yellow	25.4 - 12.7	0.85 - 1.0	50	1

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The following applies for the use of our products

The conformity of our products to the relevant European directives and compliance with the provisions contained therein shall be indicated by the CE marking.

The safety of our products is closely associated with how they are used. A knowledge of and adherence to the respective international/national standards of use (e.g. DIN VDE 0100; 0298) are mandatory. There are particular risks if installed improperly. This applies to all our products/items:

Processing is only to be done by an authorised electrician! Otherwise, there is the risk of an electric shock or a fire ignited by electric current!

Safety

Without exception, our products are tested for application safety in accordance with defined standards and our own regulations, which complement the standards. Relevant legal requirements and safety regulations are also observed. Provided due care and attention is paid, the possibility of product-specific danger to the user may thus reasonably be excluded. Where products are used carelessly or incorrectly, however, considerable danger to persons and the environment may arise. For this reason, our cables must only be processed and/or used responsibly by trained electricians or specialists. This catalogue contains general information for the application of each product. Independent of such information, the application standards DIN VDE 0298 and DIN VDE 0891 for cables will apply. Excerpts from these standards, as well as complementary selection and application tables, design and installation guidelines, are contained in the tables in the appendix to this catalogue. Our machines and installation tools are – where necessary – designed in accordance with the machine guidelines and display the CE identification mark. It must be noted, however, that our machines and installation tools must only be used by trained specialist personnel and for the purpose for which they were designed.

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