

ÖLFLEX[®] a secure connection

Mining Catalogue 2009/10



ÖLFLEX[®] MINE



LAPP GROUP

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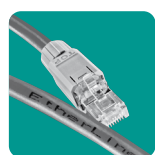
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The Lapp Group



Headquarters in Stuttgart



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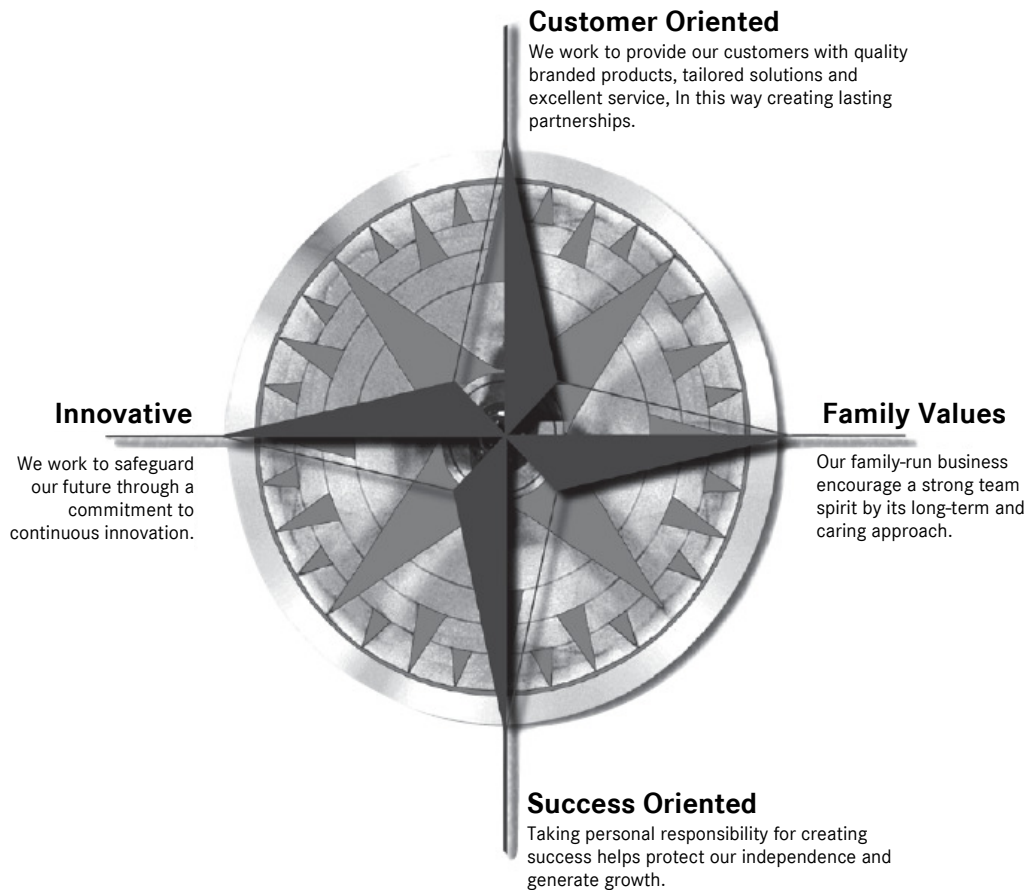


Lapp Logistics Pte Ltd in Singapore

The Lapp Group provides a complete range of cables for all manner of industries and markets. Sourcing from a single supplier means competent advice and consistently high quality down to the last detail of designers, planners and manufacturers. Not only that, they can also be sure that all components are perfectly harmonized and enjoy fast, hassle-free ordering. Lapp Group's products are predominantly manufactured in the Lapp Group's own production plants.

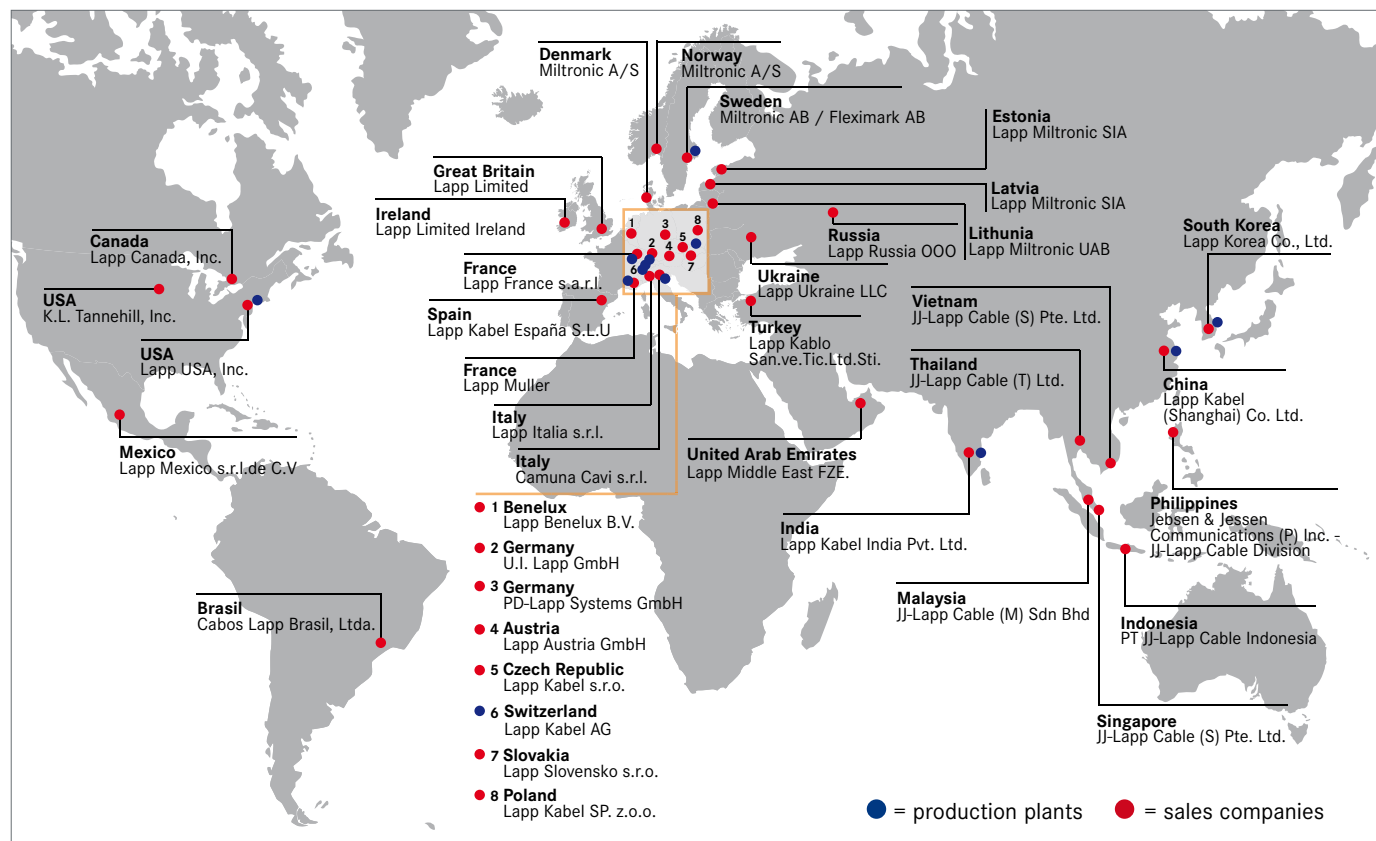
Over 40,000 different standard products are currently available off the shelf. In addition, special cables are developed and produced to create individual customer solutions.

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



Andreas Lapp, Ursula Ida Lapp and Siegbert Lapp

The Lapp Group worldwide



The Lapp Group around the world

The Lapp Group is an internationally active family business with headquarters in Stuttgart. Around the world, 3.000 employees in 17 production sites, 39 distribution companies and more than 100 agencies are involved in production, marketing and providing advice and service to customers.

“Think global, act local” is seen less as a slogan, but more as part of the company philosophy. After all, a strong customer focus is something we achieve all the time. This by no means contradicts our clear commitment to Stuttgart and to Germany. In addition to Germany, there are six other production sites in Europe.

With the acquisition of other business skills, the Lapp Group intends to expand its range of products and to open up new markets.

Three other production sites in Asia – with the emphasis on the boom country of India – and two in the USA support the export industry in Germany and Europe and help our customers exploit these markets.

On the one hand this provides the greatest possible proximity to customers, while on the other enables local requirements and regulations to be taken into account. Further benefits ensue, e.g. the elimination of transportation costs without having to sacrifice

the high quality reputation of “Made by Lapp”.

Lapp’s own Centers of Competence for the advanced training of employees and customers, e.g. in India, Thailand and Russia, round off our range of services.

Larger companies, such as those in Russia, India, China, Canada and Mexico, have their own warehouses. The other companies are quickly and reliably supplied from the relevant central stores.

www.lappgroup.com/worldwide

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International Certificates

Certification – Why?

Certifications prove the compliance regarding certain standards for products, services and related manufacturing-processes.

Our company

- As a basis of qualitymanagement, certification in acc. with DIN EN ISO 9001:2000.
- To prove fulfillment of environmental standards, certification in acc. with ISO 14001:2004

That means

- Inspection and assessment of products and the related manufacturing-processes by independend and accredited authorities.
- Prevention of possible risks for health, life, property and environment.
- Further evidence for customers, hence high market-acceptance and facilitates international market-activities.
- ...to foster environmental awareness and to provide legal security.

And what is about CE?

The CE-Marking serves technical harmonizing and the reduction of technical trade barriers.

The CE-marking is kind of a “technical passport” for the product and is applied by the manufacturer as a self-dependent indication, that relevant national and international standards are fulfilled. It serves also to protect consumers health and safety.

Are there any CE-Certificates?

No! – but Declarations of Conformity. Declarations of Conformity belong to the as usual confidential technical documentation reg. product and production and is submitted to the authorities on request to prove fulfillment of techn. standards and european directives.

Important international standards:

- The Low-voltage-directive for electrical equipment with a rated voltage 50 – 1000 VAC or 75 – 1500 VDC.
- The so called ATEX-Directive

Do all Lapp-Products carry a CE-Marking?

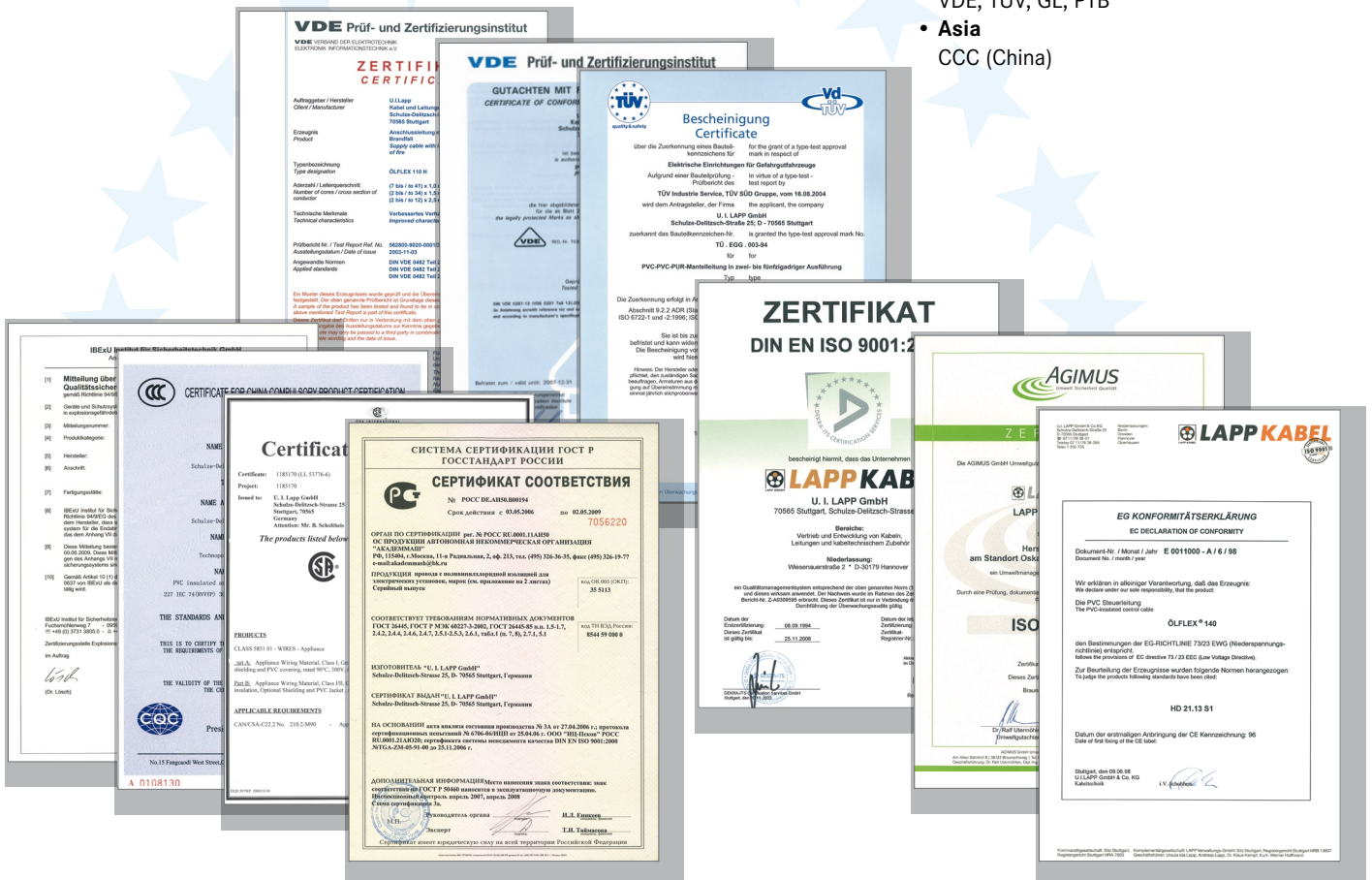
No! e.g. Data cables with their rated voltage lower than the range given by the Low-voltage-directive do not carry the CE-marking.

Product-Certifications for our international clientel

Confirmation from independant accredited authorities reg. products to fulfill the requirement of one or several standards. (For international accredited authorities and their trademarks see also Table T 18).

See typical examples below:

- **North America**
UL (USA), CSA (Canada)
- **Europe**
EN-Directives from EC, HAR
GOST-Russia (see also Table T26)
- **National**
VDE, TÜV, GL, PTB
- **Asia**
CCC (China)



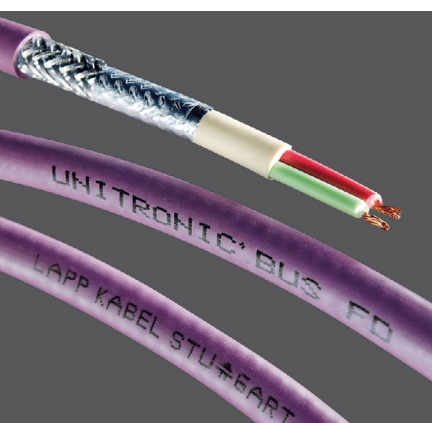
Our international brands



ÖLFLEX® Power-, control- reeling and trailing 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

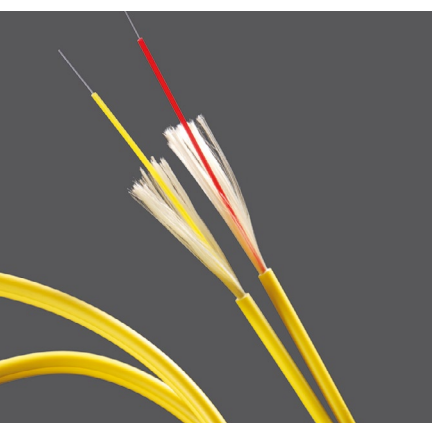
or internationally certified, you can choose from our comprehensive range of standard products.



UNITRONIC® Data communication systems

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® Optical transmission systems

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®

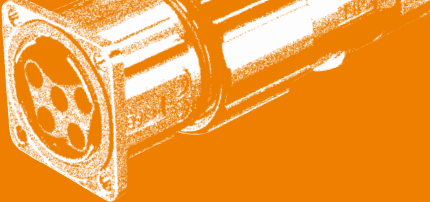
fibre optic cable. The HITRONIC® range of products includes cables for office communications, industrial applications, simplex, duplex, hybrid wiring, or cable chain applications.



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.



SILVYN® Protective cable conduit systems and cable carrier systems

In many applications cables have to be additionally protected against mechanical and chemical stress. For this type of application, Lapp Group 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 Group's widely variable programme of power chains we offer both cable protection and guidance for highly dynamic applications.

FLEXIMARK® Cable marking products

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.

EPIC® Industrial connectors

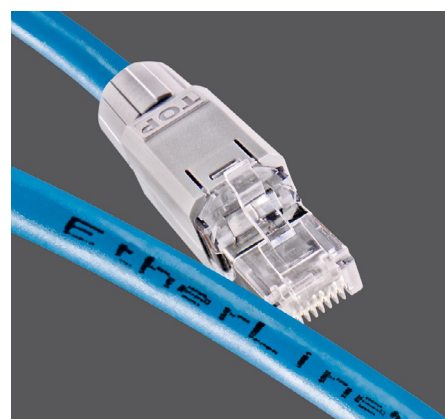
When we talk about secure connections, you can take us at our word. **EPIC®** industrial connectors produce an absolutely secure connection in combination with **ÖLFLEX®** cables. We provide the right contact for all

your needs: From rectangular or circular connectors, to housings, inserts, contacts and accessories, bus or fibre optic cable applications.

ETHERLINE® Data communication systems for ETHERNET-Technology

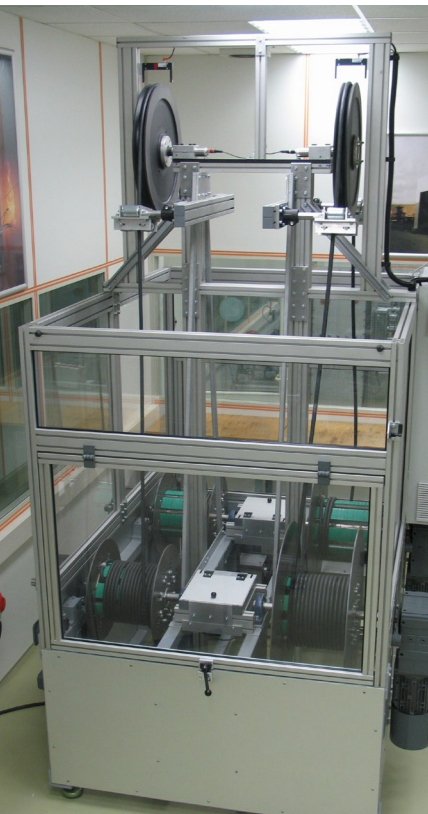
The Lapp Group is now in a position to offer comprehensive system solutions in the field of industrial networking. Its Factory Automation division supplies active network components that are used to supplement existing cable and plug technologies. These include services and security systems incor-

porating firewall solutions, in addition to distribution components such as switches, routers, cables and plug connectors. For its industrial customers, all of this means that a solution from the Lapp Group represents a considerable step forward in terms of security, safety and availability.





Simulating practical conditions as closely as possible: Drum test bed with adjustable drum core



Always on the move: endurance testing unit for highly flexible power-chain cables.

No pain – No gain

Our testcentre with its high requirements regarding material testing and quality assurance significantly contributes to the value of Lapp products. This is where the performance of new developments is checked in the course of tough and extended endurance tests. For example – High-/Continuous-Flex.

Cables underlie millions of bending cycles with various speed and bending radii at the limit. To survive this ‚chamber of torture‘ is just enough to become part of Lapps standard programme range.

A new achievement in this line is our test stand for reelable cables. Set up from scratch it includes adjustable reel cores to perform praxis-relevant endurance tests of

e.g. our ÖLFLEX® CRANE PUR. This reelable cable serves for the supply of power and control at e.g. Lifting devices, cranes and conveyors. Wind-on, deflection, let-out – to simulate long term stress under various operational conditions the bending radii, the travel speed and the tensile force can be independently varied at two separated test partitions.

Long duration tests and refined test equipment may reflect true-life in approximation and are often a must to proof the compliance with relevant standards. But they cannot substitute customer contacts. Please feel free to make suggestions and comments.

Best equipment for best results

For example ‘EDX’

EDX stimulates the sample with X-ray radiation, whereby the included elements in the sample emit a characteristic irradiation. On the basis of the energy of the emitted irradiation the elements can be identified. The intensity of the emitted irradiation is used for the quantification of the amount of the included elements. This measurement method covers a wide range of elements from sodium to uranium – a total of 48 elements are taken in consideration.

RoHS – an important application

EDX offers simple and fast decision-making criteria in order to evaluate the samples. It enables analysis of hazardous substances in plastics and metallic parts down to the ppm range. As the measuring method is ‘nondestructive’, control-measurements of the original sample can be accomplished during a long period in time.

Our Testcentre – also for customer products

Assemblies are as good as their components. We offer our customer to run their third-party-components through our demanding test-procedures to gain better confidence or to find a better alternative. Ask for details!

ÖLFLEX® CLASSIC 100	12
ÖLFLEX® CLASSIC 100 CY	14
ÖLFLEX® CLASSIC 100 SY	15
ÖLFLEX® CLASSIC 110	16
ÖLFLEX® CLASSIC 110 CY	18
ÖLFLEX® CLASSIC 110 SY	19
ÖLFLEX® CLASSIC 110 BLACK	20
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ÖLFLEX® 440 P	22
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ÖLFLEX® AQUA RN8	28
ÖLFLEX® AQUA BAM	29
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NSGAFÖU	31
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ÖLFLEX® MINE	34
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ÖLFLEX®

**Power- control-
reeling and trailing cables**



Wide-range use

PVC sheath and coloured cores



ÖLFLEX® CLASSIC 100



Info

- Customised colour option and printing of the outer sheath on request

Benefits

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

Application range

- Plant engineering and construction
 - Industrial machinery
 - Air conditioning installations
 - Power station
- Dry or damp interiors under medium mechanical load conditions
- Fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Good chemical resistance

Approvals (Norm references)



Product Make-up

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

Technical data



Core identification code

up to 5 cores acc. to: VDE 0293-308 (table T4) starting at 6 cores: ÖLFLEX® colour code



Based on

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



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

fine wire acc. to
VDE 0295 Kl.5 / IEC 60228 Cl.5



Minimum bending radius

occasional flexing: 15 x cable diameter
fixed installation: 4 x cable diameter



Rated voltage

up to 1,5 mm²: U_0/U : 300/500 V
starting at 2.5 mm²: U_0/U : 450/750 V
fixed, protected installation:
 U_0/U : 600/1000 V



Test voltage

4000 V



Protective conductor

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



Range of temperature

occasional flexing: -5 °C to +70 °C
fixed installation: -40 °C to +80 °C

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CLASSIC 100; U₀/U: 300/500 V				
0010000	2 X 0.5	5.4	9.6	42
0010001	3 G 0.5	5.7	14.4	50
00101223	3 X 0.5	5.7	15.0	50
00100023	4 G 0.5	6.2	19.2	60
00101233	4 X 0.5	6.2	19.2	60
00100033	5 G 0.5	6.7	24.0	71
00101243	5 X 0.5	6.7	24.0	71
0010004	6 G 0.5	6.7	29.0	73
0010005	7 G 0.5	6.7	33.6	81
0010006	8 G 0.5	8.0	38.4	97
0010007	10 G 0.5	8.6	48.0	116
0010008	12 G 0.5	8.9	58.0	133
0010009	14 G 0.5	9.5	67.0	151
0010010	16 G 0.5	10.0	76.0	169
0010011	21 G 0.5	11.7	99.0	223
0010012	24 G 0.5	12.4	114.0	254
0010016	40 G 0.5	15.4	192.0	404
0010021	2 X 0.75	6.2	14.4	56
0010022	3 G 0.75	6.5	21.6	67
00101253	3 X 0.75	6.5	21.6	67
00100233	4 G 0.75	7.1	28.8	81
00101263	4 X 0.75	7.1	28.8	81
00100243	5 G 0.75	8.0	36.0	99
00101273	5 X 0.75	8.0	36.0	99
0010025	6 G 0.75	7.3	43.3	104
0010026	7 G 0.75	7.3	50.4	109
0010027	8 G 0.75	8.8	56.0	123
0010028	9 G 0.75	9.4	63.0	144
0010029	10 G 0.75	9.6	72.0	153
0010030	12 G 0.75	9.9	86.4	176
0010031	15 G 0.75	10.9	108.0	229
0010032	18 G 0.75	11.7	129.6	268
0010033	21 G 0.75	13.0	151.0	293
0010034	25 G 0.75	13.8	180.0	374
0010036	40 G 0.75	17.3	288.0	571
0010037	50 G 0.75	19.2	360.0	698
0010041	2 X 1	6.5	19.2	64
0010042	3 G 1	6.9	29.0	78
00102033	3 X 1	6.9	28.0	78
00100433	4 G 1	7.7	38.4	97

ÖLFLEX® CLASSIC 100

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CLASSIC 100; U0/U: 300/500 V				
00102043	4 X 1	7.7	38.4	97
00100443	5 G 1	8.4	48.0	105
00102053	5 X 1	8.4	48.0	105
00100445	6 G 1	8.0	58.0	124
00100446	7 G 1	8.0	67.0	131
00100447	8 G 1	9.5	77.0	146
00100449	10 G 1	10.2	96.0	183
0010050	12 G 1	10.5	115.0	220
0010052	16 G 1	11.8	154.0	282
0010053	18 G 1	12.7	173.0	315
0010054	20 G 1	13.4	192.0	350
0010056	25 G 1	14.7	240.0	449
0010063	2 X 1.5	7.5	29.0	87
0010064	3 G 1.5	8.1	43.0	109
00101283	3 X 1.5	8.1	43.0	109
00100653	4 G 1.5	8.9	58.0	133
00101293	4 X 1.5	8.9	58.0	133
00100663	5 G 1.5	10.0	72.0	163
00101303	5 X 1.5	10.0	72.0	163
0010068	7 G 1.5	8.9	101.0	166
0010069	8 G 1.5	10.6	115.0	205
0010071	12 G 1.5	12.0	173.0	307
0010072	14 G 1.5	12.7	202.0	349
0010074	18 G 1.5	14.4	259.0	465
0010076	25 G 1.5	16.9	360.0	655
ÖLFLEX® CLASSIC 100; U0/U: 450/750 V				
0010086	2 X 2.5	8.9	48.0	128
0010087	3 G 2.5	9.6	72.0	162
00100933	3 X 2.5	9.6	72.0	162
00100883	4 G 2.5	10.7	96.0	203
00100893	5 G 2.5	11.8	120.0	242
0010091	7 G 2.5	13.1	168.0	321
0010092	8 G 2.5	15.8	192.0	385
0010100	2 X 4	10.6	76.8	187
0010210	3 G 4	11.8	115.2	255
00101013	4 G 4	12.7	154.0	297
00101023	5 G 4	13.9	192.0	355
0010103	7 G 4	15.4	269.0	471
0010105	3 G 6	12.6	173.0	318
00101063	4 G 6	13.8	230.0	394
00101073	5 G 6	15.6	288.0	489
0010108	7 G 6	17.3	403.0	651
0010301	3 G 10	15.9	288.0	516
00101093	4 G 10	17.6	384.0	650
00101103	5 G 10	19.7	480.0	792
0010111	7 G 10	21.7	672.0	1,058
0010302	3 G 16	18.3	461.0	911
00101123	4 G 16	20.4	614.0	1,087
00101133	5 G 16	22.8	768.0	1,370
0010303	3 G 25	23.0	720.0	1,388
00101153	4 G 25	25.4	960.0	1,582
00101163	5 G 25	28.5	1,200.0	1,998
0010304	3 G 35	25.6	1,008.0	1,766
00101173	4 G 35	28.5	1,344.0	2,106
00101183	5 G 35	31.9	1,680.0	2,635
0010305	3 G 50	31.0	1,440.0	2,556
00101193	4 G 50	34.5	1,920.0	2,943
00103133	5 G 50	38.6	2,400.0	3,936
0010306	3 G 70	35.3	2,016.0	3,182
00101203	4 G 70	39.4	2,688.0	4,092
00103143	5 G 70	44.1	3,360.0	4,800
0010307	3 G 95	41.3	2,736.0	4,675
00101213	4 G 95	45.8	3,648.0	5,538
00103153	5 G 95	50.0	4,560.0	5,600
0010308	3 G 120	46.6	3,456.0	5,626
00103093	4 G 120	51.9	4,608.0	6,994
00103123	4 G 185	61.9	7,104.0	8,300

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

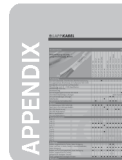
Single lengths for sizes: ≥ 5G50 max. 500m; ≥ 5G95 max. 400; ≥ 3G120 max. 500m; ≥ 4G120 max. 300; ≥ 4G185 max. 250m

Comparable products

- ÖLFLEX® CLASSIC 110 BK POWER 0,6/1kV see page 20

Accessories

- SKINTOP® CLICK see page 107



Wide-range use

PVC sheath and coloured cores



ÖLFLEX® CLASSIC 100 CY



Info

- EMC compliant

■ Benefits

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

■ Application range

- Plant engineering and construction
- Industrial machinery
- Air conditioning installations
- Conveying and transport systems
- Servo drives
- In EMI critical environment (electromagnetic interference)

■ Product features

- Flame-retardant acc. to IEC 60332-1-2
- Good chemical resistance
- High coverage degree of the screen low transfer impedance (max. 250 Ω/km at 30 MHz)

■ Approvals (Norm references)



■ Product Make-up

- Fine strands of bare copper wires
- PVC insulation LAPP P8/1
- PVC inner sheath, grey
- Screen made of tinned copper wire braid
- PVC outer sheath, transparent

■ Technical data



Core identification code

up to 5 cores acc. to: VDE 0293-308 (table T4) starting at 6 cores: ÖLFLEX® colour code



Based on

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



Specific insulation resistance

> 20 GΩm x cm



Conductor stranding

fine wire acc. to
VDE 0295 Kl.5 / IEC 60228 Cl.5



Minimum bending radius

occasional flexing: 20 x cable diameter
fixed installation: 6 x cable diameter



Rated voltage

up to 1,0 mm²: U₀/U: 300/500 V
starting at 1.5 mm²: U₀/U: 450/750 V
fixed, protected installation:
U₀/U: 600/1000 V



Test voltage

4000 V



Protective conductor

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



Range of temperature

occasional flexing: -5 °C to +70 °C
fixed installation: -40 °C to +80 °C

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CLASSIC 100 CY; U₀/U: 300/500 V				
0035001	2 X 0.5	7.0	41.0	75
0035002	3 G 0.5	7.3	46.0	83
00350033	4 G 0.5	7.9	55.0	99
00352013	5 G 0.5	8.4	66.0	112
0035202	7 G 0.5	8.9	80.0	132
0035004	2 X 0.75	7.4	46.0	86
0035005	3 G 0.75	7.9	57.0	100
00350063	4 G 0.75	8.4	64.0	115
00350163	5 G 0.75	8.9	77.0	130
0035203	7 G 0.75	9.7	102.0	161
0035220	2 X 1	7.9	56.0	98
0035221	3 G 1	8.2	65.0	111
00352223	4 G 1	8.7	78.0	130
00352233	5 G 1	9.5	89.0	153
0035204	7 G 1	10.2	113.0	185
ÖLFLEX® CLASSIC 100 CY; U₀/U: 450/750 V				
0035000	2 X 1.5	9.9	65.0	132
0035458	3 G 1.5	10.3	79.0	170
00354593	4 G 1.5	11.3	97.0	204
00354603	5 G 1.5	12.6	116.0	246
0035461	7 G 1.5	13.9	149.0	320
0035011	3 G 2.5	11.8	146.0	211
00350173	4 G 2.5	13.5	167.0	310
00350123	5 G 2.5	14.6	200.0	326

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
0035289	7 G 2.5	15.9	288.0	444
00350183	4 G 4	15.1	237.0	403
00350133	5 G 4	16.5	328.0	478
00350193	4 G 6	16.6	318.0	524
00350143	5 G 6	18.2	441.0	624
0034953	3 G 10	18.9	414.0	690
00350213	4 G 10	21.1	558.0	843
00352903	5 G 10	23.1	714.0	1,004
0034954	3 G 16	21.7	607.0	910
00350223	4 G 16	23.9	804.0	1,395
00350153	5 G 16	26.8	1,050.0	1,812
0034955	3 G 25	26.6	936.0	1,330
00350233	4 G 25	29.4	1,289.0	1,903
00350243	5 G 25	32.6	1,446.0	2,374
0034956	3 G 35	29.4	1,258.0	1,370
00350253	4 G 35	32.4	1,693.0	2,489
00350263	5 G 35	36.0	1,975.0	2,771
0034952	3 G 50	35.1	1,748.0	2,590
00350273	4 G 50	38.8	2,342.0	3,362
00350283	4 G 70	43.7	3,035.0	3,719
00350293	4 G 95	50.4	4,055.0	5,849
00354303	4 G 120	56.8	5,225.0	7,509
00354313	4 G 150	62.2	6,300.0	7,800
00354323	4 G 185	67.8	7,753.0	9,866

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Single lengths for sizes: ≥ 4G50 max. 500m; ≥ 4G95 max. 400m; ≥ 4G120 max. 300m; ≥ 4G150 max. 250m



ÖLFLEX® CLASSIC 100 SY



Info

- With steel wire braid



Benefits

- Additional mechanical protection due to steel wire braid

Application range

- Plant engineering and construction
Industrial machinery
Air conditioning installations
- Areas with increased mechanical stress requirements

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Good chemical resistance

Approvals (Norm references)



Product Make-up

- Fine strands of bare copper wires
- PVC insulation LAPP P8/1
- PVC inner sheath, grey
- Oxidation protected steel wire braid
- PVC outer sheath, transparent

Technical data



Core identification code
up to 5 cores acc. to: VDE 0293-308 (table T4)
starting at 6 cores: ÖLFLEX® colour code



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



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
fine wire acc. to
VDE 0295 Kl.5 / IEC 60228 Cl.5



Minimum bending radius
occasional flexing: 20 x cable diameter
fixed installation: 6 x cable diameter



Rated voltage
up to 1,5 mm²: U₀/U: 300/500 V
starting at 2.5 mm²: U₀/U: 450/750 V
fixed, protected installation:
U₀/U: 600/1000 V



Test voltage
4000 V



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



Range of temperature
occasional flexing: -5 °C to +70 °C
fixed installation: -40 °C to +80 °C

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CLASSIC 100 SY; U₀/U: 300/500 V				
0016022	2 X 0.75	8.2	14.4	97
0016023	3 G 0.75	8.5	21.6	108
00160243	4 G 0.75	9.2	28.8	126
00160253	5 G 0.75	9.7	36.0	146
0016027	7 G 0.75	10.3	50.0	172
0016031	12 G 0.75	12.9	86.0	260
0016042	2 X 1	8.5	19.2	137
0016043	3 G 1	8.8	29.0	154
00160443	4 G 1	9.5	38.4	180
00160453	5 G 1	10.1	48.0	202
0016047	7 G 1	11.0	67.0	242
0016057	25 G 1	18.1	240.0	653
0016064	2 X 1.5	9.3	29.0	172
0016065	3 G 1.5	9.7	43.0	191
00160663	4 G 1.5	10.2	58.0	217
00160673	5 G 1.5	11.1	72.0	268
0016069	7 G 1.5	11.9	101.0	311
0016072	12 G 1.5	15.4	173.0	499
0016075	18 G 1.5	17.6	259.0	652
0016077	25 G 1.5	20.3	360.0	913
0016078	32 G 1.5	22.1	461.0	1,065

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

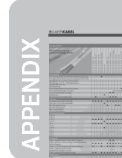
Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

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

Comparable products

- ÖLFLEX® CLASSIC 110 SY see page 19

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CLASSIC 100 SY; U₀/U: 450/750 V				
0016087	2 X 2.5	12.1	48.0	245
0016088	3 G 2.5	12.6	72.0	278
00160893	4 G 2.5	13.9	96.0	339
00160903	5 G 2.5	15.2	120.0	397
0016092	7 G 2.5	16.3	168.0	470
0016101	2 X 4	13.6	76.8	329
00161023	4 G 4	15.7	154.0	457
00161033	5 G 4	17.1	192.0	545
0016106	3 G 6	15.8	173.0	544
00161073	4 G 6	17.2	230.0	687
00161083	5 G 6	18.8	288.0	798
00161103	4 G 10	21.3	384.0	1,009
00161113	5 G 10	23.3	480.0	1,197
00161133	4 G 16	24.1	614.0	1,384
00161143	5 G 16	26.8	768.0	1,740
00161163	4 G 25	29.4	960.0	2,021
00161173	5 G 25	32.6	1,200.0	2,464
00161183	4 G 35	32.4	1,344.0	2,570
00161193	5 G 35	36.0	1,680.0	3,185
00161203	4 G 50	38.8	1,920.0	3,514



Wide-range use

PVC sheath and numbered cores



ÖLFLEX® CLASSIC 110

LAPP KABEL STUTTGART ÖLFLEX® CLASSIC 110 VDE Reg. Nr. 7030 CE



Info

- VDE certificate of conformity with factory surveillance

Benefits

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

Application range

- Plant engineering and construction
Industrial machinery
Air conditioning installations
Power station
- Fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Dry or damp interiors under medium mechanical load conditions

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Good chemical resistance

Approvals (Norm references)



Product Make-up

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

Technical data



Core identification code

black with white numbers acc. to VDE 0293



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

fine wire acc. to

VDE 0295 Kl.5 / IEC 60228 Cl.5



Minimum bending radius

occasional flexing: 15 x cable diameter

fixed installation: 4 x cable diameter



Rated voltage

U₀/U: 300/500 V

Test voltage

4000 V



Protective conductor

G = with protective conductor GN/YE

X = without protective conductor



Range of temperature

occasional flexing: -5 °C to +70 °C

fixed installation: -40 °C to +80 °C



VDE-tested

VDE Reg. No. 7030 for sizes

up to and including 60 cores

Part number	Number of cores and mm² per conductor	Available as standard length only (•)	Standard lengths, meter							Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
			25	50	100	200	300	500	1000			
ÖLFLEX® CLASSIC 110; U0/U: 300/500 V												
1119752	2 X 0.5	•			100	200	300	500	1000	4.8	9.6	35
1119003	3 G 0.5	•			100	200	300	500	1000	5.1	14.4	42
1119753	3 X 0.5	•			100	200	300	500	1000	5.1	14.4	42
1119004	4 G 0.5	•			100	200	300	500	1000	5.7	19.2	54
1119754	4 X 0.5	•			100	200	300	500	1000	5.7	19.2	54
1119005	5 G 0.5	•			100	200	300	500	1000	6.2	24.0	63
1119755	5 X 0.5	•			100	200	300	500	1000	6.2	24.0	63
1119007	7 G 0.5	•		50	100	200	300	500	1000	6.7	33.6	81
1119757	7 X 0.5	•		50	100	200	300	500	1000	6.7	33.6	81
1119010	10 G 0.5	•		50	100	200	300	500	1000	8.6	48.0	116
1119012	12 G 0.5	•		50	100	200	300	500	1000	8.9	58.0	131
1119014	14 G 0.5			50	100			500	1000	9.5	67.0	153
1119018	18 G 0.5			50	100			500	1000	10.5	86.4	188
1119021	21 G 0.5			50	100			500	1000	11.7	101.0	221
1119025	25 G 0.5			50	100			500	1000	12.4	120.0	261
1119030	30 G 0.5			50	100			500	1000	13.3	144.0	304
1119035	35 G 0.5			50	100			500	1000	14.5	168.0	256
1119040	40 G 0.5			50	100			500	1000	15.4	192.0	400
1119052	52 G 0.5			50	100			500		17.3	250.0	517
1119061	61 G 0.5			50	100			500		18.5	293.0	603
1119065	65 G 0.5			50	100			500		19.6	312.0	644
1119080	80 G 0.5			50	100			500		21.1	384.0	780
1119100	100 G 0.5			50	100			500		23.6	480.0	975
1119802	2 X 0.75	•			100	200	300	500	1000	5.4	14.4	45
1119103	3 G 0.75	•			100	200	300	500	1000	5.7	21.6	55
1119803	3 X 0.75	•			100	200	300	500	1000	5.7	21.6	55
1119104	4 G 0.75	•			100	200	300	500	1000	6.2	28.8	66
1119804	4 X 0.75	•			100	200	300	500	1000	6.2	28.8	66
1119105	5 G 0.75	•		50	100	200	300	500	1000	6.7	36.0	79
1119805	5 X 0.75	•		50	100	200	300	500	1000	6.7	36.0	79
1119107	7 G 0.75	•		50	100	200	300	500	1000	7.3	50.0	101
1119807	7 X 0.75	•		50	100	200	300	500	1000	7.3	50.0	101
1119109	9 G 0.75	•		50	100	200	300	500	1000	9.4	65.0	137
1119110	10 G 0.75	•		50	100	200	300	500	1000	9.6	72.0	150
1119112	12 G 0.75	•		50	100	200	300	500	1000	9.9	86.0	171
1119812	12 X 0.75	•		50	100	200	300	500	1000	9.9	86.0	171
1119115	15 G 0.75			50	100			500	1000	10.9	108.0	209
1119117	15 X 0.75			50	100			500	1000	10.9	108.0	209
1119116	16 G 0.75			50	100			500	1000	11.1	115.2	220
1119118	18 G 0.75			50	100			500	1000	11.7	130.0	244
1119121	21 G 0.75			50	100			500	1000	13.0	151.0	286
1119125	25 G 0.75			50	100			500	1000	13.8	180.0	337
1119126	26 G 0.75			50	100			500	1000	14.2	187.2	350
1119134	34 G 0.75			50	100			500	1000	15.9	245.0	448
1119141	41 G 0.75			50	100			500	1000	17.4	296.0	538
1119150	50 G 0.75			50	100			500		19.2	360.0	648
1119151	51 G 0.75			50	100			500		19.2	367.0	646
1119161	61 G 0.75			50	100			500		20.5	439.0	779
1119165	65 G 0.75			50	100			500		21.8	468.0	832
1119180	80 G 0.75			50	100			500		23.6	576.0	1,019
1119200	100 G 0.75			50	100			500		26.4	718.0	1,271
1119852	2 X 1	•			100	200	300	500	1000	5.7	19.2	53
1119203	3 G 1	•			100	200	300	500	1000	6.0	28.8	65
1119853	3 X 1	•			100	200	300	500	1000	6.0	28.8	65

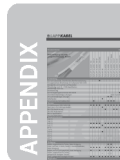
ÖLFLEX® CLASSIC 110

Part number	Number of cores and mm² per conductor	Available as standard length only (•)	Standard lengths, meter							Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
			25	50	100	200	300	500	1000			
ÖLFLEX® CLASSIC 110; U0/U: 300/500 V												
1119204	4 G 1	•		50	100	200	300	500	1000	6.5	38.4	79
1119854	4 X 1	•		50	100	200	300	500	1000	6.5	38.4	79
1119205	5 G 1	•		50	100	200	300	500	1000	7.1	48.0	94
1119855	5 X 1	•		50	100	200	300	500	1000	7.1	48.0	94
1119206	6 G 1	•		50	100	200	300	500	1000	8.0	58.0	113
1119207	7 G 1	•		50	100	200	300	500	1000	8.0	67.0	126
1119857	7 X 1	•		50	100	200	300	500	1000	8.0	67.0	126
1119208	8 G 1	•		50	100	200	300	500	1000	9.5	77.0	149
1119209	9 G 1	•		50	100	200	300	500	1000	10.0	86.0	164
1119210	10 G 1	•		50	100	200	300	500	1000	10.2	96.0	180
1119212	12 G 1	•		50	100	200	300	500	1000	10.5	115.0	205
1119862	12 X 1	•		50	100	200	300	500	1000	10.5	115.0	205
1119214	14 G 1			50	100			500	1000	11.2	134.0	238
1119216	16 G 1			50	100			500	1000	11.8	153.6	266
1119218	18 G 1			50	100			500	1000	12.7	173.0	320
1119868	18 X 1			50	100			500	1000	12.7	173.0	320
1119220	20 G 1			50	100			500	1000	13.4	192.0	330
1119870	20 X 1			50	100			500	1000	13.4	192.0	330
1119225	25 G 1			50	100			500	1000	14.7	240.0	408
1119226	26 G 1			50	100			500	1000	15.1	249.0	424
1119234	34 G 1			50	100			500	1000	17.1	326.0	551
1119236	36 G 1			50	100			500	1000	17.4	346.0	578
1119241	41 G 1			50	100			500	1000	18.8	394.0	661
1119242	42 G 1			50	100			500	1000	19.1	403.2	695
1119250	50 G 1			50	100			500		20.6	480.0	797
1119256	56 G 1			50	100			500		21.4	538.0	888
1119261	61 G 1			50	100			500		22.1	586.0	958
1119265	65 G 1			50	100			500		23.6	624.0	1,033
1119280	80 G 1			50	100			500		25.3	768.0	1,251
1119300	100 G 1			50	100			500		28.3	960.0	1,560
1119902	2 X 1.5	•			100	200	300	500	1000	6.3	29.0	68
1119303	3 G 1.5	•	25	50	100	200	300	500	1000	6.7	43.0	84
1119903	3 X 1.5	•		50	100	200	300	500	1000	6.7	43.0	84
1119304	4 G 1.5	•	25	50	100	200	300	500	1000	7.2	58.0	104
1119904	4 X 1.5	•		50	100	200	300	500	1000	7.2	58.0	104
1119305	5 G 1.5	•	25	50	100	200	300	500	1000	8.1	72.0	128
1119905	5 X 1.5	•		50	100	200	300	500	1000	8.1	72.0	128
1119306	6 G 1.5	•		50	100	200	300	500	1000	8.4	86.4	157
1119307	7 G 1.5	•	25	50	100	200	300	500	1000	8.9	101.0	166
1119907	7 X 1.5	•		50	100	200	300	500	1000	8.9	101.0	166
1119308	8 G 1.5			50	100			500	1000	10.6	115.0	210
1119313	8 X 1.5			50	100			500	1000	10.6	115.0	210
1119309	9 G 1.5			50	100			500	1000	11.4	130.0	221
1119310	10 G 1.5			50	100			500	1000	11.6	143.0	243
1119311	11 G 1.5			50	100			500	1000	11.6	158.0	258
1119312	12 G 1.5		25	50	100			500	1000	12.0	173.0	279
1119912	12 X 1.5			50	100			500	1000	12.0	173.0	279
1119314	14 G 1.5			50	100			500	1000	12.7	202.0	323
1119316	16 G 1.5			50	100			500	1000	13.4	230.4	361
1119318	18 G 1.5		25	50	100			500	1000	14.4	259.0	407
1119321	21 G 1.5			50	100			500	1000	15.7	302.0	469
1119325	25 G 1.5		25	50	100			500	1000	16.9	360.0	560
1119326	26 G 1.5			50	100			500	1000	17.3	374.4	582
1119332	32 G 1.5			50	100			500	1000	18.7	461.0	704
1119334	34 G 1.5			50	100			500	1000	19.4	490.0	746
1119341	41 G 1.5			50	100			500	1000	21.3	591.0	895
1119350	50 G 1.5			50	100			500		23.5	720.0	1,089
1119361	61 G 1.5			50	100			500		25.2	878.0	1,309
1119365	65 G 1.5			50	100			500		26.7	936.0	1,398
1119952	2 X 2.5	•	25	50	100	200	300	500	1000	7.5	48.0	101
1119403	3 G 2.5	•	25	50	100	200	300	500	1000	8.1	72.0	132
1119404	4 G 2.5	•	25	50	100	200	300	500	1000	8.9	96.0	163
1119405	5 G 2.5	•	25	50	100	200	300	500	1000	10.0	120.0	200
1119407	7 G 2.5		25	50	100			500	1000	11.1	168.0	267
1119412	12 G 2.5		25	50	100			500	1000	14.8	288.0	445
1119414	14 G 2.5			50	100			500	1000	15.8	336.0	515
1119418	18 G 2.5		25	50	100			500	1000	17.8	432.0	648
1119425	25 G 2.5		25	50	100			500	1000	20.8	600.0	890
1119434	34 G 2.5			50	100			500	1000	24.4	816.0	1,208
1119450	50 G 2.5			50	100			500		29.4	1,200.0	1,754
1119503	3 G 4		25	50	100			500	1000	9.9	115.0	201
1119504	4 G 4		25	50	100			500	1000	10.8	154.0	249
1119505	5 G 4		25	50	100			500	1000	12.1	192.0	294
1119507	7 G 4		25	50	100			500	1000	13.4	269.0	407
1119511	11 G 4			50	100			500	1000	17.6	422.0	634
1119512	12 G 4			50	100			500	1000	18.1	461.0	660
1119603	3 G 6		25	50	100			500	1000	11.7	172.8	289
1119604	4 G 6		25	50	100			500	1000	13.0	230.0	365
1119605	5 G 6		25	50	100			500	1000	14.5	288.0	447
1119607	7 G 6		25	50	100			500	1000	16.0	403.0	600
1119613	3 G 10		25	50	100			500	1000	14.6	288.0	466
1119614	4 G 10		25	50	100			500	1000	16.2	384.0	590
1119615	5 G 10		25	50	100			500	1000	18.1	480.0	722
1119617	7 G 10		25	50	100			500	1000	20.0	672.0	968
1119624	4 G 16			50	100			500		18.8	614.0	1,087
1119625	5 G 16			50	100			500		21.2	768.0	1,370
1119627	7 G 16			50	100			500		23.4	1,075.0	1,779
1119634	4 G 25			50	100			500		23.5	960.0	1,582
1119635	5 G 25			50	100			500		26.4	1,200.0	1,998
1119636	7 G 25			50	100			500		29.1	1,680.0	2,825
1119644	4 G 35			50	100			500		26.4	1,344.0	2,106
1119645	5 G 35			50	100			500		29.6	1,680.0	2,635

Copper price basis: EUR 150 / 100 kg

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)



Wide-range use

PVC sheath and numbered cores



ÖLFLEX® CLASSIC 110 CY



Info

- EMC compliant
- VDE Reg. No. 7030

Benefits

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

Application range

- Plant engineering and construction
Industrial machinery
Air conditioning installations
- Conveying and transport systems
- In EMI critical environment
(electromagnetic interference)

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Good chemical resistance
- High coverage degree of the screen
low transfer impedance
(max. 250 Ω/km at 30 MHz)

Approvals (Norm references)



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

Product Make-up

- Fine strands of bare copper wires
- PVC insulation LAPP P8/1
- PVC inner sheath, grey
- Screen made of tinned copper wire braid
- PVC outer sheath, transparent

Technical data

- Core identification code**
black with white numbers acc. to VDE 0293
- Specific insulation resistance**
> 20 GΩm x cm
- Conductor stranding**
fine wire acc. to
VDE 0295 Kl.5 / IEC 60228 Cl.5
- Minimum bending radius**
occasional flexing: 20 x cable diameter
fixed installation: 6 x cable diameter
- Rated voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with protective conductor GN/YE
X = without protective conductor
- Range of temperature**
occasional flexing: -5 °C to +70 °C
fixed installation: -40 °C to +80 °C
- VDE-tested**
VDE Reg. No. 7030 for sizes
up to and including 60 cores

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CLASSIC 110 CY; U₀/U: 300/500 V				
1135752	2 X 0.5	7.0	41.0	75
1135003	3 G 0.5	7.3	45.5	83
1135753	3 X 0.5	7.3	45.5	83
1135004	4 G 0.5	7.9	55.0	99
1135754	4 X 0.5	7.9	55.0	99
1135005	5 G 0.5	8.4	66.0	112
1135755	5 X 0.5	8.4	66.0	112
1135007	7 G 0.5	8.9	80.5	132
1135757	7 X 0.5	8.9	80.5	132
1135012	12 G 0.5	11.3	138.5	202
1135762	12 X 0.5	11.3	138.5	202
1135018	18 G 0.5	13.3	156.4	289
1135025	25 G 0.5	15.2	250.0	378
1135030	30 G 0.5	16.1	297.0	429
1135040	40 G 0.5	18.2	343.0	542
1135802	2 X 0.75	7.4	46.0	86
1135103	3 G 0.75	7.9	57.9	100
1135803	3 X 0.75	7.9	57.9	100
1135104	4 G 0.75	8.4	64.0	115
1135804	4 X 0.75	8.4	64.0	115
1135105	5 G 0.75	8.9	77.4	130
1135805	5 X 0.75	8.9	77.4	130
1135107	7 G 0.75	9.7	102.0	161
1135807	7 X 0.75	9.7	102.0	161
1135112	12 G 0.75	12.3	177.0	247
1135812	12 X 0.75	12.3	177.0	247
1135118	18 G 0.75	14.5	243.0	356
1135818	18 X 0.75	14.5	243.0	356
1135125	25 G 0.75	16.6	307.3	465
1135134	34 G 0.75	18.9	323.2	601
1135840	40 X 0.75	20.5	369.4	734
1135141	41 G 0.75	20.6	488.0	728
1135852	2 X 1	7.9	56.0	98
1135203	3 G 1	8.2	65.3	111
1135853	3 X 1	8.2	65.3	111
1135204	4 G 1	8.7	78.1	130
1135854	4 X 1	8.7	78.1	130
1135205	5 G 1	9.5	89.4	153
1135207	7 G 1	10.2	113.3	185
1135212	12 G 1	13.3	188.1	307
1135216	16 G 1	14.6	216.0	390
1135218	18 G 1	15.5	286.0	418
1135225	25 G 1	17.5	388.5	544

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
1135234	34 G 1	20.3	505.0	738
1135241	41 G 1	22.0	578.0	864
1135250	50 G 1	23.8	688.0	1,011
1135902	2 X 1.5	8.5	65.0	117
1135303	3 G 1.5	8.9	83.0	136
1135903	3 X 1.5	8.9	83.0	136
1135304	4 G 1.5	9.6	100.0	163
1135904	4 X 1.5	9.6	100.0	163
1135305	5 G 1.5	10.3	125.0	188
1135905	5 X 1.5	10.3	125.0	188
1135307	7 G 1.5	11.3	149.0	237
1135907	7 X 1.5	11.3	149.0	237
1135312	12 G 1.5	14.8	280.0	393
1135318	18 G 1.5	17.2	389.0	538
1135325	25 G 1.5	20.1	535.0	745
1135334	34 G 1.5	22.8	702.0	964
1135341	41 G 1.5	24.7	844.6	1,123
1135350	50 G 1.5	27.1	1,006.0	1,372
1135402	2 X 2.5	9.9	112.0	202
1135403	3 G 2.5	10.3	146.0	192
1135404	4 G 2.5	11.3	167.0	233
1135405	5 G 2.5	12.6	200.0	283
1135407	7 G 2.5	13.9	288.0	371
1135412	12 G 2.5	17.6	477.3	585
1135502	2 X 4	11.4	120.0	247
1135504	4 G 4	13.4	237.0	347
1135505	5 G 4	14.7	280.0	413
1135602	2 X 6	13.6	180.0	353
1135604	4 G 6	15.8	318.0	485
1135605	5 G 6	17.0	441.0	702
1135607	7 G 6	18.8	530.0	950
1135702	2 X 10	16.4	256.0	492
1135615	3 G 10	17.4	362.4	507
1135614	4 G 10	19.0	558.0	735
1135616	5 G 10	21.2	595.0	847
1135617	7 G 10	23.2	796.0	1,039
1135622	2 X 16	18.6	390.0	698
1135624	4 G 16	22.2	804.0	1,395
1135623	5 G 16	26.7	935.0	1,440
1135626	4 G 25	28.7	1,161.0	1,730
1135627	5 G 25	31.6	1,400.0	2,090
1135625	4 G 35	32.0	1,543.0	2,210
1135628	5 G 35	35.5	1,901.0	2,710

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Comparable products

- ÖLFLEX® CLASSIC 110 CY BLACK 0,6/1 kV see page 21



ÖLFLEX® CLASSIC 110 SY



Info

- With steel wire braid
- VDE registered



Benefits

- Additional mechanical protection due to steel wire braid
- High electrical performance due to 4kV test voltage

Application range

- Plant engineering and construction
- Industrial machinery
- Air conditioning installations
- Areas with increased mechanical stress requirements
- Fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Good chemical resistance

Approvals (Norm references)



Product Make-up

- Fine strands of bare copper wires
- PVC insulation LAPP P8/1
- PVC inner sheath, grey
- Oxidation protected steel wire braid
- PVC outer sheath, transparent

Technical data

- Core identification code**
black with white numbers acc. to VDE 0293
- Specific insulation resistance**
> 20 GΩm x cm
- Conductor stranding**
fine wire acc. to VDE 0295 Kl.5 / IEC 60228 Cl.5
- Minimum bending radius**
occasional flexing: 20 x cable diameter
fixed installation: 6 x cable diameter
- Rated voltage**
U₀/U: 300/500 V
- Test voltage**
4000 V
- Protective conductor**
G = with protective conductor GN/YE
X = without protective conductor
- Range of temperature**
occasional flexing: -5 °C to +70 °C
fixed installation: -40 °C to +80 °C
- VDE-tested**
VDE Reg. No. 7030 for sizes up to and including 60 cores

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CLASSIC 110 SY; U₀/U: 300/500 V				
1125752	2 X 0.5	7.8	10.0	87
1125003	3 G 0.5	8.1	15.0	95
1125004	4 G 0.5	8.5	19.2	107
1125005	5 G 0.5	9.2	24.0	123
1125007	7 G 0.5	9.7	33.6	147
1125010	10 G 0.5	11.6	48.0	196
1125012	12 G 0.5	11.9	58.0	213
1125014	14 G 0.5	12.5	67.0	237
1125018	18 G 0.5	13.9	86.4	291
1125021	21 G 0.5	14.9	101.0	332
1125025	25 G 0.5	15.6	120.0	375
1125030	30 G 0.5	16.5	144.0	422
1125040	40 G 0.5	18.8	192.0	545
1125061	61 G 0.5	21.9	293.0	773
1125802	2 X 0.75	8.2	14.4	97
1125103	3 G 0.75	8.5	21.6	108
1125104	4 G 0.75	9.2	28.8	126
1125105	5 G 0.75	9.7	36.0	146
1125107	7 G 0.75	10.3	50.0	172
1125109	9 G 0.75	12.4	65.0	224
1125112	12 G 0.75	12.9	86.0	260
1125115	15 G 0.75	14.1	108.0	315
1125118	18 G 0.75	14.9	130.0	355
1125125	25 G 0.75	17.0	180.0	465
1125134	34 G 0.75	19.3	245.0	596
1125150	50 G 0.75	22.8	360.0	832
1125852	2 X 1	8.5	19.2	106
1125203	3 G 1	8.8	28.8	119
1125204	4 G 1	9.5	38.4	141
1125205	5 G 1	10.1	48.0	164
1125207	7 G 1	11.0	67.0	200
1125208	8 G 1	12.5	77.0	234
1125209	9 G 1	13.2	86.0	260
1125212	12 G 1	13.9	115.0	309
1125214	14 G 1	14.4	134.0	345
1125218	18 G 1	15.9	173.0	415
1125220	20 G 1	16.8	192.0	455
1125225	25 G 1	18.1	240.0	548

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
1125234	34 G 1	20.5	326.0	714
1125241	41 G 1	22.2	394.0	832
1125250	50 G 1	24.2	480.0	987
1125265	65 G 1	27.2	624.0	1,250
1125902	2 X 1.5	9.3	29.0	128
1125303	3 G 1.5	9.7	43.0	151
1125304	4 G 1.5	10.2	58.0	173
1125305	5 G 1.5	11.1	72.0	202
1125307	7 G 1.5	11.9	101.0	248
1125308	8 G 1.5	14.0	115.0	301
1125312	12 G 1.5	15.4	173.0	396
1125314	14 G 1.5	15.9	202.0	438
1125318	18 G 1.5	17.6	259.0	538
1125325	25 G 1.5	20.3	360.0	713
1125332	32 G 1.5	22.1	461.0	876
1125341	41 G 1.5	24.9	591.0	1,101
1125350	50 G 1.5	27.1	720.0	1,305
1125403	3 G 2.5	11.1	72.0	206
1125404	4 G 2.5	12.1	96.0	249
1125405	5 G 2.5	13.2	120.0	295
1125407	7 G 2.5	14.3	168.0	373
1125412	12 G 2.5	18.2	288.0	586
1125418	18 G 2.5	21.4	432.0	823
1125425	25 G 2.5	24.4	600.0	1,093
1125503	3 G 4	12.7	115.0	285
1125504	4 G 4	14.0	154.0	348
1125505	5 G 4	15.1	192.0	410
1125507	7 G 4	16.4	269.0	519
1125604	4 G 6	16.2	230.0	482
1125605	5 G 6	17.7	288.0	579
1125607	7 G 6	19.2	403.0	740
1125614	4 G 10	19.4	384.0	731
1125615	5 G 10	21.5	480.0	889
1125617	7 G 10	23.4	672.0	1,146
1125624	4 G 16	22.4	614.0	1,384
1125625	5 G 16	24.6	768.0	1,740
1125626	4 G 25	28.9	960.0	1,680
1125630	5 G 25	31.8	1,200.0	2,050
1125629	4 G 35	32.2	1,344.0	2,170

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Comparable products

- ÖLFLEX® CLASSIC 100 SY see page 15

Accessories

- SKINTOP® MS-M see page 110



Wide-range use

PVC sheath and numbered cores



ÖLFLEX® CLASSIC 110 BLACK 0,6/1kV

LAPP KABEL STUTTGART ÖLFLEX® CLASSIC 110 black 0,6/1 kV CE



Info

- Suitable for outdoor applications

Benefits

- High electrical performance due to 4kV test voltage

Application range

- Plant engineering and construction
Industrial machinery
Air conditioning installations
Power station
- Fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Outdoor use suitable considering the temperature range
- Suitable for direct burial

Product features

- Flame-retardant acc. to IEC 60332-1-2
- UV- and weather resistant

Approvals (Norm references)



Product Make-up

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

Technical data



Core identification code

black with white numbers acc. to VDE 0293



Based on

cores acc. to VDE 0281 (H07V-K)
sheath acc. to Italian standard
CEI-UNEL 35755 + 35756



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

fine wire acc. to
VDE 0295 Kl.5 / IEC 60228 Cl.5



Minimum bending radius

occasional flexing: 15 x cable diameter
fixed installation: 4 x cable diameter



Rated voltage

U_c/U: 600/1000 V

Test voltage

4000 V



Protective conductor

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



Range of temperature

occasional flexing: -5 °C to +70 °C
fixed installation: -40 °C to +80 °C

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CLASSIC 110 BK U0/U: 600/1000 V				
1120232	2 X 0.75	8.3	14.4	81
1120233	3 G 0.75	8.7	21.6	93
1120234	3 X 0.75	8.7	21.6	93
1120235	4 G 0.75	9.2	29.0	108
1120237	5 G 0.75	9.9	36.0	126
1120241	7 G 0.75	10.7	51.0	162
1120248	12 G 0.75	13.4	86.0	236
1120251	18 G 0.75	15.4	130.0	334
1120259	41 G 0.75	21.6	296.0	713
1120266	2 X 1	8.6	19.2	98
1120267	3 G 1	9.0	29.0	112
1120268	3 X 1	9.0	29.0	112
1120269	4 G 1	9.6	38.4	131
1120270	4 X 1	9.6	38.4	131
1120271	5 G 1	10.4	48.0	152
1120274	7 G 1	11.1	67.0	196
1120280	12 G 1	14.0	115.0	286
1120284	18 G 1	16.1	173.0	419
1120290	25 G 1	18.6	240.0	572
1120294	34 G 1	21.3	326.0	764
1120298	41 G 1	23.2	394.0	891
1120306	2 X 1.5	9.6	29.0	123
1120307	3 G 1.5	10.1	43.0	144
1120308	3 X 1.5	10.1	43.0	144
1120309	4 G 1.5	10.8	58.0	170
1120311	5 G 1.5	11.7	72.0	199
1120314	7 G 1.5	12.6	101.0	261
1120320	12 G 1.5	16.1	173.0	399
1120322	14 G 1.5	17.0	202.0	372
1120324	18 G 1.5	18.8	259.0	547
1120328	25 G 1.5	21.7	360.0	770

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
1120330	34 G 1.5	24.9	490.0	996
1120333	50 G 1.5	29.8	720.0	1,427
1120339	2 X 2.5	10.8	48.0	147
1120340	3 G 2.5	11.3	72.0	182
1120342	4 G 2.5	12.2	96.0	225
1120343	4 X 2.5	12.2	96.0	225
1120344	5 G 2.5	13.3	120.0	266
1120346	7 G 2.5	14.4	168.0	354
1120349	12 G 2.5	18.7	288.0	540
1120350	14 G 2.5	19.8	336.0	542
1120351	18 G 2.5	22.0	432.0	788
1120353	25 G 2.5	25.8	600.0	1,094
1120360	4 G 4	13.8	154.0	324
1120361	5 G 4	15.1	192.0	385
1120362	7 G 4	16.4	269.0	513
1120366	4 G 6	15.1	230.0	442
1120367	5 G 6	16.8	288.0	526
1120368	7 G 6	18.2	403.0	705
1120370	4 G 10	18.7	384.0	707
1120371	5 G 10	20.7	480.0	881
1120374	4 G 16	21.3	614.0	1,100
1120375	5 G 16	23.6	768.0	1,600
1120376	7 G 16	26.2	1,075.0	1,890
1120378	4 G 25	26.2	960.0	1,600
1120379	5 G 25	29.0	1,200.0	2,050
1120382	4 G 35	29.1	1,344.0	2,400
1120383	5 G 35	32.5	1,680.0	2,900
1120385	4 G 50	35.6	1,920.0	3,400
1120387	4 G 70	40.7	2,688.0	5,050
1120389	4 G 95	46.8	3,648.0	6,010
1120390	4 G 120	53.5	4,608.0	7,500

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Accessories

- SKINTOP® MS-M see page 110



ÖLFLEX® CLASSIC 110 CY BLACK 0,6/1 kV



Info

- Suitable for outdoor applications
- EMC compliant

Benefits

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

Application range

- Plant engineering and construction
- Industrial machinery
- Air conditioning installations
- Power station
- In EMI critical environment (electromagnetic interference)
- Fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Outdoor use suitable considering the temperature range
- Suitable for direct burial

Product features

- Flame-retardant acc. to IEC 60332-1-2
- UV- and weather resistant
- High coverage degree of the screen low transfer impedance (max. 250 Ω/km at 30 MHz)

Approvals (Norm references)



Product Make-up

- Fine strands of bare copper wires
- PVC insulation LAPP P8/1
- PVC inner sheath, black
- Screen made of tinned copper wire braid
- PVC outer sheath, black (RAL 9005)

Technical data

- Core identification code**
black with white numbers acc. to VDE 0293
- Based on**
cores acc. to VDE 0281 (H07V-K)
sheath acc. to Italian standard CEI-UNEL 35755 + 35756
- Specific insulation resistance**
> 20 GΩm x cm
- Conductor stranding**
fine wire acc. to VDE 0295 Kl.5 / IEC 60228 Cl.5
- Minimum bending radius**
occasional flexing: 20 x cable diameter
fixed installation: 6 x cable diameter
- Rated voltage**
U₀/U: 600/1000 V
- Test voltage**
4000 V
- Protective conductor**
G = with protective conductor GN/YE
X = without protective conductor
- Range of temperature**
occasional flexing: -5 °C to +70 °C
fixed installation: -40 °C to +80 °C

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CLASSIC 110 CY BK U0/U: 600/1000V				
1121232	2 X 0.75	10.5	46.0	183
1121233	3 G 0.75	10.9	56.0	210
1121235	4 G 0.75	11.4	67.0	238
1121236	4 X 0.75	11.4	67.0	238
1121237	5 G 0.75	12.1	78.0	272
1121241	7 G 0.75	12.9	97.0	315
1121247	12 G 0.75	15.8	168.0	464
1121251	18 G 0.75	18.0	229.0	616
1121254	25 G 0.75	20.7	296.0	762
1121266	2 X 1	10.8	52.0	198
1121267	3 G 1	11.2	66.0	228
1121268	3 X 1	11.2	66.0	228
1121269	4 G 1	11.8	79.0	261
1121270	4 X 1	11.8	79.0	261
1121271	5 G 1	12.6	93.0	300
1121274	7 G 1	13.3	117.0	335
1121280	12 G 1	16.4	204.0	522
1121284	18 G 1	18.7	280.0	687
1121290	25 G 1	21.6	369.0	884
1121306	2 X 1.5	11.8	69.0	243
1121307	3 G 1.5	12.3	87.0	273
1121308	3 X 1.5	12.3	87.0	273
1121309	4 G 1.5	13.0	102.0	290
1121310	4 X 1.5	13.0	102.0	290
1121311	5 G 1.5	13.9	125.0	352

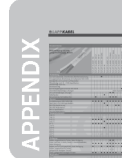
Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
1121314	7 G 1.5	15.0	180.0	448
1121320	12 G 1.5	18.7	281.0	690
1121324	18 G 1.5	21.8	391.0	938
1121328	25 G 1.5	25.1	518.0	1,180
1121340	3 G 2.5	13.5	123.0	354
1121342	4 G 2.5	14.6	168.0	413
1121344	5 G 2.5	15.7	204.0	515
1121346	7 G 2.5	17.0	265.0	619
1121349	12 G 2.5	21.7	421.0	936
1121360	4 G 4	16.2	238.0	587
1121361	5 G 4	17.7	302.0	689
1121362	7 G 4	19.0	396.0	828
1121367	4 G 6	17.7	318.0	715
1121368	5 G 6	19.2	419.0	862
1121369	7 G 6	21.2	559.0	1,105
1121372	4 G 10	21.7	574.0	1,188
1121373	5 G 10	23.0	612.0	1,020
1121377	4 G 16	24.3	809.0	1,656
1121378	5 G 16	26.7	935.0	1,440
1121381	4 G 25	29.8	1,165.0	2,179
1121382	5 G 25	31.6	1,400.0	2,090
1121385	4 G 35	32.7	1,683.0	2,893
1121388	4 G 50	39.6	2,368.0	4,094
1121391	4 G 70	44.5	3,261.0	5,467
1121394	4 G 95	51.0	4,055.0	5,849
1121397	4 G 120	58.1	5,225.0	7,509

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)



Harsh use conditions

Increased mechanical and chemical resistance



ÖLFLEX® 440 P

TPE-insulated, numbered, PUR sheath, approved



Info

- All-weather control cable
- High mechanical strength
- MUD res. acc. IEC61892-4 Annex D

Benefits

- Protects against water and dirt
- Fire: low corrosive smoke emission
- Cold flexible
- Wear-resistant

Application range

- Construction machinery
- Machine tools
- Especially in wet area of machine tools and transfer lines under normal mechanical stress.
- Production plants
- Indoors and outdoors

Product features

- Oil resistant and adhesion-free
- Abrasion and cut resistant
- Hydrolysis-resistant
- Halogen-free
- Flame-retardant (IEC 60332.1-2)

Approvals (Norm references)



Product Make-up

- Fine strands of tinned copper wires
- Core insulation: TPE
- Special polyurethane sheath (PUR)
- Silver grey (RAL 7001)

Technical data



Core identification code

black with white numbers acc. to VDE 0293



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

fine wire acc. to

VDE 0295 Class 5

IEC 60228 Cl.5



Minimum bending radius

occasional flexing: 15 x cable diameter

Static:

4 x cable diameter



Rated voltage

U0/U:

300/500 V



Test voltage

3000 V



Protective conductor

G = with protective conductor GN/YE

X = without protective conductor



Range of temperature

Flexing: -40 °C to +90 °C

Fixed installation: -50 °C to +90 °C



VDE-tested

VDE Reg. No. 6582

4 - 6mm²: based on VDE 0281/0282

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® 440 P				
0012800	2 X 0.5	5.9	10.0	39
0012801	3 G 0.5	6.2	14.0	46
0012802	4 G 0.5	6.9	19.0	56
0012803	5 G 0.5	7.4	24.0	65
0012804	7 G 0.5	9.1	34.0	92
0012805	12 G 0.5	11.3	58.0	149
0012806	18 G 0.5	13.2	86.0	207
0012807	25 G 0.5	15.0	120.0	274
0012813	2 X 0.75	6.4	14.0	48
0012814	3 G 0.75	6.8	22.0	58
0012815	4 G 0.75	7.4	29.0	67
0012816	5 G 0.75	8.6	36.0	88
0012817	7 G 0.75	10.0	50.0	119
0012818	12 G 0.75	12.4	86.0	193
0012819	18 G 0.75	14.4	130.0	269
0012820	25 G 0.75	17.2	180.0	378
0012825	2 X 1	6.8	19.0	57
0012826	3 G 1	7.2	29.0	69
0012827	4 G 1	8.2	38.0	90
0012828	5 G 1	9.0	48.0	107

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
0012829	7 G 1	11.1	67.0	151
0012830	12 G 1	13.2	115.0	233
0012831	18 G 1	15.4	173.0	328
0012832	25 G 1	19.0	240.0	479
0012833	34 G 1	21.8	326.0	616
0012834	41 G 1	23.4	394.0	727
0012837	2 X 1.5	7.4	29.0	73
0012838	3 G 1.5	8.3	43.0	96
0012839	4 G 1.5	9.0	58.0	118
0012840	5 G 1.5	9.8	72.0	140
0012841	7 G 1.5	12.2	101.0	197
0012842	12 G 1.5	14.5	173.0	309
0012843	18 G 1.5	17.6	259.0	458
0012844	25 G 1.5	20.7	360.0	635
0012846	41 G 1.5	26.3	590.0	1,003
0012850	3 G 2.5	9.7	72.0	142
0012851	4 G 2.5	11.0	96.0	184
0012852	5 G 2.5	12.1	120.0	220
0012853	7 G 2.5	14.2	168.0	294
0012854	12 G 2.5	17.8	288.0	489

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)



ÖLFLEX® 440 CP

TPE-insulated, numbered, shielded, PUR sheath, approved



Info

- All-weather control cable
- High mechanical strength
- MUD res. acc. IEC61892-4 Annex D

Benefits

- Protects against water and dirt
- Fire: low corrosive smoke emission
- Cold flexible
- Wear-resistant
- EMC compliant

Application range

- Construction machinery
- Machine tools
- Especially in wet area of machine tools and transfer lines under normal mechanical stress.
- Production plants
- Indoors and outdoors

Product features

- Oil resistant and adhesion-free

- Abrasion and cut resistant
- Hydrolysis-resistant
- Halogen-free
- Flame-retardant (IEC 60332.1-2)

Approvals (Norm references)



Product Make-up

- Fine strands of tinned copper wires
- Core insulation: TPE
- Inner sheath: TPE
- Screen made of tinned copper wire braid
- Special polyurethane sheath (PUR)
- Silver grey (RAL 7001)

Technical data

- Core identification code**
black with white numbers acc. to VDE 0293
- Specific insulation resistance**
> 20 GOhm x cm
- Conductor stranding**
Fine wire in acc. with VDE 0295, Cl. 5
- Minimum bending radius**
occasional flexing: 15 x cable diameter
- Rated voltage**
300/500 V
- Test voltage**
3000 V
- Protective conductor**
G = with protective conductor GN/YE
X = without protective conductor
- Range of temperature**
Flexing: -40 °C to +90 °C
Fixed installation: -50 °C to +90 °C
- VDE-tested**
VDE Reg. No. 6582
4 - 6mm²: based on VDE 0281/0282

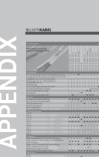
Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® 440 CP				
0012901	3 G 0.5	8.3	44.0	100
0012902	4 G 0.5	8.8	52.0	120
0012903	5 G 0.5	9.7	61.0	139
0012904	7 G 0.5	11.2	75.0	175
0012906	12 G 0.5	13.7	131.0	276
0012907	18 G 0.5	15.7	168.0	376
0012908	25 G 0.5	18.5	212.0	485
0012911	2 X 0.75	8.4	45.0	104
0012912	3 G 0.75	8.7	52.0	119
0012913	4 G 0.75	9.5	67.0	142
0012914	5 G 0.75	10.2	75.0	165
0012915	7 G 0.75	11.9	96.0	210
0012917	12 G 0.75	14.5	160.0	331
0012919	25 G 0.75	20.3	283.0	596
0012925	2 X 1	8.7	49.0	117
0012926	3 G 1	9.3	60.0	132
0012927	4 G 1	9.9	78.0	163
0012928	5 G 1	10.8	88.0	187
0012929	7 G 1	12.8	115.0	255
0012931	12 G 1	15.4	201.0	419
0012932	18 G 1	17.7	267.0	546
0012933	25 G 1	21.5	351.0	738
0012934	34 G 1	23.8	498.0	972
0012940	2 X 1.5	9.5	68.0	159
0012941	3 G 1.5	9.9	83.0	180
0012942	4 G 1.5	10.8	102.0	217
0012943	5 G 1.5	11.6	119.0	265
0012944	7 G 1.5	14.2	186.0	331
0012945	12 G 1.5	16.8	264.0	554
0012946	18 G 1.5	20.0	379.0	782
0012947	25 G 1.5	23.5	534.0	1,059
0012949	41 G 1.5	28.9	803.0	1,579
0012950	3 G 2.5	11.4	121.0	264
0012951	4 G 2.5	12.6	145.0	307
0012952	5 G 2.5	14.0	205.0	413
0012953	7 G 2.5	16.4	259.0	533
0012954	12 G 2.5	21.0	407.0	795

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)



Power chain applications

SERVO-applications - power drive systems



ÖLFLEX® SERVO FD 781 P

Low capacity, halogen-free highly flexible PUR servo motor cable

LAPP KABEL STUTTGART ÖLFLEX-SERVO FD® 781P 4G 2,5 DESINA CE



Info

- MUD res. acc. IEC61892-4 Annex D
- Amendment: out-phased product!
<Trimmed size range>

ÖLFLEX® SERVO FD 781 CP

Screened, low capacity, halogen-free highly flexible PUR servo motor cable

LAPP KABEL STUTTGART ÖLFLEX-SERVO FD® 781CP 4G 2,5 DESINA CE



Info

- EMC conform
- Amendment: out-phased product!
<Trimmed size range>
- MUD res. acc. IEC61892-4 Annex D

Benefits

- Reasonable price-performance ratio
- Flexible down to -30 °C

Application range

ÖLFLEX® SERVO FD 781 P

- Power circuits for electrical equipment in automation engineering
- For machine internal wiring of power circuits
- In dry, damp or wet interiors under medium mechanical load conditions
- Outdoor use suitable considering the temperature range
- For usage within 690V industrial power circuits

ÖLFLEX® SERVO FD 781 CP

- Connecting cable between Frequency converter and motor
- For machine internal wiring of power circuits
- In dry, damp or wet interiors under medium mechanical load conditions
- Outdoor use suitable considering the temperature range

Product features

- Its low capacity design allows longer cable lengths between the frequency converter and motor.
- Oil-resistant

- Halogen free and flame retardant (IEC 60332-1-2)
- Low adhesive surface
- Designed for up to 5 million bending change cycles in the power chain

Approvals (Norm references)



- For travel distances up to 10m.
- Usage in Power Chains: Please comply with the assembly guidelines Table T3
- Conform to DESINA®

Product Make-up

ÖLFLEX® SERVO FD 781 P

- Extra fine strands of plain copper wires
- Core insulation: Polypropylene (PP)
- Cores twisted in short lay lengths
- Nonwoven wrapping
- Polyurethane sheath (PUR) black (RAL 9005)

ÖLFLEX® SERVO FD 781 CP

- Extra fine strands of plain copper wires
- Core insulation: Polypropylene (PP)
- Cores twisted in short lay lengths
- Nonwoven wrapping
- Screen made of tinned copper wire braid
- Polyurethane sheath (PUR) orange (RAL 2003)

Technical data



Core identification code

black with white numbers acc. to VDE 0293



Based on

VDE 0250/0281/0282



Specific insulation resistance

> 20 TΩm x cm



Conductor stranding

Extra fine wire in acc. with VDE 0295 Cl.6/IEC 60228 Cl. 6



Minimum bending radius

flexible: 7,5 x outside diameter

Static:

4 x cable diameter



Rated voltage

600/1000 V



Test voltage

4000 V



Protective conductor

G = with green/yellow earthing conductor



Range of temperature

Flexing: -30 °C to +70 °C

fixed installation: -40 °C to +80 °C

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® SERVO FD 781 P				
0037200	4 G 1.5	9.3	57.6	118
0037202	4 G 4	13.1	153.6	264
0037208	4 G 50	37.5	1,920.0	2,372

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® SERVO FD 781 CP				
0037210	4 G 1.5	10.1	89.0	158
0037211	4 G 2.5	12.3	133.8	233
0037212	4 G 4	13.9	210.9	335
0037213	4 G 6	15.8	295.5	456
0037216	4 G 25	29.7	1,118.1	1,654

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)



ÖLFLEX® SERVO FD 781 CY

Cost-effective, low capacitance, screened servo motor cable



Info

- EMC conform

LAPP KABEL STUTTGART ÖLFLEX-SERVO-FD 781 CY 4G2,5
DESINA CE



Application range

- Connecting cable between Frequency converter and motor
- For machine internal wiring of power circuits
- In dry, damp or wet interiors under medium mechanical load conditions
- Outdoor use only with UV protection and in accordance with the temperature range.

Product features

- Its low capacity design allows longer cable lengths between the frequency converter and motor.
- Oil-resistant
- Flame-retardant (IEC 60332.1-2)
- Low adhesive surface
- Designed for up to 5 million bending change cycles in the power chain

Approvals (Norm references)



- For travel distances up to 10m.
- Usage in Power Chains: Please comply with the assembly guidelines Table T3

Product Make-up

- Extra fine strands of plain copper wires
- Core insulation: Polypropylene (PP)
- Cores twisted in short lay lengths
- Nonwoven wrapping
- Screen made of tinned copper wire braid
- PVC outer sheath, orange (RAL 2003)

Technical data



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



Based on
VDE 0250/0281/0282



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
Extra fine wire in acc. with VDE 0295 Cl.6/IEC 60228 Cl. 6



Minimum bending radius
flexible: 7,5 x outside diameter
Static:
4 x cable diameter



Rated voltage
U0/U:
0.6/1kV



Test voltage
4000 V



Protective conductor
G = with green/yellow earthing conductor



Range of temperature
Flexing: -5 °C to +70 °C
fixed installation: -40 °C to +80 °C

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® SERVO FD 781 CY				
0036320	4 G 1.5	10.1	89.0	157
0036321	4 G 2.5	12.3	133.8	233
0036322	4 G 4	13.9	210.9	335
0036324	4 G 10	20.2	488.2	747
0036325	4 G 16	24.5	744.8	1,109
0036327	4 G 35	34.3	1,565.4	2,264
0036328	4 G 50	39.3	2,174.9	3,090

Copper price basis: EUR 150 / 100 kg

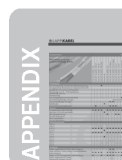
Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Comparable products

- ÖLFLEX® SERVO FD 781 CP see page 24

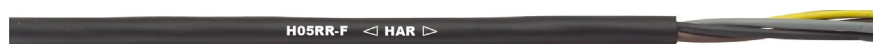


Harsh use conditions

Rubber cables



H05RR-F



Info

- Harmonised (HAR)
- International use

H05RN-F



Info

- Harmonised (HAR)
- International use

H07RN-F



Info

- Harmonised (HAR)
- International use

■ Benefits

H05RR-F

- Light duty rubber-sheathed cable
- For light workshop devices with light to medium stress

H05RN-F

- Medium-duty, rubber sheathed cable
- For lightweight workshop tools subject to medium loads

H07RN-F

- Heavy-duty, rubber-sheathed cable
- High stresses
- Allowed up to 1000 V (0,6/1 kV) alternating voltage within protected and fixed installation
- Arrangements from single core rubber-sheathed cables H07RN-F can be used for short-circuit and short-to-ground proof installation in accordance with VDE 0100 Part 520

■ Application range

H05RR-F

- Hand-held equipment
- Dry and damp interiors, as well as for temporary outdoor use

H05RN-F

- Hand-held equipment
- Dry and damp interiors, as well as outdoor use

H07RN-F

- Hand-held equipment
- Tools and agricultural machinery
- Dry and damp interiors, as well as outdoors and temporary in industrial water

■ Product features

H05RR-F

- Flame retardant

H05RN-F

- Flame-retardant acc. to IEC 60332-1-2
- Oil-resistant acc. to EN 60811-2-1

H07RN-F

- Flame-retardant acc. to IEC 60332-1-2
- Oil-resistant acc. to EN 60811-2-1

■ Approvals (Norm references)



■ Product Make-up

H05RR-F

- Copper wire acc. to HAR bare or tinned
- Core insulation of rubber type EI 4
- Outer jacket of rubber type EM 3

H05RN-F

- Copper wire acc. to HAR bare or tinned
- Core insulation of rubber type EI 4
- Outer jacket of rubber type EM 2

H07RN-F

- Copper wire acc. to HAR bare or tinned
- Core insulation of rubber type EI 4
- Outer jacket of rubber type EM 2

■ Technical data



Core identification code

up to 5 cores: acc. to VDE 0293-308 (table T4) starting at 6 cores: black with white numbers



Approvals

VDE 0282 Part 4 / HD 22.4 S4



Specific insulation resistance

1 GOhm x cm



Conductor stranding

fine wire acc. to VDE 0295 Cl.5 / IEC 60228 Cl. 5



Minimum bending radius

flexible use: 6 x outer diameter



Rated voltage

H05RR-F

U₀/U: 300/500 V

H05RN-F

U₀/U: 300/500 V

H07RN-F

U₀/U: 450/750 V

in protected and fixed installations:

U₀/U: 600/1000 V



Test voltage

H05RR-F

2000 V

H05RN-F

2000 V

H07RN-F

2500 V



Protective conductor

G = with protective conductor GN/YE

X = without protective conductor



Current rating

acc. to VDE 0298 part 4 Tab. 11 and 13



Range of temperature

flexible use: -25°C to +60°C

H05RR-F / H05RN-F / H07RN-F

Part number	Number of cores and mm² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
H05RR-F U0/U: 300/500 V				
1600203	2 X 0.75	5.7 - 7.4	14.4	61
1600207	3 G 0.75	6.2 - 8.1	21.6	75
1600204	2 X 1	6.1 - 8.0	19.0	73
1600208	3 G 1	6.5 - 8.5	29.0	86
16002113	4 G 1	7.1 - 9.3	38.0	105
1600205	2 X 1.5	7.6 - 9.8	29.0	115
1600200	3 G 1.5	8.0 - 10.4	43.0	135
16002013	4 G 1.5	9.0 - 11.6	58.0	165
16002023	5 G 1.5	9.8 - 12.7	72.0	190
1600206	2 X 2.5	9.0 - 11.6	48.0	160
1600209	3 G 2.5	9.6 - 12.4	72.0	190
16002123	4 G 2.5	10.7 - 13.8	96.0	235
16002133	5 G 2.5	11.9 - 15.3	120.0	285
H05RN-F U0/U: 300/500 V (4 core version as S05RN-F)				
1600250	2 X 0.75	5.7 - 7.4	14.4	80
1600252	3 G 0.75	6.2 - 8.1	21.6	95
16002583	4 G 0.75	6.8 - 8.8	30.0	105
1600251	2 X 1	6.1 - 8.0	19.0	95
1600253	3 G 1	6.5 - 8.5	29.0	115
H07RN-F U0/U: 450/750 V				
1600117	3 G 1	8.3 - 10.7	29.0	130
1600199	2 X 1.5	8.5 - 11.0	29.0	135
1600103	3 G 1.5	9.2 - 11.9	43.0	165
16001233	4 G 1.5	10.2 - 13.1	58.0	200
16001043	5 G 1.5	11.2 - 14.4	72.0	240
1600151	7 G 1.5	14.0 - 17.5	101.0	385
1600148	12 G 1.5	17.6 - 22.4	173.0	516
1600259	19 G 1.5	20.7 - 26.3	274.0	800
1600166	24 G 1.5	24.3 - 30.7	346.0	882
1600263	25 G 1.5	25.1 - 25.9	360.0	918
1600187	2 X 2.5	10.2 - 13.1	48.0	195
1600118	3 G 2.5	10.9 - 14.0	72.0	235
16001053	4 G 2.5	12.1 - 15.5	96.0	290
16001293	5 G 2.5	13.3 - 17.0	120.0	345
1600152	7 G 2.5	16.5 - 20.0	168.0	520
1600154	12 G 2.5	20.6 - 26.2	288.0	810
1600156	19 G 2.5	25.5 - 31.0	456.0	1,200
1600157	24 G 2.5	28.8 - 36.4	576.0	1,650
1600186	2 X 4	11.8 - 15.1	77.0	270
1600119	3 G 4	12.7 - 16.2	115.0	320
16001063	4 G 4	14.0 - 17.9	154.0	395
16001303	5 G 4	15.6 - 19.9	192.0	485
1600161	7 G 4	21.0 - 21.8	268.8	681
1600120	3 G 6	14.1 - 18.0	173.0	495
16001073	4 G 6	15.7 - 20.0	230.0	610
16001313	5 G 6	17.5 - 22.2	288.0	760
1600121	3 G 10	19.1 - 24.2	288.0	880
16001083	4 G 10	20.9 - 26.5	384.0	1,060
16001093	5 G 10	22.9 - 29.1	480.0	1,300
1600122	3 G 16	21.8 - 27.6	461.0	1,090
16001103	4 G 16	23.8 - 30.1	614.0	1,345
16001113	5 G 16	26.4 - 33.3	768.0	1,680
16001123	4 G 25	28.9 - 36.6	960.0	1,995
16001133	5 G 25	32.0 - 40.4	1,200.0	2,470
1600124	3 G 35	29.3 - 37.1	1,008.0	1,900
16001143	4 G 35	32.5 - 41.1	1,344.0	2,645
16001363	5 G 35	37.0 - 45.0	1,680.0	2,810
16001153	4 G 50	37.7 - 47.5	1,920.0	3,635
1600126	5 G 50	40.0 - 50.8	2,400.0	4,050
16001163	4 G 70	42.7 - 54.0	2,688.0	4,830
16001283	4 G 95	48.4 - 61.0	3,648.0	6,320
16001323	4 G 120	53.0 - 66.0	4,608.0	6,830
16000883	4 G 150	58.0 - 73.0	5,760.0	8,320
1600141	4 G 185	64.0 - 80.0	7,104.0	9,800
1600183	4 G 240	72.0 - 91.0	9,216.0	12,100
Single Core Rubber Cable H07RN-F U0/U: 450/750 V				
1600096	1 X 1.5	5.7 - 7.1	14.4	59
1600099	1 X 2.5	6.3 - 7.9	24.0	72
1600097	1 X 4	7.2 - 9.0	38.0	99
1600098	1 X 6	7.9 - 9.8	58.0	130
1600194	1 X 10	9.5 - 11.9	96.0	230
1600195	1 X 16	10.8 - 13.4	154.0	320
1600196	1 X 25	12.7 - 15.8	240.0	450
1600193	1 X 35	14.3 - 17.9	336.0	605
1600197	1 X 50	16.5 - 20.6	480.0	825
1600189	1 X 70	18.6 - 23.3	672.0	1,090
1600190	1 X 95	20.8 - 26.0	912.0	1,405
1600198	1 X 120	22.8 - 28.6	1,152.0	1,745
1600191	1 X 150	25.2 - 31.4	1,440.0	1,887
1600175	1 X 185	27.6 - 34.4	1,776.0	2,274
1600177	1 X 240	30.6 - 38.3	2,304.0	2,955
30015435	1 X 300	33.5 - 41.9	2,880.0	3,479

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Crosssection 5G35 and 5G50 without <HAR>

Comparable products

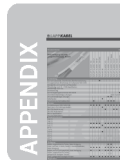
H07RN-F

- ÖLFLEX® AQUA RN8 see page 28

Accessories

H07RN-F

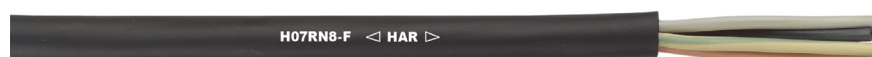
- EASY STRIP 2 stripping and cutting tool
- SKINTOP® CLICK / CLICK-R see page 107





ÖLFLEX® AQUA RN8

Submersible Pump Cable



Info

- Harmonised (HAR)
- H07RN8-F

Benefits

- Designed and tested for permanent use in water
- Useable down to 10 meters immersion depth
- High stresses

Application range

- For connecting electrical equipment in industrial water, e.g. floater switches
- Flexible applications in indoor and outdoor swimming pools
- Suitable for use with submersible pumps
- Dry and damp interiors, as well as outdoors and in industrial water

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Oil-resistant acc. to EN 60811-2-1

Approvals (Norm references)



Product Make-up

- Strands of bare copper wires
- Core insulation of rubber type EI 4
- Outer jacket of rubber type EM 2

Technical data



Core identification code

up to 5 cores: acc. to VDE 0293-308 (table T4) starting at 6 cores: black with white numbers



Approvals

VDE 0282 part 16



Conductor stranding

fine wire acc. to VDE 0295 Cl.5 / IEC 60228 Cl. 5



Minimum bending radius

flexible use: 6 x outer diameter



Rated voltage

U₀/U: 450/750
fixed, protected installation:
U₀/U: 600/1000 V



Test voltage

2500 V



Protective conductor

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



Current rating

acc. to VDE 0298 Part 4



Range of temperature

flexible use: -25°C to +80°C
fixed installation: -40°C to +80°C
in water: max. +40°C

Part number	Number of cores and mm ² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® AQUA RN8				
1600600	1 X 4	7.2 - 9.0	38.0	100
1600601	1 X 6	7.9 - 9.8	58.0	120
1600602	1 X 10	9.5 - 11.9	96.0	200
1600603	1 X 16	10.8 - 13.4	154.0	280
1600604	1 X 25	12.7 - 15.8	240.0	400
1600606	3 G 1.5	9.2 - 11.9	43.0	170
1600609	4 G 1.5	10.2 - 13.1	58.0	205
1600620	7 G 1.5	14.0 - 17.5	101.0	385
1600607	3 G 2.5	10.9 - 14.0	72.0	210
1600610	4 G 2.5	12.1 - 15.5	96.0	260
1600621	7 G 2.5	16.5 - 20.0	168.0	520
1600611	4 G 4	14.0 - 17.9	154.0	350
1600612	4 G 6	15.7 - 20.0	230.0	460
1600613	4 G 10	20.9 - 26.5	384.0	830
1600614	4 G 16	23.8 - 30.1	614.0	1,190
1600615	4 G 25	28.9 - 36.6	960.0	1,720
1600616	4 G 35	32.5 - 41.1	1,344.0	2,260

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Comparable products

- H07RN-F see page 26
- ÖLFLEX® AQUA BAM see page 29

Accessories

- EASY STRIP 2 stripping and cutting tool see
- SKINTOP® CLICK / CLICK-R see page 107



ÖLFLEX® AQUA BAM



Info

- For use in drinking water



Benefits

- Suitability for use with drinking water
- Suitable down to an immersion depth of 250m
- Very good weather resistance

Application range

- For connecting electrical equipment (e.g. submersible pumps and floating switches) in drinking water
- For use in dry, damp and wet interiors, but not in hazardous areas

Product features

- KTW -conformity is certified by the German Institute Technologiezentrum Wasser (TZW), Karlsruhe

Approvals (Norm references)



Product Make-up

- Strands of bare copper wires
- Core insulation of rubber type 3GI3
- Outer jacket of special rubber compound

Technical data

	Core identification code up to 5 cores: acc. to VDE 0293-308 (table T4)
	Specific insulation resistance > 10 GΩhm x cm
	Conductor stranding fine wire acc. to VDE 0295 Cl.5 / IEC 60228 Cl. 5
	Rated voltage U ₀ /U: 450/750 fixed, protected installation: U ₀ /U: 600/1000 V
	Test voltage 2500 V
	Protective conductor G = with protective conductor GN/YE X = without protective conductor
	Range of temperature max. conductor temperature: +90 °C in water max.: +40 °C (at +60 °C limited service life) flexible use in air: -30 °C to +80 °C fixed installation in air: -50 °C to +80 °C

Part number	Number of cores and mm ² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
30018816	3 G 1.5	9.8	43.0	141
30118817	4 G 1.5	11.0	58.0	180
30018819	3 G 2.5	11.7	72.0	208
30118820	4 G 2.5	12.9	96.0	259
30118823	4 G 4	14.8	154.0	356
30118825	3 X 6	15.9	173.0	314
30118826	4 G 6	16.8	230.0	475
30118831	3 X 16	25.7	461.0	962
30118832	4 G 16	25.9	614.0	1,220
30118835	4 G 25	30.8	960.0	1,770
30118838	4 G 35	35.1	1,344.0	2,304

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Comparable products

- ÖLFLEX® AQUA RN8 see page 28

Accessories

- EASY STRIP 2 stripping and cutting tool
- SKINTOP® CLICK / CLICK-R see page 107



Harsh use conditions

Rubber cables



NSSHÖU



Info

- High mechanical strength

■ Benefits

- Use at very high mechanical stress
- Single-cores are suitable as a robust connection cable for welding equipment

■ Application range

- For mining as well as surface mining
- Connection of moving equipment and machinery
- Under extreme environmental conditions
- Outdoor use as well as in dry and damp interiors

■ Product features

- Flame-retardant acc. to IEC 60332-1-2
- Oil-resistant acc. to EN 60811-2-1
- High notch resistance
- Abrasion resistant

■ Approvals (Norm references)



■ Product Make-up

- Strands of tinned copper wires
- Core insulation of rubber type 3GI3
- Inner jacket of rubber type GM1b or 5GM5
- Outer jacket of rubber type 5GM5

■ Technical data



Core identification code

up to 5 cores: acc. to VDE 0293-308 (table T4)
starting at 6 cores: black with white numbers



Approvals

VDE 0250 Part 812



Specific insulation resistance

> 1 GOhm x cm



Conductor stranding

fine wire acc. to
VDE 0295 Cl.5 / IEC 60228 Cl. 5



Minimum bending radius

flexible use: 10 x outer diameter
fixed installation: 5 x outer diameter



Rated voltage

U₀/U: 600/1000 V



Test voltage

3000 V



Protective conductor

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



Current rating

acc. to VDE 0298 Part 4, Table 15



Range of temperature

flexible use: -25°C to +90°C
fixed installation: -40°C to +90°C

Part number	Number of cores and mm ² per conductor	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
NSSHÖU-O				
1600500	1 X 16	10.9	154.0	260
1600501	1 X 25	13.3	240.0	390
1600502	1 X 35	14.4	336.0	500
1600503	1 X 50	16.7	480.0	680
1600504	1 X 70	18.9	672.0	900
1600505	1 X 95	21.0	912.0	1,150
1600506	1 X 120	23.3	1,152.0	1,440
1600507	1 X 150	25.2	1,440.0	1,750
1600508	1 X 185	28.4	1,776.0	2,180
1600509	1 X 240	31.4	2,304.0	2,790
NSSHÖU-J				
1600516	3 G 1.5	11.8	43.0	200
16005243	4 G 1.5	12.7	58.0	230
16005333	5 G 1.5	13.6	72.0	280
1600517	3 G 2.5	13.2	72.0	260
16005253	4 G 2.5	15.4	96.0	360
16005343	5 G 2.5	16.5	120.0	420
1600541	7 G 2.5	20.0	168.0	600
1600544	12 G 2.5	26.0	288.0	860
16005263	4 G 4	16.9	154.0	470
16005353	5 G 4	18.2	192.0	550
16005273	4 G 6	18.3	230.0	580
16005363	5 G 6	20.6	288.0	740
16005283	4 G 10	22.3	384.0	950
16005373	5 G 10	24.1	480.0	1,100
16005293	4 G 16	26.1	614.0	1,400
16005383	5 G 16	28.3	768.0	1,720
16005303	4 G 25	31.2	960.0	2,000
16005313	4 G 35	34.1	1,344.0	2,700
16005323	4 G 50	41.0	1,920.0	3,700

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

■ Comparable products

- ÖLFLEX® CRANE VS (N)SHTÖU see page 38
- ÖLFLEX® CRANE PUR see page 39



NSGAFÖU



Benefits

- Suitable for high voltage
- Arrangements made of single core cables NSGAFÖU in acc. with VDE 0250 Part 602 with nominal voltage of at least U_0/U : 1,8/3,0 kV can be used for short-circuit and short-to-ground proof installation in acc. with VDE 0100 Part 520

Application range

- Switch cabinets and equipment wiring
- Trains and buses
- Only for dry interiors

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Oil-resistant acc. to EN 60811-2-1

Approvals (Norm references)



Product Make-up

- Strands of tinned copper wires
- Core insulation of rubber type 3GI3
- Outer jacket of rubber type 5GM3

Technical data



Approvals

VDE 0250 part 602



Conductor stranding

fine wire acc. to

VDE 0295 Cl.5/ IEC 60228 Cl. 5



Minimum bending radius

flexible use: 10 x outer diameter

fixed installation: 6 x cable diameter



Rated voltage

U_0/U : 1,8/ 3,0 kV



Test voltage

6000 V



Current rating

acc. to VDE 0298 part 4 table 15



Range of temperature

flexible use: -25°C to +90°C

fixed installation: -40°C to +90°C

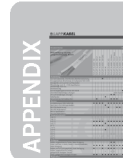
Part number	Conductor cross-section in mm ²	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
NSGAFÖU				
1600300	1.5	7.0	14.4	60
1600301	2.5	7.5	24.0	70
1600302	4	9.0	38.0	90
1600303	6	9.5	58.0	120
1600304	10	11.0	96.0	180
1600305	16	13.0	154.0	250
1600306	25	15.0	240.0	390
1600307	35	16.5	336.0	470
1600308	50	18.0	480.0	625
1600309	70	20.5	672.0	880
1600310	95	24.0	912.0	1,190
1600311	120	26.0	1,152.0	1,430
1600312	150	28.0	1,440.0	1,750
1600313	185	31.0	1,776.0	2,160
1600314	240	34.5	2,304.0	2,640
3026826	300	38.0	2,880.0	3,240

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil $\leq$ 30 kg and $\leq$ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)



Harsh use conditions

Rubber cables



NSHXAFÖ



■ Benefits

- Suitable for high voltage
- Arrangements made of single core cables NSHXAFÖ can be used for short-circuit and short-to-ground proof installation in acc. with VDE 0100 Part 520

■ Product features

- Flame-retardant acc. to IEC 60332-1-2

■ Approvals (Norm references)



■ Application range

- Switch cabinets and equipment wiring
- Trains and buses
- Only for dry interiors

■ Product Make-up

- Copper wire bare or tinned
- Core insulation made of halogen-free rubber compound
- Outer sheath made of halogen-free rubber compound

■ Technical data



Based on
VDE 0250 part 606



Conductor stranding
fine wire acc. to
VDE 0295 Cl.5/ IEC 60228 Cl. 5



Minimum bending radius
flexible use: 10 x outer diameter
fixed installation: 6 x cable diameter



Rated voltage
 U_0/U : 1,8/ 3,0 kV



Test voltage
6000 V



Range of temperature
flexible use: -5°C to +90°C
fixed installation: -25°C to +90°C

Part number	Conductor cross-section in mm ²	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
NSHXAFÖ				
3022673	1.5	7.0	14.4	60
3022674	2.5	7.5	24.0	70
3022675	4	9.0	38.0	90
3022676	6	9.5	58.0	120
3022677	10	11.0	96.0	180
3022678	16	13.0	154.0	250
3022679	25	15.0	240.0	390
3022680	35	16.5	336.0	470
3022681	50	18.0	480.0	625
3022682	70	20.5	672.0	880
3022683	95	24.0	912.0	1,190
3022684	120	26.0	1,152.0	1,430
3022685	150	28.0	1,440.0	1,750
3022686	185	31.0	1,776.0	2,160
3022687	240	34.5	2,304.0	2,718
3022688	300	38.0	2,890.0	3,470

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)



Info

- In open cast mining 1.8/3 - 12/20 kV with additional ground check conductor

ÖLFLEX® MINE GC



Benefits

- Rubber sheathed cable for extreme mechanical stress and abrasion
- Special construction with additional ground check conductor

Application range

- Flexible cable for energy supply of heavy equipment
- Suitable for draglines, shovels, dredges, drills
- For trailing operations in open cast mines
- Indoor and outdoor application

Product features

- Based on DIN VDE 0250 Part 813
- Type designation (N)TSCGECEWÖU
- Mechanical and abrasion resistant
- Ozone resistance in acc. to IEC 60811-2-1
- Oil resistant in acc. to IEC 60811-2-1

Product Make-up

- Fine strands of tinned copper wire, class 5 in acc. to VDE 0295 Part 14
- Rubber compound insulation, type 3GI3 to VDE 0207 Part 20
- Semiconductive tape over conductor and inner and outer semiconductive rubber layer on the insulation, from 3.6/6 kV
- Individual bare copper braid earth conductors
- Textile polyester support central filler
- Rubber compound inner sheath, type 5GM5 to VDE 0207 Part 21
- Polyester braid between inner and outer sheath
- Rubber compound outer sheath, type 5GM5 Yellow

Technical data



Core identification code
black with numbering



Conductor stranding
acc. to VDE 0295 Cl.5



Minimum bending radius
acc. to VDE 0298 Part 3

Max. tensile load
15 N/mm²



Rated voltage
U₀/U: 1.8/3 - 12/20 kV

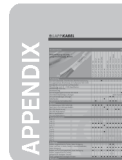


Test voltage
6.0 kV for 1.8/3 kV
11 kV for 3.6/6 kV
17 kV for 6/10 kV
24 kV for 8.7/15 kV
29 kV for 12/20 kV



Range of temperature
Static application: -40 °C to +80 °C
Mobile application: -20 °C to +80 °C

Part number	Number of cores and mm ² per conductor	Min. outer diameter mm approx.	Max. outer diameter mm approx.	Weight kg/km approx.
1.8/3 kV				
3804810	25 + 2x25/2+10	38.2	42.3	2460
3804811	35 + 2x25/2+10	39.7	44.0	2850
3804812	50 + 2x25/2+10	42.7	47.2	3450
3804813	70 + 2x35/2+10	48.1	53.0	4600
3804814	95 + 2x50/2+10	53.0	58.3	5770
3804815	120 + 2x70/2+10	57.4	63.1	7070
3804816	150 + 2x70/2+10	63.8	70.0	8680
3804817	185 + 2x95/2+10	65.6	71.9	9940
3.6/6 kV				
3804819	25 + 2x25/2+10	45.4	50.1	3150
3804820	35 + 2x25/2+10	46.7	51.5	3540
3804821	50 + 2x25/2+10	51.5	56.7	4390
3804822	70 + 2x35/2+10	55.2	60.7	5430
3804823	95 + 2x50/2+10	58.9	64.8	6480
3804824	120 + 2x70/2+10	65.1	71.4	8120
3804825	150 + 2x70/2+10	69.6	76.3	9410
6/10 kV				
3804827	25 + 2x25/2+10	48.1	53.0	3450
3804828	35 + 2x25/2+10	49.5	54.6	3850
3804829	50 + 2x25/2+10	54.2	59.7	4720
3804830	70 + 2x35/2+10	57.9	63.6	5720
3804831	95 + 2x50/2+10	61.6	67.7	6860
3804832	120 + 2x70/2+10	67.9	74.4	8550
8.7/15 kV				
3804834	25 + 2x25/2+10	53.9	59.3	4130
3804835	35 + 2x25/2+10	55.3	60.8	4540
3804836	50 + 2x25/2+10	58.5	64.2	5260
3804837	70 + 2x35/2+10	64.2	70.5	6610
3804838	95 + 2x50/2+10	67.9	74.4	7780
12/20 kV				
3804840	25 + 2x25/2+10	58.2	63.9	4660
3804841	35 + 2x25/2+10	59.4	65.3	5070
3804842	50 + 2x25/2+10	64.2	70.5	6110
3804843	70 + 2x35/2+10	67.9	74.4	7190





ÖLFLEX® MINE



Info

- In open cast mining 1.8/3 - 12/20 kV

■ Benefits

- Rubber sheathed cable for extreme mechanical stress and abrasion during trailing operation

■ Application range

- Flexible cable for energy supply of heavy equipment
- Suitable for draglines, shovels, dredges, drills
- For trailing operations in open cast mines
- Indoor and outdoor application

■ Product features

- Based on DIN VDE 0250 Part 813
- Type designation (N)TSCGEWÖU
- Mechanical and abrasion resistant
- Ozone resistance in acc. to IEC 60811-2-1
- Oil resistant in acc. to IEC 60811-2-1
- Special reeling test

■ Product Make-up

- Fine strands of tinned copper wire, class 5 in acc. to VDE 0295 Part 14
- Rubber compound insulation, type 3GI3 to VDE 0207 Part 20
- Semiconductive tape over conductor and inner and outer semiconductive rubber layer on the insulation, from 3.6/6 kV
- Fine strands of tinned copper wire earth conductors class 5 VDE 0295 Part 14
- Textile polyester support central filler
- Rubber compound inner sheath, type 5GM5 to VDE 0207 Part 21
- Polyester braid between inner and outer sheath
- Rubber compound outer sheath, type 5GM5 Yellow

■ Technical data



Core identification code
black with numbering



Conductor stranding
acc. to VDE 0295 Cl.5



Minimum bending radius
acc. to VDE 0298 Part 3

Max. tensile load

15 N/mm²

Max. torsional stress
15%/m



Rated voltage

U₀/U: 1.8/3 - 12/20 kV



Test voltage

6.0 kV for 1.8/3 kV

11 kV for 3.6/6 kV

17 kV for 6/10 kV

24 kV for 8.7/15 kV

29 kV for 12/20 kV



Range of temperature

Static application: -40 °C to +80 °C

Mobile application: -20 °C to +80 °C

Part number	Number of cores and mm ² per conductor	Min. outer diameter mm approx.	Max. outer diameter mm approx.	Weight kg/km approx.
1.8/3 kV				
3804700	3x25+3x25/3+	32.4	36.0	1920
3804701	3x35+3x25/3+	36.0	39.6	2410
3804702	3x50+3x25/3+	39.2	43.4	2980
3804703	3x70+3x35/3+	44.2	48.8	4040
3804704	3x95+3x50/3+	48.4	53.3	4880
3804705	3x120+3x70/3+	53.8	59.1	6290
3804706	3x150+3x70/3+	57.7	63.4	7640
3804707	3x185+3x95/3+	59.7	65.6	8790
3804708	3x240+3x120/3+	67.9	74.4	10440
3.6/6 kV				
3804709	3x25+3x25/3+	43.1	47.6	2710
3804710	3x35+3x25/3+	45.4	50.1	3080
3804711	3x50+3x25/3+	48.6	53.5	3820
3804712	3x70+3x35/3+	53.9	59.3	4900
3804713	3x95+3x50/3+	57.2	62.9	5680
3804714	3x120+3x70/3+	62.7	68.8	7260
3804715	3x150+3x70/3+	65.2	71.5	8430
3804716	3x185+3x95/3+	68.8	75.5	10110
6/10 kV				
3804717	3x25+3x25/3+	46.1	50.8	3193
3804718	3x35+3x25/3+	47.2	52.1	3570
3804719	3x50+3x25/3+	52.2	57.5	4450
3804720	3x70+3x35/3+	56.1	61.6	5520
3804721	3x95+3x50/3+	59.2	65.1	6420
3804722	3x120+3x70/3+	64.4	70.7	7960
3804723	3x150+3x70/3+	69.0	75.7	9620
8.7/15 kV				
3804724	3x25+3x25/3+	50.2	55.3	3650
3804725	3x35+3x25/3+	53.5	58.8	4270
3804726	3x50+3x25/3+	56.5	62.2	4980
3804727	3x70+3x35/3+	60.5	66.4	6120
3804728	3x95+3x50/3+	65.4	71.7	7310
3804729	3x120+3x70/3+	69.2	75.9	9390
12/20 kV				
3804730	3x25+3x25/3+	56.0	61.5	4450
3804731	3x35+3x25/3+	57.5	63.2	4780
3804732	3x50+3x25/3+	62.4	68.5	5790
3804733	3x70+3x35/3+	66.3	72.7	6970
3804734	3x95+3x50/3+	68.8	75.4	7830



Info

- In open cast mining 1.8/3 - 12/20 kV

ÖLFLEX® MINE E



Benefits

- Rubber sheathed cable for extreme mechanical stress and abrasion during trailing operation

Application range

- Flexible cable for energy supply of heavy equipment
- Suitable for draglines, shovels, dredges, drills
- For trailing operations in open cast mines
- Indoor and outdoor application

Product features

- Based on DIN VDE 0250 Part 813
- Type designation (N)TSCGECÉWOU
- Mechanical and abrasion resistant
- Ozone resistance in acc. to IEC 60811-2-1
- Oil resistant in acc. to IEC 60811-2-1

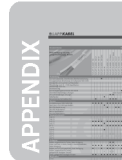
Product Make-up

- Fine strands of tinned copper wire, class 5 in acc. to VDE 0295 Part 14
- Rubber compound insulation, type 3GI3 to VDE 0207 Part 20
- Semiconductive tape over conductor and inner and outer semiconductive rubber layer on the insulation, from 3.6/6 kV
- Textile polyester support central filler
- Rubber compound inner sheath, type 5GM5 to VDE 0207 Part 21
- Polyester braid between inner and outer sheath
- Rubber compound outer sheath, type 5GM5 Yellow

Technical data

	Core identification code black with numbering
	Conductor stranding acc. to VDE 0295 Cl.5
	Minimum bending radius acc. to VDE 0298 Part 3 Max. tensile load 15 N/mm ²
	Rated voltage U ₀ /U: 1.8/3 - 12/20 kV
	Test voltage 6.0 kV for 1.8/3 kV 11 kV for 3.6/6 kV 17 kV for 6/10 kV 24 kV for 8.7/15 kV 29 kV for 12/20 kV
	Range of temperature Static application: -40 °C to +80 °C Mobile application: -20 °C to +80 °C

Part number	Number of cores and mm ² per conductor	Min. outer diameter mm approx.	Max. outer diameter mm approx.	Weight kg/km approx.
1.8/3 kV				
3804770	3x25 + 3x25/3E+	38.2	42.3	2420
3804771	3x35 + 3x25/3E	39.7	44.0	2790
3804772	3x50 + 3x25/3E	42.7	47.2	3380
3804773	3x70 + 3x35/3E	48.1	53.0	4520
3804774	3x95 + 3x50/3E	53.0	58.3	5660
3804775	3x120 + 3x70/3E	57.4	63.1	6940
3.6/6 kV				
3804779	3x25 + 3x25/3E+	45.4	50.1	3120
3804780	3x35 + 3x25/3E	46.7	51.5	3510
3804781	3x50 + 3x25/3E	51.5	56.7	4350
3804782	3x70 + 3x35/3E	55.2	60.7	5400
3804783	3x95 + 3x50/3E	58.9	64.8	6450
3804784	3x120 + 3x70/3E	65.1	71.4	8070
3804785	3x150 + 3x70/3E	69.6	76.3	9360
6/10 kV				
3804787	3x25 + 3x25/3E+	48.1	53.0	3410
3804788	3x35 + 3x25/3E	49.5	54.6	3810
3804799	3x50 + 3x25/3E	54.2	59.7	4670
3804790	3x70 + 3x35/3E	57.9	63.6	5690
3804791	3x95 + 3x50/3E	61.6	67.7	6830
3804792	3x120 + 3x70/3E	67.9	74.4	8510
8.7/15 kV				
3804794	3x25 + 3x25/3E+	53.9	59.3	4100
3804795	3x35 + 3x25/3E	55.3	60.8	4490
3804796	3x50 + 3x25/3E	58.5	64.2	5210
3804797	3x70 + 3x35/3E	64.2	70.5	6570
3804798	3x95 + 3x50/3E	67.9	74.4	7740
12/20 kV				
3804800	3x25 + 3x25/3E+	58.2	63.9	4620
3804801	3x35 + 3x25/3E	59.4	65.3	5020
3804802	3x50 + 3x25/3E	64.2	70.5	6050
3804803	3x70 + 3x35/3E	67.9	74.4	7150





ÖLFLEX® MINE F



Info

- In open cast mining 3.6/6 - 12/20 kV

Application range

- Flexible cable for fixed energy distribution lines
- Suitable alongside material handling equipment
- Indoor and outdoor application

Product features

- Based on DIN VDE 0250 Part 813
- Type designation (N)TSCGEWÖU
- Ozone resistance in acc. to IEC 60811-2-1
- Oil resistant in acc. to IEC 60811-2-1
- Water test in acc. to HD 22.16

Product Make-up

- Fine strands of bare copper wire, class 5 in acc. to VDE 0295 Part 14
- Rubber compound insulation, type 3GI3 to VDE 0207 Part 20
- Semiconductive tape over conductor and inner and outer semiconductive rubber layer on the insulation
- Fine strands of Bare copper wire earth conductors, class 5 VDE 0295 Part 14
- Textile polyester support central filler
- Rubber compound inner sheath, type GM1b to VDE 0207 Part 21
- Rubber compound outer sheath, type 5GM5 Red

Technical data

- Core identification code**
black with numbering
- Conductor stranding**
acc. to VDE 0295 Cl.5
- Minimum bending radius**
acc. to VDE 0298 Part 3
Max. tensile load
20 N/mm²
- Rated voltage**
U₀/U: 3.6/6 - 12/20 kV
- Test voltage**
11 kV for 3.6/6 kV
17 kV for 6/10 kV
24 kV for 8.7/15 kV
29 kV for 12/20 kV
- Range of temperature**
Static application: -40 °C to +80 °C
Mobile application: -20 °C to +80 °C

Part number	Number of cores and mm ² per conductor	Min. outer diameter mm approx.	Max. outer diameter mm approx.	Weight kg/km approx.
3.6/6 kV				
3804740	3x25 + 3x25/3+	41.6	46.0	2730
3804741	3x35 + 3x25/3+	43.6	48.1	3150
3804742	3x50 + 3x25/3+	46.9	51.8	3780
3804743	3x70 + 3x35/3+	52.1	57.4	4930
3804744	3x95 + 3x50/3+	55.6	61.1	5880
3804745	3x120 + 3x70/3+	58.8	64.5	7030
3804746	3x150 + 3x70/3+	63.9	70.2	8350
3804747	3x185 + 3x95/3+	66.9	73.4	9760
6/10 kV				
3804748	3x25 + 3x25/3+	44.4	49.0	2990
3804749	3x35 + 3x25/3+	46.3	51.0	3410
3804750	3x50 + 3x25/3+	51.4	56.6	4300
3804751	3x70 + 3x35/3+	54.9	60.4	5300
3804752	3x95 + 3x50/3+	58.5	64.2	6250
3804753	3x120 + 3x70/3+	63.2	69.3	7660
3804754	3x150 + 3x70/3+	66.6	73.1	8710
8.7/15 kV				
3804755	3x25 + 3x25/3+	48.9	53.9	3460
3804756	3x35 + 3x25/3+	52.4	57.7	4150
3804757	3x50 + 3x25/3+	55.9	61.4	4830
3804758	3x70 + 3x35/3+	59.4	65.3	5880
3804759	3x95 + 3x50/3+	64.6	70.9	7140
3804760	3x120 + 3x70/3+	67.7	74.2	8350
12/20 kV				
3804761	3x25 + 3x25/3+	54.7	60.2	4200
3804762	3x35 + 3x25/3+	56.5	62.2	4670
3804763	3x50 + 3x25/3+	60.0	65.9	5400
3804764	3x70 + 3x35/3+	65.2	71.5	6720
3804765	3x95 + 3x50/3+	68.7	75.3	7770



ÖLFLEX® CRANE NSHTÖU



Info

- Efficient and extreme powerful

Benefits

- Can be used as hawser, drum and drag cable as well as for power chains

Application range

- Use in hoists, transport and conveyor systems
- Wherever cables are reeled, unreeled, guided by roller trains or similar methods of guidance
- In dry and damp rooms, outdoors as well as in industrial water

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Oil-resistant acc. to EN 60811-2-1
- Good chemical, thermal and mechanical resistance

- Approved for connection of mobile equipment in hazardous areas acc. to DIN VDE 0165

Approvals (Norm references)



- Application profiles of ÖLFLEX® CRANE cables see appendix, selection table T0
- Please observe the assembly guidelines in appendix table T2

Product Make-up

- Strands of tinned copper wires
- Core insulation of rubber type 3GI3
- Textile braid integrated in the outer sheath
- Outer jacket of rubber type 5GM3

Technical data



Core identification code
up to 5 cores: acc. to VDE 0293-308 (table T4) starting at 6 cores: black with white numbers



Approvals
VDE 0250 Part 814 NSHTÖU



Specific insulation resistance
> 10 GΩm x cm



Conductor stranding
fine wire acc. to VDE 0295 Cl.5 / IEC 60228 Cl. 5



Minimum bending radius
flexible use: 5 x outer diameter (for cables < 21,5 mm)
flexible use: 6,25 x outer diameter (for cables > 21,5 mm)



Rated voltage
U₀/U: 600/1000 V



Test voltage
3000 V



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



Current rating
VDE 0298 Part 4



Range of temperature
flexible use: -25°C to +60°C
max. cond. temperature: +80°C

Part number	Number of cores and mm² per conductor	Outer diameter mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CRANE NSHTÖU				
0043006	3 G 1.5	12.2	45.0	190
00430053	4 G 1.5	13.1	58.0	220
00430073	5 G 1.5	14.1	81.0	260
0043008	7 G 1.5	17.5	115.0	380
0043009	12 G 1.5	23.6	196.0	720
0043010	18 G 1.5	23.7	271.0	770
0043011	24 G 1.5	27.8	392.0	1,000
0043012	30 G 1.5	31.2	432.0	1,320
0043013	3 G 2.5	13.5	74.0	250
00430303	4 G 2.5	15.8	99.0	330
00430143	5 G 2.5	16.8	124.0	390
0043015	7 G 2.5	19.4	180.0	510
0043016	12 G 2.5	26.6	308.0	970
0043017	18 G 2.5	27.6	451.0	1,100
0043018	24 G 2.5	32.6	616.0	1,450
0043019	30 G 2.5	36.7	771.0	1,980
00430203	4 G 4	17.4	158.0	440
00430333	5 G 4	18.7	220.0	520
00430213	4 G 6	18.8	241.0	530
00430343	5 G 6	21.2	317.0	690
00430223	4 G 10	22.9	404.0	830
00430003	5 G 10	24.7	510.0	1,000
00430233	4 G 16	26.3	642.0	1,170
00430323	5 G 16	28.5	768.0	1,400
00430243	4 G 25	33.2	1,005.0	1,830
00430253	4 G 35	35.7	1,410.0	2,280
00430263	4 G 50	42.2	2,010.0	3,220
00430283	4 G 70	46.6	2,688.0	4,200
00430293	4 G 95	53.2	3,648.0	5,530

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

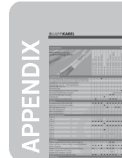
Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Comparable products

- ÖLFLEX® CRANE VS (N)SHTÖU see page 38
- ÖLFLEX® CRANE PUR see page 39

Accessories

- EASY STRIP 2 stripping and cutting tool





ÖLFLEX® CRANE VS (N)SHTÖU

LAPP KABEL STUTTGART ÖLFLEX® CRANE VS (N)SHTÖU CE



Info

- Reeling/ unreeling under tensile load

Benefits

- A supporting core absorbs the applied tensile forces. It is thus possible to reel, unreel and guide also vertically over long distances
- Wherever reeling, unreeling and guiding operations also impose tensile stresses on cables

Application range

- Use in hoists, transport and conveyor systems
- Wherever cables are reeled, unreel, guided by roller trains or similar methods of guidance
- In dry and damp rooms, outdoors as well as in industrial water

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Oil-resistant acc. to EN 60811-2-1
- Good chemical, thermal and mechanical resistance

Approvals (Norm references)



- Application profiles of ÖLFLEX® CRANE cables see appendix, selection table T0
- Please observe the assembly guidelines in appendix table T2

Product Make-up

- Strands of tinned copper wires
- Core insulation of rubber type 3GI3
- Textile braid integrated in the outer sheath
- Central supporting element
- Outer jacket of rubber type 5GM5

Technical data

	Core identification code up to 5 cores: acc. to VDE 0293-308 (table T4) starting at 6 cores: black with white numbers
	Specific insulation resistance > 10 GOhm x cm
	Conductor stranding fine wire acc. to VDE 0295 Cl.5/ IEC 60228 Cl. 5
	Minimum bending radius flexible use: 7,5 x outer diameter
	Rated voltage U ₀ /U: 600/1000 V
	Test voltage 3000 V
	Protective conductor G = with protective conductor GN/YE X = without protective conductor
	Current rating VDE 298 part 4
	Range of temperature flexible use: -25°C to +60°C max. cond. temperature: +80°C

Part number	Number of cores and mm ² per conductor	Outer diameter mm approx.	Tension load capacity in N	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CRANE VS (N)SHTÖU					
0044008	7 G 1.5	18.6	2,000	115.0	430
0044009	12 G 1.5	25.6	2,000	196.0	820
0044010	18 G 1.5	26.8	2,000	271.0	930
0044011	24 G 1.5	31.9	2,000	392.0	1,260
0044036	36 G 1.5	35.8	2,000	588.0	1,650
0044015	7 G 2.5	22.2	2,000	180.0	630
0044016	12 G 2.5	29.7	2,000	308.0	1,150
00440333	5 G 4	18.7	2,000	220.0	510
00440223	4 G 10	22.9	2,000	404.0	830
00440233	4 G 16	26.3	2,000	642.0	1,170
00440323	5 G 16	28.5	2,400	768.0	1,400
00440243	4 G 25	33.2	3,000	1,005.0	1,850
00440253	4 G 35	35.7	4,000	1,410.0	2,250
00440263	4 G 50	42.2	6,000	2,010.0	3,250
00440283	4 G 70	46.6	8,000	2,688.0	4,200
00440293	4 G 95	53.2	11,000	3,648.0	5,550

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Comparable products

- ÖLFLEX® CRANE NSHTÖU see page 37
- ÖLFLEX® CRANE PUR see page 39

Accessories

- EASY STRIP 2 stripping and cutting tool



ÖLFLEX® CRANE PUR



Info

- 30% thinner outer diameter

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Benefits

- Minimised outer diameters in comparison with the ÖLFLEX® CRANE NSHTÖU make smaller bending radiuses and considerably cost savings possible by smaller drums and drive engines
- A supporting core absorbs the applied tensile forces. It is thus possible to reel, unreel and guide also vertically over long distances
- Wherever reeling, unreeling and guiding operations also impose tensile stresses on cables

Application range

- Use in hoists, transport and conveyor systems
- Wherever cables are reeled, unreel, guided by roller trains or similar methods of guidance
- In dry and damp rooms, outdoors as well as in industrial water

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Oil-resistant acc. to EN 60811-2-1
- Good chemical, thermal and mechanical resistance

Approvals (Norm references)



- Application profiles of ÖLFLEX® CRANE cables see appendix, selection table T0
- Please observe the assembly guidelines in appendix table T2

Product Make-up

- Strands of bare copper wires
- Core insulation: TPE-E
- Support braid integrated in the outer sheath
- Central supporting element
- Outer sheath made of halogen-free PUR compound

Technical data



Core identification code
up to 5 cores: acc. to VDE 0293-308 (table T4) starting at 6 cores: black with white numbers



Specific insulation resistance
> 10 GOhm x cm



Conductor stranding
extra fine wire acc. to VDE 0295 Cl. 6 / IEC 60228 Cl. 6



Minimum bending radius
flexible use: 7,5 x outer diameter



Rated voltage
U₀/U: 600/1000 V



Test voltage
3500 V



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



Current rating
VDE 298 part 4



Range of temperature
flexible use: -40°C
max. cond. temperature: +80°C

Part number	Number of cores and mm² per conductor	Outer diameter mm approx.	Tension load capacity in N	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CRANE PUR					
0045210	7 G 1.5	12.9	2,500	100.8	239
0045211	12 G 1.5	17.6	2,500	172.8	401
0045212	18 G 1.5	17.5	2,500	259.2	507
0045213	24 G 1.5	20.6	2,500	345.6	673
0045214	36 G 1.5	31.4	2,500	518.4	1,011
0045220	7 G 2.5	15.4	3,000	168.0	358
0045221	12 G 2.5	21.6	3,000	288.0	619
0045222	18 G 2.5	21.5	3,000	432.0	793
0045230	4 G 10	19.2	2,000	384.0	674
0045231	4 G 16	22.7	2,500	615.0	966
0045232	4 G 25	28.1	3,500	960.0	1,506
0045233	4 G 35	31.7	4,500	1,344.0	2,004
0045234	4 G 50	36.9	6,000	1,920.0	2,838
0045240	3x25+3G6	25.7	2,000	893.0	1,380
0045241	3x35+3G6	27.6	2,500	1,181.0	1,695
0045242	3x50+3G10	32.1	3,500	1,613.0	2,307

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

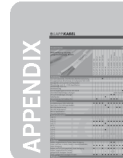
Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Comparable products

- ÖLFLEX® CRANE NSHTÖU see page 37
- ÖLFLEX® CRANE VS (N)SHTÖU see page 38

Accessories

- EASY STRIP 2 stripping and cutting tool





ÖLFLEX® CRANE

LAPP KABEL STUTTGART ÖLFLEX® CRANE CE

Benefits

- Cables maintain all the positive properties for years
- Types up to max. 24 cores can also be used in power chains

Application range

- Wherever long lengths of weather resistant cables are required
- For use in machinery and installations which are constantly exposed to bad weather conditions
- Handling and hoisting gear, construction machinery, dockyard installations
- Suitable for use in special conditions such as industrial or sea water

Product features

- Flame-retardant acc. to IEC 60332-1-2
- The cables are not suitable for use on pulleys or drums under tensile load
- For the tensile strength of the supporting element, see table below
- The cable must always be installed so that the supporting element can take the tensile forces
- The essential flexibility of the cores may not be affected by clamps

Approvals (Norm references)



Product Make-up

- Strands of bare copper wires
- Core insulation of rubber
- Special supporting core
- Outer jacket of rubber type 5GM2

Technical data



Core identification code

up to 5 cores: acc. to VDE 0293-308 (table T4) starting at 6 cores: black with white numbers



Based on

VDE 0250



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

0,15 mm wire diameter at 1,0 mm²
0,20 mm wire diameter from 1,5 mm²



Minimum bending radius

flexible use: 12,5 x outer diameter



Rated voltage

U₀/U: 300/500 V



Test voltage

3000 V



Protective conductor

G = with protective conductor GN/YE

X = without protective conductor



Range of temperature

flexible use: -25°C to +80°C

fixed installation: -40°C to +80°C

Part number	Number of cores and mm ² per conductor	Outer diameter mm approx.	Tension load capacity in N	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CRANE					
0039001	2 X 1	7.4	300	20.0	89
0039002	3 G 1	8.3	300	30.0	106
00390033	4 G 1	8.9	300	40.0	127
00390043	5 G 1	10.4	300	48.0	149
0039107	7 G 1	12.9	300	69.0	206
0039109	9 G 1	14.4	300	91.0	281
0039054	12 G 1	18.5	360	124.0	422
0039116	16 G 1	17.9	480	165.0	407
0039055	18 G 1	19.2	540	185.0	451
0039120	20 G 1	20.5	600	206.0	530
0039056	24 G 1	22.1	720	247.0	646
0039057	36 G 1	26.1	1,080	371.0	863
0039148	48 G 1	29.6	1,440	461.0	1,222
0039017	2 X 1.5	8.0	300	30.0	108
0039018	3 G 1.5	8.7	300	44.0	128
00390193	4 G 1.5	9.9	300	59.0	158
00390203	5 G 1.5	10.9	300	74.0	188
0039061	7 G 1.5	14.0	315	103.0	260
0039208	8 G 1.5	15.2	360	122.0	300
0039209	9 G 1.5	15.9	405	138.0	375
0039210	10 G 1.5	17.0	450	153.0	427

Part number	Number of cores and mm ² per conductor	Outer diameter mm approx.	Tension load capacity in N	Copper index kg/km	Weight kg/km approx.
0039058	12 G 1.5	19.9	540	185.0	557
0039059	18 G 1.5	20.9	810	277.0	608
0039060	24 G 1.5	23.4	1,080	370.0	825
0039034	2 X 2.5	9.7	300	49.0	145
0039035	3 G 2.5	10.2	300	74.0	173
00390363	4 G 2.5	11.6	300	98.0	249
00390373	5 G 2.5	12.4	375	120.0	259
0039307	7 G 2.5	16.6	525	171.0	378
0039309	9 G 2.5	18.9	675	229.0	518
0039312	12 G 2.5	23.3	900	308.0	770
0039316	16 G 2.5	22.8	1,200	411.0	749
0039318	18 G 2.5	24.4	1,350	432.0	837
0039324	24 G 2.5	28.5	1,800	576.0	1,184
0039336	36 G 2.5	33.2	2,700	864.0	1,634
00390463	4 G 4	15.2	480	157.0	307
00390473	5 G 4	16.8	600	197.0	394
00390483	4 G 6	16.8	720	236.0	409
00390493	5 G 6	19.2	900	295.0	528
00390503	4 G 10	21.8	1,200	393.0	698
00390513	5 G 10	24.6	1,500	491.0	853
00390523	4 G 16	25.4	1,920	629.0	974
00390533	5 G 16	28.0	2,400	787.0	1,226

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Accessories

- SKINTOP® CLICK / CLICK-R 107



ÖLFLEX® CRANE 2S



Benefits

- Two special steel supporting elements, integrated in the outer sheath, are absorbing the resulting tensile load during operation
- Their tensile strength of 2100 N allows free carrying installation up to 150 meters length

Application range

- For connecting control panels
- As self-supporting shaft cable
- In high racks
- Suitable for outdoor applications
- **Note: Not an elevator cable!**

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Weather-resistant

Approvals (Norm references)



Product Make-up

- Strands of bare copper wires
- Core insulation with special PVC base
- Special textile wrapping to improve sliding movement between sheath and core
- Special PVC based outer sheath
- Steel support elements are integrated in the outer sheath

Technical data

	Core identification code black with white numbers
	Based on VDE 0250
	Specific insulation resistance > 20 GΩm x cm
	Conductor stranding extra fine wire acc. to VDE 0295 Cl. 6 / IEC 60228 Cl. 6
	Minimum bending radius flexible use: 20 x outer diameter
	Rated voltage U ₀ /U: 300/500 V
	Test voltage 3000 V
	Protective conductor G = with protective conductor GN/YE X = without protective conductor
	Range of temperature flexible use: -15°C to +70°C

Part number	Number of cores and mm ² per conductor	Overall width in mm approx.	Cable Ø in mm	Distance between strain wires in mm approx.	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CRANE 2S						
0027503	8 G 1.5	25.5	14.7	20	115.0	345
0027504	12 G 1.5	27.0	16.2	21	173.0	439
0027505	20 G 1.5	31.0	20.1	25	288.0	674

Copper price basis: EUR 150 / 100 kg

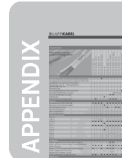
Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Accessories

- EASY STRIP 2 stripping and cutting tool





ÖLFLEX® LIFT



Benefits

- Special cable make-up for a long service life
- Attractive price and therefore maximised operational efficiency

Application range

- Standard elevator cable that covers various areas in elevator construction
- To ensure electrical integrity in elevators
- Use in outdoor elevators possible

Product features

- Flame-retardant acc. to IEC 60332-1-2

- Weather-resistant

Approvals (Norm references)



- Please observe the assembly guidelines in the appendix table T3

Product Make-up

- Strands of bare copper wires
- Core insulation with special PVC base
- Supporting element made of hemp or aramid
- Fleece wrapping between cores and sheath
- Special PVC based outer sheath

Technical data

	Core identification code black with white numbers
	Suspension length see table below
	Specific insulation resistance > 20 GOhm x cm
	Conductor stranding extra fine wire acc. to VDE 0295 Cl. 6 / IEC 60228 Cl. 6
	Minimum bending radius flexible use: 20 x outer diameter
	Rated voltage U _i /U: 300/500 V
	Test voltage 4000 V
	Protective conductor G = with protective conductor GN/YE X = without protective conductor
	Range of temperature flexible use: -15°C to +70°C
	VDE-tested VDE-Reg.-No. 7039

Part number	Number of cores and mm² per conductor	Outer diameter mm approx.	Suspension length in meters max.	Supporting element of	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® LIFT						
0027020	7 G 1	11.5	80	aramid	68.0	200
0027022	12 G 1	16.3	80	hemp	116.0	375
0027024	18 G 1	16.4	70	aramid	173.0	405
0027027	24 G 1	19.4	60	hemp	231.0	620
0027029	36 G 1	25.1	90	hemp	346.0	887

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Comparable products

- ÖLFLEX® LIFT T see page 43
- ÖLFLEX® LIFT S see page 44



ÖLFLEX® LIFT T



Benefits

- Special cable make-up for a long service life
- Resists mechanical stress even with high suspension lengths

Application range

- Elevator cable that covers various areas in elevator construction
- To ensure electrical integrity in elevators
- Use in outdoor elevators possible

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Weather-resistant

Approvals (Norm references)



- Please observe the assembly guidelines in the appendix table T3

Product Make-up

- Strands of bare copper wires
- Core insulation with special PVC base
- Supporting element made of hemp or aramid
- Fleece wrapping between cores and sheath
- Supporting braid made from a special combination of textile fibres
- Special PVC based outer sheath

Technical data

	Core identification code black with white numbers
	Suspension length see table below
	Specific insulation resistance > 20 GΩhm x cm
	Conductor stranding extra fine wire acc. to VDE 0295 Cl. 6 / IEC 60228 Cl. 6
	Minimum bending radius flexible use: 20 x outer diameter
	Rated voltage U ₀ /U: 300/500 V
	Test voltage 4000 V
	Protective conductor G = with protective conductor GN/YE X = without protective conductor
	Range of temperature flexible use: -15°C to +70°C
	VDE-tested VDE-Reg.-No. 7040

Part number	Number of cores and mm² per conductor	Outer diameter mm approx.	Suspension length in meters max.	Supporting element of	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® LIFT T						
0027506	12 G 0.75	18.1	110	hemp	86.0	360
0027507	18 G 0.75	18.3	110	aramid	130.0	460
0027508	24 G 0.75	21.0	80	aramid	173.0	530
0027001	7 G 1	14.5	80	aramid	67.0	225
0027002	12 G 1	19.2	80	hemp	115.0	410
0027008	18 G 1	19.5	70	aramid	173.0	405
0027004	20 G 1	20.3	70	aramid	192.0	490
0027005	24 G 1	22.1	60	hemp	230.0	600
0027007	36 G 1	28.6	90	hemp	346.0	950
0027006	28 G 1,0 + 2 x (0,5) C	25.2	90	hemp	293.0	765

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Comparable products

- ÖLFLEX® LIFT see page 42
- ÖLFLEX® LIFT S see page 44





ÖLFLEX® LIFT S



Benefits

- Special cable make-up for a long service life
- Practical experience with this cable and long term tests have shown that extreme stresses are also possible
- Suitable for high suspension lengths due to the steel wire as supporting element

Application range

- Elevator cable that covers various areas in elevator construction
- To ensure electrical integrity in elevators
- Use in outdoor elevators possible

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Weather-resistant

Approvals (Norm references)



- Please observe the assembly guidelines in the appendix table T3

Product Make-up

- Strands of bare copper wires
- Core insulation with special PVC base
- Steel support element
- Fleece wrapping between cores and sheath
- Supporting braid made from a special combination of textile fibres
- Special PVC based outer sheath

Technical data



Core identification code
black with white numbers



Suspension length
see table below



Specific insulation resistance
> 20 GOhm x cm



Conductor stranding
extra fine wire acc. to
VDE 0295 Cl. 6/ IEC 60228 Cl. 6



Minimum bending radius
flexible use: 20 x outer diameter



Rated voltage
U_i/U: 300/500 V



Test voltage
4000 V



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



Range of temperature
flexible use: -15°C to +70°C

Part number	Number of cores and mm² per conductor	Outer diameter mm approx.	Suspension length in meters max.	Supporting element of	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® LIFT S						
0027009	24 G 1	22.1	150	steel	230.0	600
0027010	36 G 1	28.6	150	steel	346.0	950

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Comparable products

- ÖLFLEX® LIFT see page 42
- ÖLFLEX® LIFT T see page 43



ÖLFLEX® CRANE F



■ Benefits

- Weather-resistant, for harsh environmental conditions
- Flat cables need less space than round cables
- Considerably smaller bending radii are possible than with round cables

■ Application range

- In crane systems on building sites and shipyards for ensuring important processes

■ Product features

- Flame-retardant acc. to IEC 60332-1-2

■ Approvals (Norm references)



■ Product Make-up

- Copper wire bare or tinned
- Core insulation of rubber
- Outer jacket of special rubber compound

■ Technical data



Core identification code
up to 5 cores: acc. to VDE 0293-308 (table T4)
starting at 6 cores: black with white numbers



Based on
VDE 0250 (NGFLGÜ)



Specific insulation resistance
> 10 GOhm x cm



Conductor stranding
acc. to VDE 0295 Class 5 or 6 /
IEC 60228 Class 5 or 6
(Single wire diameter, see table below)



Minimum bending radius
flexible use: 10 x cable thickness



Rated voltage
U₀/U: 300/500 V



Test voltage
3000 V



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



Range of temperature
flexible use: -25°C to +90°C

Part number	Number of cores and mm² per conductor	Single wire diameter in mm	Overall width in mm approx.	Thickness mm	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® CRANE F						
0041041	4 G 1.5	0.15	17.5	6.2	58.0	200
0041042	5 G 1.5	0.15	21.5	6.2	72.0	240
0041043	7 G 1.5	0.15	29.0	6.2	101.0	360
0041044	8 G 1.5	0.15	31.5	6.2	115.0	370
0041045	10 G 1.5	0.15	40.0	6.5	144.0	520
0041046	12 G 1.5	0.15	47.0	6.5	173.0	620
0041047	4 G 2.5	0.15	21.0	7.5	96.0	280
0041048	5 G 2.5	0.15	27.0	7.5	120.0	400
0041049	7 G 2.5	0.15	35.0	7.5	168.0	520
0041050	8 G 2.5	0.15	39.0	7.5	192.0	550
0041051	12 G 2.5	0.15	56.0	8.0	288.0	800
0041052	4 G 4	0.15	26.0	9.0	154.0	410
0041053	7 G 4	0.15	42.0	9.0	269.0	700
0041054	4 G 6	0.20	29.0	9.5	230.0	600
0041055	5 G 6	0.20	35.0	9.5	288.0	650
0041056	7 G 6	0.20	42.0	9.5	403.0	850
0041057	4 G 10	0.20	33.0	11.0	384.0	800
0041058	5 G 10	0.20	44.0	11.0	480.0	1,000
0041059	4 G 16	0.20	38.0	13.0	614.0	1,150
0041060	4 G 25	0.20	49.5	15.0	960.0	1,700
0041061	4 G 35	0.40	55.0	17.0	1,344.0	2,200
0041062	4 G 50	0.40	63.0	19.0	1,920.0	3,000
0041063	4 G 70	0.50	71.0	22.0	2,688.0	4,000

Copper price basis: EUR 150 / 100 kg

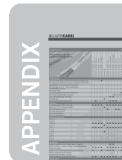
Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

■ Comparable products

- ÖLFLEX® LIFT F see page 46





ÖLFLEX® LIFT F



Benefits

- Flat cables need less space than round cables
- Considerably smaller bending radii are possible than with round cables

Application range

- In conveyor and hoist equipments as well as transport installations
- As supply line for moving machine parts
- According to VDE definition can also be used as elevator control cable up to 35 m suspension length with a maximum travelspeed of 1.6 m/sec

Product features

- Flame-retardant acc. to IEC 60332-1-2

Approvals (Norm references)



- Meets the requirements of the harmonised PVC flat cable H07VVH6-F

Product Make-up

- Strands of bare copper wires
- PVC based core insulation
- PVC based outer sheath

Technical data



Core identification code

up to 5 cores: acc. to VDE 0293-308 (table T4)
starting at 6 cores: black with white numbers



Based on

VDE 0281 (H05VVH6-F or H07VVH6-F)



Specific insulation resistance

> 20 GOhm x cm



Conductor stranding

acc. to VDE 0295 Class 5 or 6 /
IEC 60228 Class 5 or 6
(Single wire diameter, see table below)



Minimum bending radius

flexible use: 10 x cable thickness



Rated voltage

up to 1,0 mm²: U₀/U: 300/500 V
From 1,5 mm²: U₀/U: 450/750 V



Test voltage

3000 V



Protective conductor

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



Range of temperature

flexible use: 0°C to +70°C (1,0 mm²)
flexible use: -15°C to +70°C (from 1,5 mm²)

Part number	Number of cores and mm ² per conductor	Single wire diameter in mm	Overall width in mm approx.	Thickness mm	Copper index kg/km	Weight kg/km approx.
ÖLFLEX® LIFT F						
Rated voltage U₀/U: 300/500 V, Temperature range: 0°C to +70°C						
0042020	12 G 1	0.21	35.0	4.3	115.0	392
0042021	16 G 1	0.21	46.0	4.3	154.0	521
0042022	20 G 1	0.21	57.0	4.3	192.0	645
0042023	24 G 1	0.21	68.0	4.3	230.0	772
Rated voltage U₀/U: 450/750 V, Temperature range: -15°C to +70°C						
00420013	4 G 1.5	0.15	15.0	5.0	58.0	132
00420023	5 G 1.5	0.15	19.0	5.0	72.0	170
0042003	7 G 1.5	0.15	26.0	5.0	101.0	236
0042004	8 G 1.5	0.15	28.0	5.0	115.0	266
0042005	10 G 1.5	0.15	35.0	5.0	144.0	333
0042006	12 G 1.5	0.15	41.0	5.0	173.0	422
00420073	4 G 2.5	0.15	18.4	5.7	96.0	206
00420083	5 G 2.5	0.15	23.1	5.7	120.0	257
0042009	7 G 2.5	0.15	31.5	5.7	168.0	345
0042010	8 G 2.5	0.15	34.2	5.7	192.0	390
0042050	12 G 2.5	0.15	51.0	5.7	288.0	580
00420113	4 G 4	0.15	20.4	6.6	154.0	343
0042012	7 G 4	0.15	35.4	6.6	269.0	589
00420133	4 G 6	0.20	23.2	7.3	230.0	425
00420143	4 G 10	0.30	28.4	9.0	384.0	709
00420153	4 G 16	0.30	34.0	10.5	614.0	1,015
00420163	4 G 25	0.30	42.0	12.7	960.0	1,366

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

Comparable products

- ÖLFLEX® CRANE F see page 45


Info

- Highly flexible SDI and Welding Cable

TP-90 Single Core



Benefits

- Ideal alternative for H07RN-F with improve characteristics
- Highly flexible single core dual insulation and welding cable

Application range

- Connection of electrical equipment, submersible pumps, drills, boilers
- For transportable motors or machines
- Suitable as well for welding application

Product features

- Flame-retardant acc. to IEC 60332-1-2, AS/NZS 1660.5.6
- Oil resistant acc. to IEC 60811-2-W
- Water submersible test in ref. to HD 22.16.S1
- Water resistant outer sheath for outdoor application
- Good abrasion and tearing properties

Approvals (Norm references)



Product Make-up

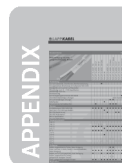
- Extra fine strands of bare copper wires
- TPR insulation
- TPR outer sheath, black

Technical data

	Core identification code white
	Specific insulation resistance > 5 MΩm x km
	Conductor stranding Extra fine wire acc. to AS/NZS 1125 Cl.6 / IEC 60228 Cl.6
	Minimum bending radius occasional flexing: 15 x cable diameter fixed installation: 5 x cable diameter
	Rated voltage U ₀ /U: 600/1000 V
	Test voltage 3500 V
	Range of temperature occasional flexing: -30 °C to +90 °C
	Reference standards In acc. to AS/NZS 5000.1, 1995, and BS 638 Test method to AS/NZS 1660

Part Number	Conductor Cross-Section mm ²	Sheath colour	Approx. Outer Diameter in mm	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
3801451	6	Orange	7.8	57.6	100
3801781		Black			
3801452	10	Orange	8.8	96.0	150
3801782		Black			
3801453	16	Orange	10.2	153.60	230
3801783		Black			
3801454	25	Orange	11.5	240.0	320
3801784		Black			
3801455	35	Orange	12.9	336.0	420
3801785		Black			
3801456	50	Orange	14.8	480.0	580
3801786		Black			
3801457	70	Orange	17.4	672.0	810
3801787		Black			
3801458	95	Orange	19.7	912.0	1080
3801788		Black			
3801459	120	Orange	21.8	1152.0	1360
3801789		Black			
3801460	150	Orange	24.1	1440.0	1680
3801790		Black			
3801461	185	Orange	26.6	1776.0	2030
3801791		Black			
3801462	240	Orange	29.8	2301.0	2660
3801792		Black			
3801463	300	Orange	33.9	2880.0	3380
3801793		Black			
3801464	400	Orange	38.3	3840.0	4400
3801794		Black			
3801465	500	Orange	42.7	4800.0	5520
3801795		Black			
3801466	630	Orange	46.9	6048.0	6820
3801796		Black			

* Please note that minimum order quantity applies



Wide-range use

TPR insulated/sheathed cables



TP-90 Multicore



Info

- Highly flexible chemical-, oil-, abrasion-, and water resistance

LAPP KABEL TP-90/TP-90 Cc

Benefits

- Ideal alternative for H07RN-F with improve characteristics
- Highly flexible TPR insulated/sheathed multicore cable

Application range

- Connection of electrical equipment, submersible pumps, drills, boilers
- For transportable motors or machines

Product features

- Flame-retardant acc. to IEC 60332-1-2, AS/NZS 1660.5.6
- Oil resistant acc. to IEC 60811-2-W
- Water submersible test in ref. to HD 22.16.S1
- UV resistant outer sheath for outdoor application
- Good abrasion and tearing properties

Approvals (Norm references)



Product Make-up

- Fine strands of bare copper wires
- TPR insulation
- TPR outer sheath, black

Technical data



Core identification code

up to 5 cores: colour coded acc. to VDE 0293 starting at 6 cores: black with white numbers



Specific insulation resistance

> 10 MΩm x km



Conductor stranding

Extra fine wire acc. to AS/NZS 1125 Cl.5 / IEC 60228 Cl.5



Minimum bending radius

occasional flexing: 15 x cable diameter
fixed installation: 5 x cable diameter

Rated voltage

U₀/U: 600/1000 V

Test voltage

3500 V



Range of temperature

occasional flexing: -30 °C to +90 °C



Reference standards

In acc. to AS/NZS 5000.1

Water submerged test (PSB 55S05252A/B/C)

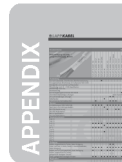
Part Number		Nominal Conductor Cross Section		Approx. Outer Diameter	Approx. Copper Weight	Approx. Cable Weight
		Active mm ²	Earth mm ²	mm	kg/km	kg/km
3 Core (Reduced Earth)						
3801900	1.0	1.0	11.1	29	121	
3801901	1.5	1.5	11.8	43	159	
3801902	2.5	2.5	12.9	72	218	
3801903	4	2.5	13.9	101	287	
3801904	6	2.5	14.7	139	370	
3801905	10	4	16.7	230	719	
3801906	16	6	18.9	365	945	
3801907	25	6	21.7	538	1383	
3801908	35	10	24.4	768	1780	
4 Core (Reduced Earth)						
3801911	1.0	1.0	12.0	38	180	
3801912	1.5	1.5	12.8	58	219	
3801913	2.5	2.5	14.0	96	287	
3801914	4	2.5	15.1	139	365	
3801915	6	2.5	16.3	197	481	
3801916	10	4	18.7	326	847	
3801917	16	6	21.3	518	1148	
3801918	25	6	24.7	778	1659	
3801919	35	10	26.9	1104	2190	
3801920	50	16	32.7	1594	3012	
3801921	70	25	37.6	2256	3975	

Part Number	Nominal Conductor Cross Section		Approx. Outer Diameter mm	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
	Active mm ²	Earth mm ²			
5 Cores (Reduced Earth Core)					
3801926	1.5	1.5	13.8	72	261
3801927	2.5	2.5	15.2	120	349
3801928	4	2.5	16.6	178	453
3801929	6	2.5	17.9	254	598
3801930	10	4	20.6	422	1045
3801931	16	6	23.6	672	1463
3801932	25	6	27.7	1018	2083
3801933	35	10	31.6	1440	2738
3801934	50	16	37.2	2074	3796
3801935	70	25	42.4	2990	5471

TP-90 Multicore

Part Number	Nominal Conductor Cross Section mm ²	Approx. Outer Diameter mm	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
2 Cores (without Earth)				
3802900	2x1.5	11.2	29	121
3802901	2x2.5	12.2	48	159
3802902	2x4	13.4	77	218
3802903	2x6	14.7	116	302
3802904	2x10	16.9	192	573
3802905	2x16	19.4	308	766
3802906	2x25	23.1	480	1142
3802907	2x35	25.8	672	1483
Multicore (Full Earth)				
3802910	3G 4	14.2	115	281
3802911	3G 6	15.6	173	392
3802912	3G 10	17.9	288	725
3802913	3G 16	20.6	461	991
3802914	3G 25	24.6	720	1479
3802915	3G 35	27.5	1008	1927
3802916	3G 50	32.5	1440	2649
3802917	3G 70	36.7	2016	3467
3802918	3G 95	42.3	2736	4315
3802919	3G 120	46.6	3456	5376
3802924	4G 4	15.5	154	354
3802925	4G 6	17.1	231	495
3802926	4G 10	19.7	384	921
3802927	4G 16	22.6	615	1249
3802928	4G 25	27.1	960	1879
3802929	4G 35	30.6	1344	2449
3802930	4G 50	36.1	1920	3380
3802931	4G 70	40.9	2688	4427
3802932	4G 95	47.3	3648	5550
3802938	5G 4	16.9	192	438
3802939	5G 6	18.6	288	610
3802940	5G 10	21.6	480	1120
3802941	5G 16	24.9	768	1533
3802942	5G 25	30.1	1200	2300
3802943	5G 35	34.2	1680	3016
3802944	5G 50	40.2	2400	4154
3802945	5G 70	45.5	3360	5461
3801940	7G 1.5	14.9	101	330
3801941	7G 2.5	16.5	168	445
3801942	12G 1.5	19.3	173	567
3801943	12G 2.5	21.5	288	760
3801947	18G 1.5	22.5	259	811
3801948	27G 1.5	26.9	389	1177
3801949	36G 1.5	30.3	518	1525

Dimensions provided are approximate values and could differ from the actual values upon production. We reserve the right to make any changes to the information provide here.



Wide-range use

XLPE insulated/PVC sheathed cables



INSTRUM BS 502



Info

- Unarmoured cable 0.6/1 kV, XLPE/PVC

LAPP KABEL INSTRUM BS502 CE

Application range

- For main power distribution and lighting circuits in industrial and commercial areas
- Power and control circuit
- Telecom power supply

Product features

- Cable construction in acc. to IEC 60502
- Flame-retardant acc. to IEC 60332-1-2
- UV resistant outer sheath for outdoor application

Approvals (Norm references)



Product Make-up

- Stranded plain annealed copper wires in circular or sectorial shape
- XLPE insulation
- PVC outer sheath, black (RAL 9005)

Technical data



Core identification code
up to 5 cores: colour coded acc. to BS 7671
starting at 6 cores: white with black numbers



Specific insulation resistance
> 8 MΩm x km



Conductor stranding
acc. to IEC 60228 Cl.2



Minimum bending radius
8 x cable diameter



Rated voltage
U₀/U: 600/1000 V



Test voltage
3500 V



Range of temperature
Fixed installation: -40 °C to +90 °C



Reference standards
In acc. to IEC 60502-1

Part Number	No. of Cores mm ² per conductor	Conductor Strands (No./mm)	Approx. Outer Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
3800235	2x1.5	7/0.53	10.0	28.6	130
3800236	3x1.5	7/0.53	10.5	42.9	150
3800237	4x1.5	7/0.53	11.5	57.1	175
3800238	2x2.5	7/0.67	10.8	45.7	165
3800239	3x2.5	7/0.67	11.4	68.5	195
3800240	4x2.5	7/0.67	12.5	91.3	225
3800241	2x4	7/0.85	11.9	73.5	210
3800242	3x4	7/0.85	12.6	110.2	255
3800243	4x4	7/0.85	13.8	147.0	305
3800244	2x6	7/1.04	13.1	110.0	270
3800245	3x6	7/1.04	13.8	165.0	330
3800246	4x6	7/1.04	15.2	220.0	405
3800247	2x10	7/1.35	14.9	185.4	390
3800248	3x10	7/1.35	15.8	278.0	490
3800249	4x10	7/1.35	17.5	370.7	600
3800250	1x16	7/1.70	9.4	144.1	205
3800251	2x16	7/1.70	17.2	293.9	450
3800252	3x16	7/1.70	18.3	440.9	700
3800253	4x16	7/1.70	20.0	587.8	870
3800254	1x25	7/2.14	11.1	228.3	309
3800255	2x25	7/2.14	20.5	465.7	820
3800257	3x25	7/2.14	21.8	698.6	1000
3800259	3x25 + 16	7/2.14 + 7/1.70	22.0	845.6	1150
3800260	4x25	7/2.14	24.0	931.5	1325
3800262	1x35	7/2.52	12.4	316.8	412
3800264	2x35(S)	7/2.52	18.8	646.2	880
3800266	3x35(S)	7/2.52	22.0	969.3	1180
3800267	3x35 + 16	7/2.52 + 7/1.70	25.0	1116.2	1450
3800269	4x35(S)	7/2.52	25.0	1292.3	1600
3800270	1x50	19/1.78	14.0	428.7	540
3800271	2x50(S)	19/1.78	21.0	874.6	1140
3800272	3x50(S)	19/1.78	24.0	1311.9	1600
3800273	3x50 + 25	19/1.78 + 7/2.14	28.5	1544.8	2050
3800274	4x50(S)	19/2.14	28.5	1749.2	2200
3800275	1x70	19/2.52	16.0	619.7	760
3800276	2x70(S)	19/2.52	24.0	1264.1	1560
3800277	3x70(S)	19/2.52	28.0	1896.2	2240
3800278	3x70 + 35	19/2.14 + 7/2.52	32.0	2219.3	2750
3800279	4x70(S)	19/2.14	32.0	2528.3	3050
3800280	1x95	19/2.52	18.0	859.3	1020
3800281	2x95(S)	19/2.52	26.9	1752.9	2130
3800282	3x90(S)	19/2.52	31.0	2629.4	3050
3800283	3x95 + 50	19/2.52 + 19/1.78	37.0	3066.7	3750
3800284	4x95(S)	19/2.52	37.0	3505.9	4070

Please note that minimum order quantity applies

INSTRUM BS 502

Part Number	No. of Cores mm ² per conductor	Conductor Strands (No./mm)	Approx. Outer Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
3800285	1x120	37/2.03	20.0	1085.9	1270
3800286	2x120(S)	37/2.03	29.9	2215.2	2640
3800287	3x120(S)	37/2.03	35.5	3322.7	3800
3800288	3x120 + 70	37/2.03 + 19/2.14	43.0	3954.8	4750
3800289	4x120(S)	37/2.03	43.0	4430.3	5195
3800290	1x150	37/2.25	22.0	1334.0	1560
3800291	2x150(S)	37/2.25	33.4	2721.3	3270
3800292	3x150(S)	37/2.25	38.5	4082.0	4640
3800293	3x150 + 70	37/2.25 + 19/2.14	47.0	4714.0	5700
3800294	4x150(S)	37/2.25	47.0	5442.6	6350
3800295	1x185	37/2.52	24.7	1673.3	1930
3800296	2x185(S)	37/2.52	37.1	3413.6	4040
3800297	3x185	37/2.52	43.0	5120.4	5870
3800298	3x185 + 95	37/2.52 + 19/2.52	51.0	5996.9	705
3800299	4x185(S)	37/2.52	51.0	6827.2	7890
3800300	1x240	61/2.25	27.7	2199.3	2510
3800301	2x240(S)	61/2.25	45.0	4458.6	5250
3800302	3x240(S)	61/2.25	48.0	6687.9	7670
3800303	3x240 + 120	61/2.25 + 37/2.03	55.0	7795.5	9250
3800304	4x240(S)	61/2.25	55.0	8917.2	10400
3800305	1x300	61/2.52	30.6	2758.7	3120
3800306	2x300(S)	61/2.52	50.0	5627.8	6560
3800307	3x300(S)	61/2.52	54.0	8441.8	9460
3800308	3x300 + 150	61/2.52 + 37/2.25	64.0	9802.4	11500
3800309	4x300(S)	61/2.52	64.0	11255.7	12810
3800310	1x400	61/2.85	34.2	3528.6	3970
3800311	1x500	61/3.20	38.0	4448.5	4980
3800312	1x630	127/2.52	42.9	5743.6	6400
3800313	1x800	127/2.85	47.3	7346.4	8190
3800314	1x1000	127/3.20	52.6	9261.6	10265

* Please note that minimum order quantity applies





INSTRUM BS 503



Info

- Armoured cable 0.6/1 kV
XLPE/PVC/SWA/PVC

LAPP KABEL INSTRUM BS503 CE

Application range

- For main power distribution and lighting circuits in industrial and commercial areas
- Power and control circuit
- Telecom power supply
- Suitable for direct burial installations as well as in air or ducts

Product features

- Cable construction in acc. to IEC 60502
- Flame-retardant acc. to IEC 60332-1-2
- UV resistant outer sheath for outdoor application

Approvals (Norm references)



Product Make-up

- Stranded plain annealed copper wires in circular or sectorial shape
- XLPE insulation
- PVC inner sheath, black
- Galvanized steel wire armoured
- PVC outer sheath, black (RAL 9005)

Technical data



Core identification code
up to 5 cores: colour coded acc. to BS 7671 starting at 6 cores: white with black numbers



Specific insulation resistance
> 8 MOhm x km



Conductor stranding
acc. to IEC 60228 Cl.2



Minimum bending radius
10 x cablediameter



Rated voltage
U₀/U: 600/1000 V



Test voltage
3500 V



Range of temperature
Fixed installation: -40 °C to +90 °C



Reference standards
In acc. to IEC 60502-1

Part Number	No. of Cores mm ² per conductor	Conductor Strands (No./mm)	Approx. Outer Diameter (mm)	Approx. Copper Weight (kg/km)	Approx. Cable Weight (kg/km)
3800330	2x1.5	7/0.53	14.0	28.6	350
3800331	3x1.5	7/0.53	14.5	42.9	390
3800332	4x1.5	7/0.53	15.3	57.1	430
3800333	2x2.5	7/0.67	15.0	45.7	400
3800334	3x2.5	7/0.67	15.4	68.5	450
3800335	4x2.5	7/0.67	16.3	91.3	505
3800336	2x4	7/0.85	16.0	73.5	475
3800337	3x4	7/0.85	16.7	110.2	540
3800338	4x4	7/0.85	18.5	147.0	710
3800339	2x6	7/1.04	17.0	110.0	560
3800340	3x6	7/1.04	18.5	165.0	745
3800341	4x6	7/1.04	19.9	220.0	855
3800342	2x10	7/1.35	18.9	185.4	810
3800343	3x10	7/1.35	20.6	278.0	950
3800344	4x10	7/1.35	22.8	370.7	1120
3800345	2x16	7/1.70	20.0	293.9	980
3800346	3x16	7/1.70	23.5	440.9	1250
3800347	4x16	7/1.70	25.3	587.8	1600
3800348	2x25	7/2.14	25.0	465.7	1410
3800350	3x25	7/2.14	27.2	698.6	1840
3800352	3x25 + 16	7/2.14 + 7/1.70	25.7	845.6	1720
3800353	4x25	7/2.14	29.2	931.5	2160
3800356	2x35(S)	7/2.52	24.0	646.2	1530
3800358	3x35(S)	7/2.52	28.0	969.3	2020
3800359	3x35 + 16	7/2.52 + 7/1.70	27.6	1116.2	2100
3800361	4x35(S)	7/2.52	31.0	1292.3	2500
3800362	2x50(S)	19/1.78	26.0	874.6	1880
3800363	3x50(S)	19/1.78	30.0	1311.9	2550
3800364	3x50 + 25	19/1.78 + 7/2.52	30.8	1544.8	2760
3800365	4x50(S)	19/1.78	34.0	1749.2	3100
3800366	2x70(S)	19/2.14	29.5	1264.1	2420
3800367	3x70(S)	19/2.14	35.0	1896.2	3500
3800368	3x70 + 35	19/2.14 + 7/2.52	35.8	2219.3	3800
3800369	4x70(S)	19/2.14	39.0	2528.3	4400
3800370	2x95(S)	19/2.52	33.5	1752.9	3360
3800371	3x95(S)	19/2.52	38.5	2629.4	4500
3800372	3x95 + 50	19/2.52 + 19/1.78	40.2	3066.7	4830
3800373	4x95(S)	19/2.52	43.0	3505.9	5610
3800374	2x120(S)	37/2.03	36.5	2215.2	3980
3800375	3x120(S)	37/2.03	43.0	3322.7	5700
3800376	3x120 + 70	37/2.03 + 19/2.14	44.5	3954.8	5980
3800377	4x120(S)	37/2.03	46.0	4430.3	7400
3800378	2x150(S)	37/2.25	39.5	2721.3	4730
3800379	3x150(S)	37/2.25	47.5	4082.0	6800
3800380	3x150 + 70	37/2.25 + 19/2.14	48.8	4714.0	7470
3800381	4x150(S)	37/2.25	48.5	5442.6	8300
3800382	2x185(S)	37/2.52	45.0	3413.6	6245
3800383	3x185(S)	37/2.52	51.5	5120.4	8200
3800384	3x185 + 95	37/2.52 + 19/2.52	54.1	5996.9	8990
3800385	4x185(S)	37/2.52	57.0	6827.2	10400
3800386	2x240(S)	61/2.25	52.0	4458.6	7820
3800387	3x240(S)	61/2.25	57.0	6687.9	10300
3800388	3x240 + 120	61/2.52 + 37/2.03	59.4	7795.5	11360
3800389	4x240(S)	61/2.25	62.0	8917.2	13000
3800390	2x300(S)	61/2.52	58.0	5627.8	9390
3800391	3x300(S)	61/2.52	63.0	8441.8	12500
3800392	3x300 + 150	61/2.52 + 37/2.25	65.1	9802.4	13700
3800393	4x300(S)	61/2.52	68.0	11255.7	15900

Please note that minimum order quantity applies



Info

- Armoured instrumentation cables
- PE/OS/PE/SWA/PVC
- PE/IS/OS/PE/SWA/PVC

INSTRUM BS 5308 Part 1 Type 2

LAPP KABEL INSTRUM CE

LAPP KABEL INSTRUM IS

Application range

- For communication, data and voice transmission signal in industrial process manufacturing plants
- Oil and Gas industry
- Petrochemical industry
- Generally used for outdoor installation for direct burial or installed in the duct

Product features

- Cable construction in acc. to BS 5308
- Flame-retardant acc. to IEC 60332-3-24
- Blue outer sheath is suitable for use with Group 2 Intrinsically Safe systems in hazardous areas

Approvals (Norm references)



Product Make-up

- Stranded plain annealed copper wires
- PE insulation
- Pairs are individually or collectively screened with aluminium polyester tape with drain wire
- PE inner sheath, black
- Galvanized steel wire armoured
- PVC outer sheath, black or blue

Technical data



Core identification code
Pair : black and white
Multipair : black and white with numbers



Specific insulation resistance
> 5000 MOhm/km



Conductor stranding
acc. to BS 6360 / IEC 60228 Cl.2



Minimum bending radius
6 x cable diameter



Rated voltage
U₀/U: 300/500 V (≤ 50 VAC / 75 VDC for IS)



Test voltage
1000 V C/S
2000 V C/C

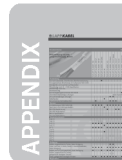


Range of temperature
Fixed installation: -40 °C to +70 °C



Reference standards
In acc. to BS 5308

Part Number	Conductor Strands No. of pairs x Conductor Cross Section mm ²	Approx. Outer Diameter in mm	Outer Sheath Colour	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
PE/OS/PE/SWA/PVC 7x0.30mm					
1270400	1x2x0.5	11.2	Black	14.4	214
1270401			Blue		
1270402	2x2x0.5 (QUAD)	12.1	Black	24	285
1270403			Blue		
1270404	4x2x0.5	16.8	Black	43.2	392
1270405			Blue		
1270406	6x2x0.5	18.5	Black	62.4	527
1270407			Blue		
1270408	8x2x0.5	20.2	Black	81.6	722
1270409			Blue		
1270410	10x2x0.5	22.8	Black	100.8	822
1270411			Blue		
1270412	12x2x0.5	23.4	Black	120	903
1270413			Blue		
1270414	15x2x0.5	25.9	Black	148.8	1311
1270415			Blue		
1270416	20x2x0.5	27.6	Black	196.8	1406
1270417			Blue		
1270418	24x2x0.5	30.6	Black	235.2	1539
1270419			Blue		
1270420	30x2x0.5	32.4	Black	292.8	1800
1270421			Blue		
7x0.37mm					
1270440	1x2x0.75	11.6	Black	19.2	228
1270441			Blue		
1270442	2x2x0.75 (QUAD)	12.8	Black	33.6	323
1270443			Blue		
1270444	4x2x0.75	18.4	Black	62.4	521
1270445			Blue		
1270446	6x2x0.75	20.5	Black	91.2	717
1270447			Blue		
1270448	8x2x0.75	22.5	Black	120	817
1270449			Blue		
1270450	10x2x0.75	25.2	Black	148.8	1102
1270451			Blue		
1270452	12x2x0.75	25.9	Black	177.6	1221
1270453			Blue		
1270454	15x2x0.75	27.5	Black	220.8	1335
1270455			Blue		
1270456	20x2x0.75	29.7	Black	292.8	1639
1270457			Blue		
1270458	24x2x0.75	32.7	Black	350.4	1781
1270459			Blue		
1270460	30x2x0.75	36.0	Black	436.8	2138
1270461			Blue		
1270462	36x2x0.75	40.1	Black	523.2	2736



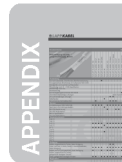
INSTRUM BS 5308 Part 1 Type 2

Part Number	Conductor Strands No. of pairs x Conductor Cross Section mm ²	Approx. Outer Diameter in mm	Outer Sheath Colour	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
PE/OS/PE/SWA/PVC					
7x0.43mm					
1270480	1x2x1.0	12.2	Black	24	233
1270481			Blue		
1270482	2x2x1.0 (QUAD)	13.2	Black	43.2	371
1270483			Blue		
1270484	4x2x1.0	19.6	Black	81.6	651
1270485			Blue		
1270486	6x2x1.0	21.6	Black	120	897
1270487			Blue		
1270488	8x2x1.0	23.1	Black	158.4	1021
1270489			Blue		
1270490	10x2x1.0	25.8	Black	196.8	1378
1270491			Blue		
1270492	12x2x1.0	27.4	Black	235.2	1526
1270493			Blue		
1270494	15x2x1.0	29.1	Black	292.8	1668
1270495			Blue		
1270496	20x2x1.0	31.7	Black	388.8	2048
1270497			Blue		
1270498	24x2x1.0	35.2	Black	465.6	2227
1270499			Blue		
1270500	30x2x1.0	37.5	Black	580.8	2672
1270501			Blue		
1270502	36x2x1.0	42.7	Black	696	3420
1270503			Blue		
7x0.53mm					
1270530	1x2x1.5	13.0	Black	33.6	290
1270531			Blue		
1270532	2x2x1.5 (QUAD)	14.2	Black	62.4	508
1270533			Blue		
1270534	4x2x1.5	20.9	Black	120	734
1270535			Blue		
1270536	6x2x1.5	23.1	Black	177.6	893
1270537			Blue		
1270538	8x2x1.5	24.8	Black	235.2	1031
1270539			Blue		
1270540	10x2x1.5	28.6	Black	292.8	1387
1270541			Blue		
1270542	12x2x1.5	29.4	Black	350.4	1553
1270543			Blue		
1270544	15x2x1.5	31.7	Black	436.8	1743
1270545			Blue		
1270546	20x2x1.5	34.2	Black	580.8	2152
1270547			Blue		
1270548	24x2x1.5	38.8	Black	696	2660
1270549			Blue		
1270550	30x2x1.5	41.2	Black	868.8	3088
1270551			Blue		
1270552	36x2x1.5	45.6	Black	1041.6	3582
1270553			Blue		

Part Number	Conductor Strands No. of pairs x Conductor Cross Section mm ²	Approx. Outer Diameter in mm	Outer Sheath Colour	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
PE/IS/OS/PE/SWA/PVC					
7x0.30mm					
1270600	2x2x0.5	16.1	Black	33.6	356
1270601			Blue		
1270602	4x2x0.5	17.7	Black	62.4	528
1270603			Blue		
1270604	6x2x0.5	20.6	Black	91.2	732
1270605			Blue		
1270606	8x2x0.5	22.0	Black	120	836
1270607			Blue		
1270608	10x2x0.5	25.4	Black	148.8	1131
1270609			Blue		
1270610	12x2x0.5	26.0	Black	177.6	1249
1270611			Blue		
1270612	15x2x0.5	27.8	Black	220.8	1497
1270613			Blue		
1270614	20x2x0.5	29.9	Black	292.8	1677
1270615			Blue		
1270616	24x2x0.5	32.9	Black	350.4	1824
1270617			Blue		
1270618	30x2x0.5	34.5	Black	436.8	2280
1270619			Blue		

INSTRUM BS 5308 Part 1 Type 2

Part Number	Conductor Strands No. of pairs x Conductor Cross Section mm ²	Approx. Outer Diameter in mm	Outer Sheath Colour	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
PE/IS/OS/PE/SWA/PVC					
7x0.37mm					
1270640	2x2x0.75	17.1	Black	43.2	390
1270641			Blue		
1270642	4x2x0.75	18.9	Black	81.6	608
1270643			Blue		
1270644	6x2x0.75	22.1	Black	99.9	822
1270645			Blue		
1270646	8x2x0.75	23.7	Black	120	936
1270647			Blue		
1270648	10x2x0.75	27.3	Black	158.4	1259
1270649			Blue		
1270650	12x2x0.75	28.1	Black	196.8	1392
1270651			Blue		
1270652	15x2x0.75	30.2	Black	235.2	1568
1270653			Blue		
1270654	20x2x0.75	33.7	Black	292.8	2180
1270655			Blue		
1270656	24x2x0.75	37.1	Black	388.8	2394
1270657			Blue		
1270658	30x2x0.75	39.3	Black	465.6	2803
1270659			Blue		
1270660	36x2x0.75	44.1	Black	696	3249
1270661			Blue		
7x0.43mm					
1270680	2x2x1.0	18.2	Black	52.8	487
1270681			Blue		
1270682	4x2x1.0	20.4	Black	100.8	774
1270683			Blue		
1270684	6x2x1.0	23.8	Black	148.8	1027
1270685			Blue		
1270686	8x2x1.0	25.7	Black	196.8	1170
1270687			Blue		
1270688	10x2x1.0	29.5	Black	244.8	1573
1270689			Blue		
1270690	12x2x1.0	30.7	Black	292.8	1740
1270691			Blue		
1270692	15x2x1.0	32.7	Black	364.8	1959
1270693			Blue		
1270694	20x2x1.0	36.2	Black	484.8	2725
1270695			Blue		
1270696	24x2x1.0	40.0	Black	580.8	2993
1270697			Blue		
1270698	30x2x1.0	43.0	Black	724.8	3503
1270699			Blue		
1270700	36x2x1.0	47.6	Black	868.8	4061
1270701			Blue		
7x0.53mm					
1270730	2x2x1.5	20.4	Black	72	556
1270731			Blue		
1270732	4x2x1.5	22.8	Black	139.2	838
1270733			Blue		
1270734	6x2x1.5	26.7	Black	206.4	1135
1270735			Blue		
1270736	8x2x1.5	29.2	Black	273.6	1368
1270737			Blue		
1270738	10x2x1.5	32.8	Black	340.8	1610
1270739			Blue		
1270740	12x2x1.5	33.8	Black	408	1800
1270741			Blue		
1270742	15x2x1.5	37.3	Black	508.8	2261
1270743			Blue		
1270744	20x2x1.5	40.3	Black	676.8	2793
1270745			Blue		
1270746	24x2x1.5	44.9	Black	811.2	3059
1270747			Blue		
1270748	30x2x1.5	49.5	Black	1012.8	3805
1270749			Blue		
1270750	36x2x1.5	55.1	Black	1214.4	4679
1270751			Blue		





INSTRUM BS 5308 Part 2 Type 2



Info

- Armoured instrumentation cables
- PVC/OS/PVC/SWA/PVC
- PVC/IS/OS/PVC/SWA/PVC

Application range

- For communication, data and voice transmission signal in industrial process manufacturing plants
- Oil and Gas industry
- Petrochemical industry
- Generally used for outdoor installation for direct burial or installed in the duct

Product features

- Cable construction in acc. to BS 5308
- Flame-retardant acc. to IEC 60332-3-24
- Blue outer sheath is suitable for use with Group 2 Intrinsically Safe systems in hazardous areas

Approvals (Norm references)



Product Make-up

- Stranded plain annealed copper wires
- PVC insulation
- Pairs are individually or collectively screened with aluminium polyester tape with drain wire
- PVC inner sheath, black
- Galvanized steel wire armoured
- PVC outer sheath, black or blue

Technical data



Core identification code

Pair : black and white
Multipair : black and white with numbers



Specific insulation resistance

> 100 MΩm/km



Conductor stranding

acc. to BS 6360 / IEC 60228 Cl.2



Minimum bending radius

6 x cable diameter



Rated voltage

U₀/U: 300/500 V (≤ 50 VAC / 75 VDC for IS)



Test voltage

1000 V C/S

2000 V C/C



Range of temperature

Fixed installation: -40 °C to +105 °C



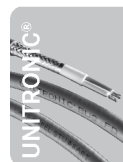
Reference standards

In acc. to BS 5308

Part Number	Conductor Strands No. of pairs x Conductor Cross Section mm ²	Approx. Outer Diameter in mm	Outer Sheath Colour	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
PVC/OS/PVC/SWA/PVC 7x0.30mm					
1271380	1x2x0.5	11.2	Black	14.4	248
1271381			Blue		
1271382	2x2x0.5 (QUAD)	12.1	Black	24	330
1271383			Blue		
1271384	4x2x0.5	16.8	Black	43.2	455
1271385			Blue		
1271386	6x2x0.5	18.5	Black	62.4	611
1271387			Blue		
1271388	8x2x0.5	20.2	Black	81.6	836
1271389			Blue		
1271390	10x2x0.5	22.8	Black	100.8	952
1271391			Blue		
1271392	12x2x0.5	23.4	Black	120	1045
1271393			Blue		
1271394	15x2x0.5	25.7	Black	148.8	1518
1271395			Blue		
1271396	20x2x0.5	27.8	Black	196.8	1628
1271397			Blue		
1271398	24x2x0.5	30.8	Black	235.2	1782
1271399			Blue		
1271400	30x2x0.5	32.6	Black	292.8	2085
1271401			Blue		
7x0.37mm 1x2x0.75					
1271420	1x2x0.75	11.6	Black	19.2	264
1271421			Blue		
1271422	2x2x0.75 (QUAD)	12.8	Black	33.6	374
1271423			Blue		
1271424	4x2x0.75	17.7	Black	62.4	603
1271425			Blue		
1271426	6x2x0.75	20.3	Black	91.2	831
1271427			Blue		
1271428	8x2x0.75	21.8	Black	120	946
1271429			Blue		
1271430	10x2x0.75	25.0	Black	148.8	1276
1271431			Blue		
1271432	12x2x0.75	25.7	Black	177.6	1414
1271433			Blue		
1271434	15x2x0.75	27.5	Black	220.8	1546
1271435			Blue		
1271436	20x2x0.75	29.7	Black	292.8	1898
1271437			Blue		
1271438	24x2x0.75	32.9	Black	350.4	2063
1271439			Blue		
1271440	30x2x0.75	36.4	Black	436.8	2475
1271441			Blue		
1271442	36x2x0.75	40.1	Black	523.2	3168
1271443			Blue		

INSTRUM BS 5308 Part 2 Type 2

Part Number	Conductor Strands No. of pairs x Conductor Cross Section mm ²	Approx. Outer Diameter in mm	Outer Sheath Colour	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
PVC/OS/PVC/SWA/PVC					
7x0.43mm					
1271460	1X2X1.0	11.8	Black	24	270
1271461			Blue		
1271462	2x2x1.0 (QUAD)	13.0	Black	43.2	429
1271463			Blue		
1271464	4x2x1.0	19.0	Black	81.6	753
1271465			Blue		
1271466	6x2x1.0	20.9	Black	120	1038
1271467			Blue		
1271468	8x2x1.0	22.5	Black	158.4	1183
1271469			Blue		
1271470	10x2x1.0	24.9	Black	196.8	1595
1271471			Blue		
1271472	12x2x1.0	26.5	Black	235.2	1767
1271473			Blue		
1271474	15x2x1.0	28.2	Black	292.8	1932
1271475			Blue		
1271476	20x2x1.0	30.5	Black	388.8	2372
1271477			Blue		
1271478	24x2x1.0	33.8	Black	465.6	2578
1271479			Blue		
1271480	30x2x1.0	36.3	Black	580.8	3094
1271481			Blue		
1271482	36x2x1.0	41.3	Black	696	3960
1271483			Blue		
7x0.53mm					
1271500	1x2x1.5	13.0	Black	33.6	336
1271501			Blue		
1271502	2x2x1.5 (QUAD)	14.2	Black	62.4	589
1271503			Blue		
1271504	4x2x1.5	20.9	Black	120	849
1271505			Blue		
1271506	6x2x1.5	23.1	Black	177.6	1034
1271507			Blue		
1271508	8x2x1.5	24.8	Black	235.2	1194
1271509			Blue		
1271510	10x2x1.5	28.6	Black	292.8	1606
1271511			Blue		
1271512	12x2x1.5	29.4	Black	350.4	1799
1271513			Blue		
1271514	15x2x1.5	31.7	Black	436.8	2019
1271515			Blue		
1271516	20x2x1.5	35.0	Black	580.8	2492
1271517			Blue		
1271518	24x2x1.5	38.8	Black	696	3080
1271519			Blue		
1271520	30x2x1.5	41.2	Black	868.8	3575
1271521			Blue		
1271522	36x2x1.5	45.6	Black	1041.6	4147
1271523			Blue		
7x0.67mm					
1271550	1x2x2.5	14.6	Black	52.8	407
1271551			Blue		
1271552	2x2x2.5 (Quad)	20.4	Black	100.8	589
1271553			Blue		
1271554	4x2x2.5	24.3	Black	196.8	1111
1271555			Blue		
1271556	6x2x2.5	27.9	Black	292.8	1518
1271557			Blue		
1271558	8x2x2.5	30.6	Black	388.8	1793
1271559			Blue		
1271560	10x2x2.5	34.5	Black	484.8	2145
1271561			Blue		
1271562	12x2x2.5	35.9	Black	580.8	2437
1271563			Blue		
1271564	15x2x2.5	39.3	Black	724.8	3058
1271565			Blue		
1271566	20x2x2.5	42.6	Black	964.8	3740
1271567			Blue		
1271568	24x2x2.5	47.3	Black	1156.8	4180
1271569			Blue		
1271570	30x2x2.5	51.0	Black	1444.8	4785
1271571			Blue		
1271572	36x2x2.5	56.8	Black	1732.8	5280
1271573			Blue		



INSTRUM BS 5308 Part 2 Type 2

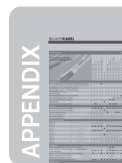
Part Number	Conductor Strands No. of pairs x Conductor Cross Section mm ²	Approx. Outer Diameter in mm	Outer Sheath Colour	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
PVC/IS/OS/PVC/SWA/PVC					
7x0.30mm					
1271600	2x2x0.5	16.1	Black	33.6	413
1271601			Blue		
1271602	4X2X0.5	18.6	Black	62.4	623
1271603			Blue		
1271604	6x2x0.5	20.6	Black	91.2	847
1271605			Blue		
1271606	8x2x0.5	22.0	Black	120	968
1271607			Blue		
1271608	10x2x0.5	25.4	Black	148.8	1309
1271609			Blue		
1271610	12x2x0.5	26.0	Black	177.6	1447
1271611			Blue		
1271612	15x2x0.5	27.8	Black	220.8	1605
1271613			Blue		
1271614	20x2x0.5	29.9	Black	292.8	1942
1271615			Blue		
1271616	24x2x0.5	32.9	Black	350.4	2112
1271617			Blue		
1271618	30x2x0.5	36.1	Black	436.8	2640
1271619			Blue		
7x0.37mm					
1271630	2x2x0.75	17.1	Black	43.2	451
1271631			Blue		
1271632	4x2x0.75	19.8	Black	81.6	717
1271633			Blue		
1271634	6x2x0.75	22.1	Black	99.9	952
1271635			Blue		
1271636	8x2x0.75	23.7	Black	120	1084
1271637			Blue		
1271638	10x2x0.75	27.3	Black	158.4	1458
1271639			Blue		
1271640	12x2x0.75	28.1	Black	196.8	1612
1271641			Blue		
1271642	15x2x0.75	30.2	Black	235.2	1815
1271643			Blue		
1271644	20x2x0.75	33.7	Black	292.8	2525
1271645			Blue		
1271646	24x2x0.75	37.1	Black	388.8	2772
1271647			Blue		
1271648	30x2x0.75	39.1	Black	465.6	3245
1271649			Blue		
1271650	36x2x0.75	44.1	Black	696	3762
1271651			Blue		
7x0.43mm					
1271680	2x2x1.0	18.2	Black	52.8	564
1271681			Blue		
1271682	4x2x1.0	20.4	Black	100.8	879
1271683			Blue		
1271684	6x2x1.0	23.8	Black	148.8	1189
1271685			Blue		
1271686	8x2x1.0	25.7	Black	196.8	1354
1271687			Blue		
1271688	10x2x1.0	29.5	Black	244.8	1822
1271689			Blue		
1271690	12x2x1.0	30.7	Black	292.8	2014
1271691			Blue		
1271692	15x2x1.0	32.7	Black	364.8	2269
1271693			Blue		
1271694	20x2x1.0	36.2	Black	484.8	3156
1271695			Blue		
1271696	24x2x1.0	40.0	Black	580.8	3465
1271697			Blue		
1271698	30x2x1.0	43.0	Black	724.8	4056
1271699			Blue		
1271700	36x2x1.0	47.6	Black	868.8	4703
1271701			Blue		



INSTRUM BS 5308 Part 2 Type 2

Part Number	Conductor Strands No. of pairs x Conductor Cross Section mm ²	Approx. Outer Diameter in mm	Outer Sheath Colour	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
PVC/IS/OS/PVC/SWA/PVC					
	7x0.53mm				
1271720	2x2x1.5	20.7	Black	72	644
1271721			Blue		
1271722	4x2x1.5	23.0	Black	139.2	970
1271723			Blue		
1271724	6x2x1.5	26.7	Black	206.4	1315
1271725			Blue		
1271726	8x2x1.5	29.1	Black	273.6	1584
1271727			Blue		
1271728	10x2x1.5	32.5	Black	340.8	1865
1271729			Blue		
1271730	12x2x1.5	33.4	Black	408	2085
1271731			Blue		
1271732	15x2x1.5	36.8	Black	508.8	2618
1271733			Blue		
1271734	20x2x1.5	39.7	Black	676.8	3234
1271735			Blue		
1271736	24x2x1.5	44.0	Black	811.2	3542
1271737			Blue		
1271738	30x2x1.5	48.5	Black	1012.8	4406
1271739			Blue		
1271740	36x2x1.5	53.7	Black	1214.4	5418
1271741			Blue		
	7x0.67mm				
1271760	2x2x2.5	20.0	Black	110.4	803
1271761			Blue		
1271762	4x2x2.5	24.5	Black	216	1139
1271763			Blue		
1271764	6x2x2.5	29.5	Black	321.6	1705
1271765			Blue		
1271766	8x2x2.5	32.0	Black	427.2	1997
1271767			Blue		
1271768	10x2x1.5	35.5	Black	532.8	2376
1271769			Blue		
1271770	12x2x1.5	38.5	Black	638.4	2717
1271771			Blue		
1271772	15x2x1.5	42.5	Black	796.8	3383
1271773			Blue		
1271774	20x2x1.5	44.5	Black	1060.8	4052
1271775			Blue		
1271776	24x2x1.5	48.5	Black	1272	4664
1271777			Blue		
1271778	30x2x1.5	52.0	Black	1588.8	5506

Part Number	Conductor Strands No. of pairs x Conductor Cross Section mm ²	Approx. Outer Diameter in mm	Outer Sheath Colour	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
PVC/OS/PVC/SWA/PVC					
	7x0.3mm				
1271800	3x0.5 (triad)	11.5	Black	19.2	280
1271801			Blue		
1271802	4x0.5	12.1	Black	24	335
1271803			Blue		
1271804	6x0.5	13.7	Black	33.6	360
1271805			Blue		
1271806	10x0.5	16.4	Black	52.8	510
1271807			Blue		
1271808	16x0.5	16.7	Black	81.6	710
1271809			Blue		
1271810	20x0.5	20.2	Black	100.8	960
1271811			Blue		
1271812	24x0.5	21.7	Black	120	1160
1271813			Blue		
1271814	30x0.5	22.6	Black	148.8	1280
1271815			Blue		
1271816	40x0.5	25.5	Black	196.8	1440
1271817			Blue		



INSTRUM BS 5308 Part 2 Type 2

Part Number	Conductor Strands No. of pairs x Conductor Cross Section mm ²	Approx. Outer Diameter in mm	Outer Sheath Colour	Approx. Copper Weight kg/km	Approx. Cable Weight kg/km
PVC/OS/PVC/SWA/PVC					
7x0.37mm					
1271830	3X0.75 (triad)	12.6	Black	26.4	305
1271831			Blue		
1271832	4x0.75	13.5	Black	33.6	335
1271833			Blue		
1271834	6x0.75	15.2	Black	48	400
1271835			Blue		
1271836	10x0.75	18.4	Black	76.8	565
1271837			Blue		
1271838	16x0.75	18.8	Black	120	760
1271839			Blue		
1271840	20x0.75	22.9	Black	148.8	950
1271841			Blue		
1271842	24x0.75	24.7	Black	177.6	1120
1271843			Blue		
1271844	30x0.75	26.2	Black	220.8	1380
1271845			Blue		
1271846	40x0.75	29.4	Black	292.8	1590
1271847			Blue		
7x0.53mm					
1271860	3X1.5 (triad)	14.5	Black	48	380
1271861			Blue		
1271862	4x1.5	15.4	Black	62.4	420
1271863			Blue		
1271864	6x1.5	17.1	Black	91.2	540
1271865			Blue		
1271866	10x1.5	21.9	Black	148.8	750
1271867			Blue		
1271868	16x1.5	24.6	Black	235.2	1010
1271869			Blue		
1271870	20x1.5	27.7	Black	264	1260
1271871			Blue		
1271872	24x1.5	30.0	Black	350.4	1450
1271873			Blue		
1271874	30x1.5	32.0	Black	436.8	1675
1271875			Blue		
1271876	40x1.5	35.1	Black	580.8	2140
1271877			Blue		
7x0.67mm					
1271900	3X2.5 (triad)	15.1	Black	76.8	500
1271901			Blue		
1271902	4x2.5 (Quad)	16.2	Black	100.8	535
1271903			Blue		
1271904	6x2.5	19.3	Black	148.8	780
1271905			Blue		
1271906	10x2.5	23.1	Black	244.8	940
1271907			Blue		
1271908	16x2.5	25.5	Black	388.8	1630
1271909			Blue		
1271910	20x2.5	29.1	Black	484.8	1950
1271911			Blue		
1271912	24x2.5	31.7	Black	580.8	2215
1271913			Blue		
1271914	30x2.5	33.1	Black	724.8	2680
1271915			Blue		
1271916	40x2.5	37.3	Black	964.8	3455
1271917			Blue		

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UNITRONIC®

Data communication systems



Cables for PROFIBUS-DP/FMS/FIP

Characteristic impedance 135 - 165 Ohm



UNITRONIC® BUS L2/FIP 105

LAPP KABEL STUTTGART UNITRONIC® BUS L2/FIP 105

Benefits

- A standard PROFIBUS cable can only be used up to a max. 80°C
- This enables an extended area of application

Application range

- Cable has been designed for use in factory halls where temperatures up to a max. 105°C may occur.

Product features

- Flame-retardant acc. to IEC 60332-1-2
- Oil-resistant

Approvals (Norm references)



Product Make-up

- Stranded bare copper conductor, 7 wire
- Core insulation Polypropylene
- Screening Aluminium laminated foil and copper braiding
- PVC outer sheath for use up to 105°C
- Colour: violet (RAL 4001)

Technical data

	Mutual capacitance approx. 28.5 nF/km
	Peak working voltage Max. 100 V (not for power applications)
	Impedance at 3 - 20 MHz: 150 +/- 15 Ohm
	Conductor resistance Max. 110 Ohm/km
	Minimum bending radius 65mm
	Test voltage 1500 V core/core
	Range of temperature -30°C to +105°C

Part number	Article designation	Number of pairs and conductor diameter in mm	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
2170630	UNITRONIC® BUS L2/FIP 105	1 x 2 x 0.64	8.0	30.1	70.0

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

LAPPKABEL is a member of the INTERBUS CLUB user organization

Accessories

- DATA STRIP stripping tool

UNITRONIC® BUS L2/FIP ROBUST

UNITRONIC® BUS L2/FIP ROBUST FR

Benefits

- Robust PROFIBUS cable for use under problematic environmental conditions

Application range

- Use for PROFIBUS-DP or FIP in harsh industrial environment
- Stationary application

Product features

- Significantly extended use and application areas, water and chemical resistance for use in industrial conditions.
- High resistance tensile, soaps, etc.
- UV-resistant
- Flame-retardant acc. to IEC 60332-1-2

- The stated bit rates allow the following cable lengths (maximum) according of PROFIBUS User Organisation of one bus segment (Type A cable, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m

Approvals (Norm references)



Product Make-up

- Design and technical data like PVC version
- With conventional cable structure, but with outer sheath of special TPE
- Colour: violet (RAL 4001)

Technical data

	Mutual capacitance (1 kHz): approx. 28.5 nF/km
	Peak working voltage (not for power purposes) 250 V
	Conductor resistance (loop): max. 110 Ohm/km
	Minimum bending radius fixed installation: 75 mm
	Test voltage Core/core: 1500 V
	Range of temperature -30°C to +70°C
	Characteristic impedance (3 - 20 MHz): 150 +/- 15 Ohm

Part number	Article designation	Number of pairs and conductor diameter in mm	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
2170620	UNITRONIC® BUS L2/FIP ROBUST FR	1 x 2 x 0.64	8.0	26.0	55.0

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

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LAPPKABEL is a member of the INTERBUS CLUB user organization



UNITRONIC® BUS HFFR L2/FIP FC UL/CSA

Benefits

- “Fast Connect” (FC) cable design

Application range

- Application where the combination of halogen free outer sheath with properties similar to polyurethane and enhanced flame retardancy is requested

Product features

- Cable is UL/CSA approved (CMG)
- Halogen-free
- Flame retardant in accordance with IEC 60332-3
- Oil-resistant

- The stated bit rates allow the following cable lengths (maximum) according of PROFIBUS User Organisation of one bus segment (Type A cable, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m

Approvals (Norm references)



Product Make-up

- Solid bare copper conductor
- PE core insulation
- Inner sheath, screening foil and copper braiding
- Thermoplastic outer sheath
- Colour: violet (RAL 4001)

Technical data

	Approvals UL/CSA (CMG)
	Mutual capacitance approx. 28.5 nF/km
	Peak working voltage Max. 100 V (not for power applications)
	Impedance at 3 - 20 MHz: 150 +/- 15 Ohm
	Conductor resistance max. 100 Ohm/km
	Minimum bending radius 65mm
	Test voltage 1500 V core/core
	Range of temperature -30°C to +70°C

Part number	Article designation	Number of pairs and conductor diameter in mm	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
Stationary application 2170853	UNITRONIC® BUS HFFR L2/FIP FC UL/CSA	1 x 2 x 0.64	8.0	30.1	75.0

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

LAPPKABEL is a member of the INTERBUS CLUB user organization

Accessories

- FC Strip stripping tool



Info

- Leaky Coax
- Homogenous Transmission
- Tunnel, Mining
- 75 Ohm

RG TUNNEL CABLE

LAPP KABEL RG TUNNEL CABLE 75 OHM

Benefits

- Signal transmission by RF leaky concept

Application range

- Suitable for use in tunnels, mining areas subway, underground facility

Product features

- Leaky coax constructed with railing of parallel bare copper for homogenous transmission
- Optimized up to 600 MHz in VHF/UHF Transmission and data networking
- Flame retardant in acc. to IEC 60332-1
- RoHS compliant

Approvals (Norm references)



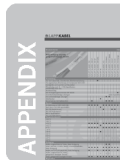
Product Make-up

- Solid bare copper conductor
- Foam PE insulation, white
- Railing of parallel bare copper outer conductor with PE mylar embed
- PE compound bedding, black
- PVC compound outer sheath, yellow

Technical data

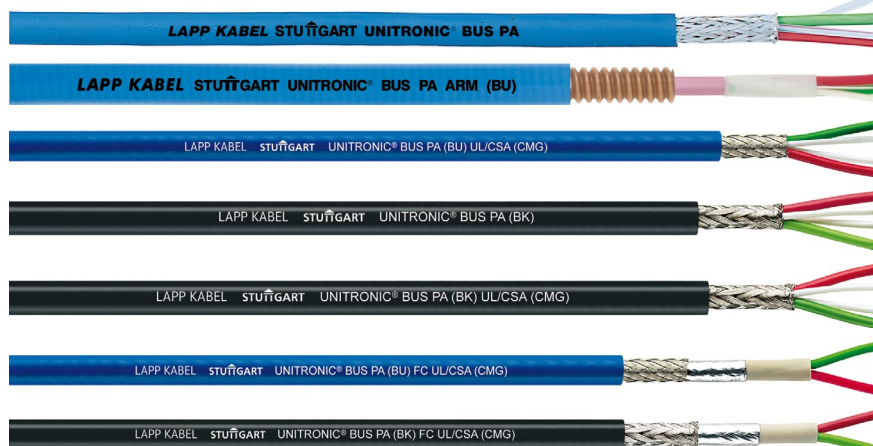
	Coupling loss 60 dB at 85 MHz 70 dB at 150 MHz
	DCR loop 8.7 Ohm/km
	Insulation resistance Min. 1000 MOhm.km
	Attenuation loss 8.35 dB/100 m at 600 MHz
	Characteristic impedance 75 +/- 3 Ohm
	Minimum bending radius 15 x OD
	Range of temperature -30°C to +75°C

Part number	Type	Conductor diameter in mm	Outer diameter in mm approx.	Weight kg/km approx.
3803150	SLYWV7510BC	2.31	15.5	245.0





UNITRONIC® BUS PA



Info

- PA= Process Automation

Application range

- Process automation application for connecting sensors and actuators - including in areas with a risk of explosion.
- Stationary application

Product features

- Bit rate = 31.25 kbit/s. Transmission technology RS485 also possible but bit rate is limited to 1.5 Mbit/s
- Maximum segment length depends on several factors (e.g. supply voltage, current demand).
- Technical Data: see overview "UNITRONIC® Bus Cables".
- Flame-retardant acc. to IEC 60332-1-2

Approvals (Norm references)



- PROFIBUS® PA is standardised in EN 50170 like PROFIBUS® DP and PROFIBUS® FMS
- Transmission technology for PROFIBUS-PA in accordance with international standard IEC 61158-2

Product Make-up

- UNITRONIC® BUS PA (BU + BK)**
Stranded copper conductor, core colours red and green, copper braiding, PVC sheath, colour: blue (intrinsically safe area), colour: black (non-intrinsically safe area)
- UNITRONIC® BUS PA (BU + BK) UL/CSA (CMG)**
as above however with UL/CSA approval (non-FC versions)
- UNITRONIC® BUS PA ARM (BU)**
As above however with armoring (EMC compatible, UV resistant), outer sheath blue
- UNITRONIC® BUS PA (BU + BK) FC UL/CSA (CMG)**
As above however with "Fast Connect" cable design which allows a quick connection of the IDC connector (Insulation Displacement Connection). Only FC versions.

Technical data



Peak working voltage
(not for power purposes) 250 V



Conductor resistance
(loop): max. 44 Ohm/km



Minimum bending radius
fixed installation: 70 mm



Test voltage
Core/core: 1500 V



Range of temperature
fixed installation: -30 °C to +60 °C



Characteristic impedance
100 +/- 20 Ohm

Part number	Article designation	Number of pairs and cable diameter per conductor in mm	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
for fixed installation - conventional cable assembly					
2170234	UNITRONIC® BUS-PA (BU)	1 x 2 x 1.00	7.4	45.0	75.0
2170834	UNITRONIC® BUS PA (BU) UL/CSA (CMG)	1 x 2 x 1.00	7.4	45.0	75.0
2170248	UNITRONIC® BUS PA ARM (BU)	1 x 2 x 1.00	11.1	91.6	141.0
2170235	UNITRONIC® BUS PA (BK)	1 x 2 x 1.00	8.0	45.0	75.0
2170835	UNITRONIC® BUS PA (BK) UL/CSA (CMG)	1 x 2 x 1.00	7.4	45.0	75.0
for fixed installation - "Fast Connect" cable assembly					
2170334	UNITRONIC® BUS PA (BU) FC UL/CSA (CMG)	1 x 2 x 1.00	8.0	45.5	103.0
2170335	UNITRONIC® BUS PA (BK) FC UL/CSA (CMG)	1 x 2 x 1.00	8.0	45.5	103.0

Copper price basis: EUR 150 / 100 kg

Our standard lengths, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

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Armoured

Accessories

- FC Strip stripping tool



UNITRONIC® BUS L2/FIP SWA


Info

- DP = Decentralized Periphery



Benefits

- PROFIBUS-DP Steel Wire Armouring
- Provide a high operating security during data transmission

Application range

- Designed for the system-defined transmission rates of 1.5 Mbs, 2.5 Mbs and 12 Mbs
- Suitable for direct burial and permanent installation in harsh and rugged environments
- For oil and gas, petrochemical industry
- For indoor and outdoor

Product features

- Suitable for SIEMENS SINEC L2 DP in acc. to DIN 19245 part 3 and EN 50170
- Suitable for interfaces RS 422 and RS 485
- Flame-retardant acc. to IEC 60332-1-2
- RoHS compliant

Approvals (Norm references)



Product Make-up

- Bare copper conductor
- Core insulation Foam PE
- Red and Green core
- Screening aluminium mylar tape and copper braiding
- PVC inner sheath, violet
- Armouring galvanized steel wire
- PVC outer sheath
- Colour: black

Technical data

	Mutual capacitance approx. 30 nF/km at 800 Hz
	Peak working voltage Max. 250 V (not for power applications)
	Impedance at 3 - 20 MHz: 150 +/- 15 Ohm
	Conductor resistance Max. 110 Ohm/km
	Minimum bending radius 10 x OD
	Test voltage 1500 V
	Range of temperature -30°C to +70°C

Part number	Article designation	Number of pairs and conductor diameter in mm	Insulation	Outer diameter in mm approx.	Weight kg/km approx.
3803156	UNITRONIC® BUS L2/FIP SWA	1 x 2 x 0.64	FPE	12.6	300

UNITRONIC® BUS PA SWA


Info

- PA = Process Automation



Benefits

- PROFIBUS-PA Steel Wire Armouring

Application range

- Designed for the system-defined transmission rates of 1.5 Mbs, and 31.25 KHz suitable for RS 485
- Suitable for direct burial and permanent installation in harsh and rugged environments
- Suitable for oil and gas, petrochemical industry
- For indoor and outdoor

Product features

- Transmission technology for PROFIBUS-PA in acc. to IEC 61158-2 standard
- Blue outer sheath colour for intrinsically safe area
- Flame-retardant acc. to IEC 60332-1-2
- RoHS compliant
- UV resistance

Approvals (Norm references)



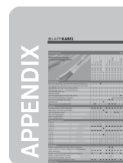
Product Make-up

- Bare copper conductor
- Core insulation Foam PE
- Red and Green core
- Screening aluminium mylar tape and copper braiding
- PVC inner sheath, black or blue
- Armouring galvanized steel wire
- PVC outer sheath
- Colour: black or blue

Technical data

	Mutual capacitance approx. 52 nF/km at 800 Hz
	Peak working voltage Max. 100 V (not for power applications)
	Impedance at 31.25 KHz: 100 +/- 20 Ohm
	Conductor resistance Max. 44 Ohm/km
	Minimum bending radius 10 x OD
	Test voltage 1500 V
	Range of temperature -30°C to +70°C

Part number	Article designation	Number of pairs and conductor diameter in mm	Outer sheath colour	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
3803158	UNITRONIC® BUS PA SWA	1 x 2 x 1.0	Black	12.8	45	305
3803159	UNITRONIC® BUS PA SWA	1 x 2 x 1.0	Blue	12.8	45	305



UNITRONIC® BUS FF



LAPP KABEL STUTTGART

UNITRONIC® BUS FF

LAPP KABEL STUTTGART UNITRONIC® BUS FF 3 ARM (YE)

LAPP KABEL STUTTGART UNITRONIC® BUS FF 3 ARM (BU)



Info

- FF = FOUNDATION™ Fieldbus (process automation)

Benefits

- Cables meet requirements of the ISA/SP50 and the FOUNDATION™ field bus for the cable Type A.

Application range

- FOUNDATION™ Fieldbus is used in intrinsically safe areas, especially in the field of Process Automation
- Stationary application

Product features

- All cables are designed for 105°F (+40,5°C) and are resistant to sunlight

Approvals (Norm references)



- With UL/CSA approval (CMG / PLTC)

Product Make-up

- LAPP bus cables for FOUNDATION™ field bus are available in 3 versions:
 - 3-core, unarmoured, with device ground
 - 3-core, armoured (copper tape, longitudinal welded and spiral corrugated) with device ground
 - 2-wire, not armoured, without device ground

Technical data

	Approvals
	UL/CSA-approval CMG
	Peak working voltage
	300 V
	Conductor resistance
	≤ 24 Ohm/km
	Minimum bending radius
	15 x cable diameter
	Test voltage
	1500 V
	Range of temperature
	-25°C (-13°F) to 80°C (176°F)
	Characteristic impedance
	100 +/- 20 Ohm at 31.25 kHz

Part number	Article designation	Number of pairs and cond. diameter	Outer diameter in mm approx.	Copper index kg/km	Weight kg/km approx.
2170350	UNITRONIC® BUS FF 3 UL/CSA (CMG)	1x2x1.1 + 1x1.1 Ø	7.9	61.6	93.0
2170351	UNITRONIC® BUS FF 3 ARM (YE) UL/CSA (CMG)	1x2x1.1 + 1x1.1 Ø	12.3	106.5	182.0
2170353	UNITRONIC® BUS FF 3 ARM (BU) UL/CSA (CMG)	1x2x1.1 + 1x1.1 Ø	12.3	106.5	182.0
2170352	UNITRONIC® BUS FF 2 UL/CSA (CMG)	1 x 2 x 1.1	7.9	53.3	82.0

UNITRONIC® BUS FF SWA

LAPP KABEL UNITRONIC® BUS FF SWA



Info

- FOUNDATION™ Fieldbus with SWA

Benefits

- FOUNDATION™ Fieldbus Steel Wire Armouring

Application range

- Especially used in the field of process automation units
- Suitable for direct burial as well as indoor and outdoor installation

Product features

- In acc. to IEC 61158-2 Type A
- Flame-retardant acc. to IEC 60332-2-24
- RoHS compliant

Approvals (Norm references)



Product Make-up

- Stranded bare copper conductor
- Core insulation cross-linked PE
- Blue and Brown core
- Screening aluminium foil overlapped, plastic tape wrapping and tinned copper braiding
- PVC inner sheath, yellow
- Armouring galvanized steel wire
- PVC outer sheath
- Colour: black

Technical data

	Mutual capacitance
	approx. 65 nF/km at 1 kHz
	Peak working voltage
	Max. 300 V (not for power applications)
	Impedance
	at 31.25 kHz: 100 +/- 20 Ohm
	Conductor resistance
	Max. 24 Ohm/km
	Minimum bending radius
	15 x OD
	Test voltage
	1500 V
	Range of temperature
	-25°C to +90°C

Part number	Article designation	Number of pairs and cond. diameter	Insulation colour	Inner sheath colour	Outer diameter in mm approx.	Weight kg/km approx.
3804568	UNITRONIC® BUS FF SWA	1 x 2 x AWG 18	Blue, brown	Yellow	12.4	301
3804568A	UNITRONIC® BUS FF SWA	1 x 2 x AWG 18	Blue, orange	Orange	12.4	301

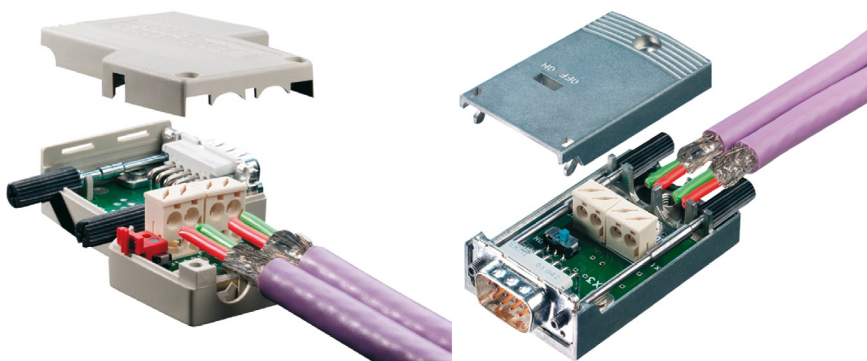


EPIC® Data ED PROFIBUS Connectors



Info

- S- Screw Connection
- CC - Clamp Connection
- PG - Programm Unit Interface
- IDC - IDC Connection
- Switch - external switch



EPIC® Data ED PROFIBUS Connectors

Benefits

- PROFIBUS interface connector

Application range

- The PROFIBUS SUB-D connectors are available with different connection terminals. These include the standard Screw-Connection (S) and the Fast Connect Insulation Displacement Connection (IDC) resp. the Cage Clamp (CC) Connection.

- Most types include an integrated termination switch, that allows for flexible system design and easy system extension. In a network extension, the appropriate active termination connector may easily be switched to a node connector without terminating the system.

Product features

- SUB-D connectors
- Data sheet on request

Approvals (Norm references)



Product Make-up

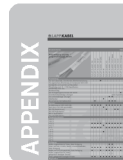
- Sub-D connection / pin assignment in accordance with PROFIBUS
- Switch protected against incorrect actuation
- IDC connectors suitable only for solid wire
- Data rates up to 12 Mbit/s by integrated SMT inductives
- UL E84703 (ERbic)

Part number	Article designation	Colour	Cable outlet	Switchable termination resistance	Cable types	Pieces / PU
Standard with screw connection (S)						
21124064	ERbic® PROFIBUS S Switch 90	grey	90°	yes	solid + flexible	1
21124063	ERbic® PROFIBUS Switch 90 PG	grey	90°	yes	solid + flexible	1
21124060	PROFIBUS S Switch 30	metallised	30°	yes	solid + flexible	1
21124061	PROFIBUS S Switch 30 PG	metallised	30°	yes	solid + flexible	1
21124067	ERbic® PROFIBUS S Node 90 rev	grey	90° reversed	no	solid + flexible	1
21124071	ERbic® PROFIBUS S Termination 90 rev	yellow	90° reversed	no	solid + flexible	1
21124068	ERbic® PROFIBUS S Node 180	grey	180°	no	solid + flexible	1
21124070	ERbic® PROFIBUS S Termination 180	yellow	180°	no	solid + flexible	1
Fast Connect IDC connection (IDC)						
21124050	ERbic® PROFIBUS IDC Switch 90	grey	90°	yes	only solid	1
21124051	ERbic® PROFIBUS IDC Switch 90 PG	grey	90°	yes	only solid	1
21124055	PROFIBUS IDC Switch 30	metallised	30°	yes	only solid	1
21124056	PROFIBUS IDC Switch 30 PG	metallised	30°	yes	only solid	1
21124052	ERbic® PROFIBUS IDC Switch 90 rev	grey	90° reversed	yes	only solid	1
21124053	ERbic® PROFIBUS IDC Switch 180	grey	180°	yes	only solid	1
21124054	PROFIBUS IDC Switch 180 AX	metallised	180° axial	yes	only solid	1
Fast Connect with cage clamp connection (CC)						
21124090	ERbic® PROFIBUS CC Switch 90	grey	90°	yes	solid + flexible	1
21124091	ERbic® PROFIBUS CC Switch 90 PG	grey	90°	yes	solid + flexible	1

ERbic® is a registered trademark of ERNI Elektroapparate GmbH

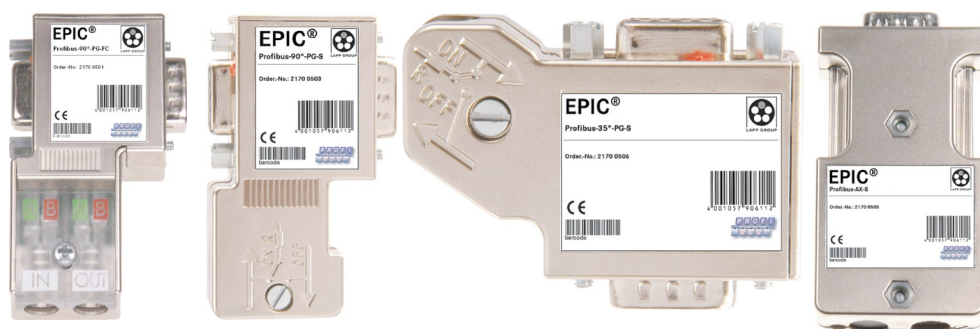
Accessories

- FC Strip stripping tool





EPIC® Data ED PROFIBUS Connectors



EPIC® Data ED PROFIBUS Steckverbinder

■ Benefits

- PROFIBUS interface connector
- All versions are compatible with the new Siemens S7 variants such as S7 200, 300, 400
- Data rates up to 12 Mbit/s by integrated SMT inductives
- Programming interface available for local administration

■ Application range

- The PROFIBUS SUB-D connectors are available with different connection technologies. This includes the standard connectors with screw termination (S) and the Fast Connect connectors (FC) and cage clamp termination (FZ).
- All types include an integrated termination switch, that allows flexible system design and easy system extension

■ Product features

- 12.5 mA internal used power
- Voltage 5V +/- 5% DC
- Operating temperature: 0°C to +60°C

- Storage temperature: -24°C to 80°C
- Air humidity 75% non condensing (25°C)

■ Approvals (Norm references)



■ Product Make-up

- Sub-D connection / pin assignment in accordance with PROFIBUS
- FC connectors are only suitable for solid wire
- Switch operable externally for connecting and disconnecting the termination
- Switch protected against incorrect actuation

Part number	Article designation	Colour	Cable types	Outlet angle	PG	Pieces / PU
21700501	EPIC® PROFIBUS-90°-PG-FC	silber	FC-Cable, solid	90°	yes	1
21700502	EPIC® PROFIBUS-90°-FC	silber	FC-Cable, solid	90°	no	1
21700503	EPIC® PROFIBUS-90°-PG-S	silber	solid+flexible	90°	yes	1
21700504	EPIC® PROFIBUS-90°-S	silber	solid+flexible	90°	no	1
21700505	EPIC® PROFIBUS-AX-S	silber	solid+flexible	180°	no	1
21700506	EPIC® PROFIBUS-35°-PG-S	silber	solid+flexible	35°	yes	1
21700507	EPIC® PROFIBUS-35°-S	silber	solid+flexible	35°	no	1
21700508	EPIC® PROFIBUS-90°-PG-FZ	silber	solid+flexible	90°	yes	1
21700509	EPIC® PROFIBUS-90°-FZ	silber	solid+flexible	90°	no	1

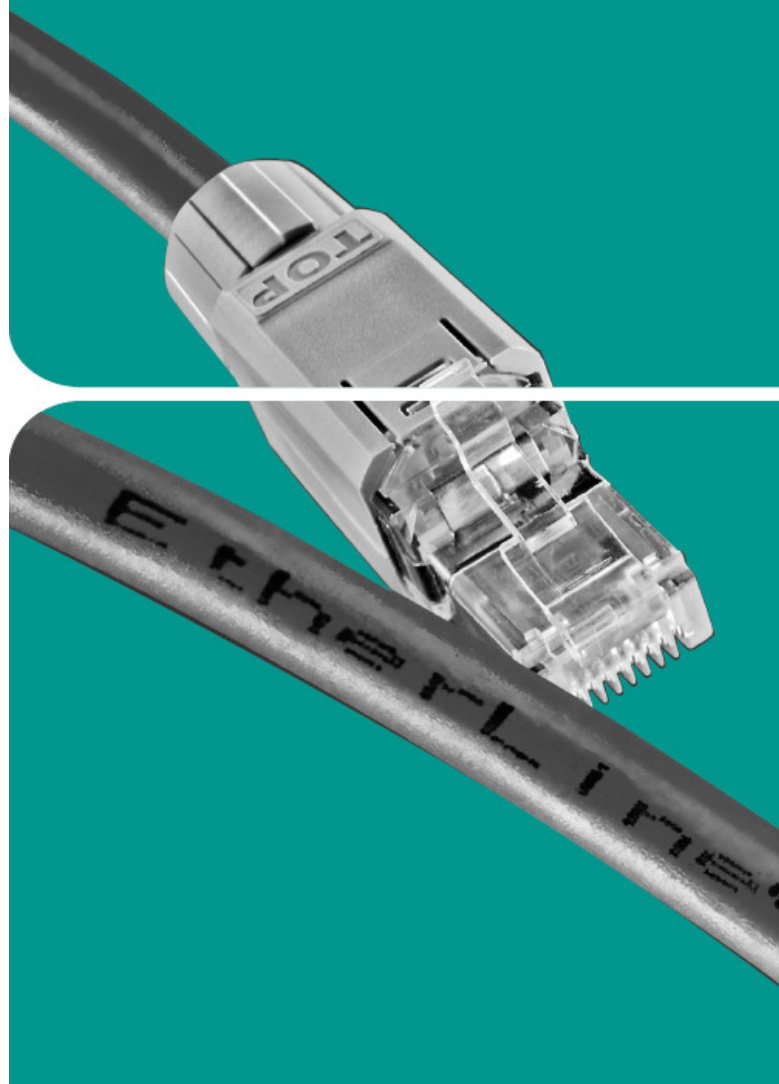
■ Accessories

- FC Strip stripping tool

UNITRONIC® LAN 200 MHz – CAT.5a	70
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Connector RJ45 CAT.6 Hirose TM21	77
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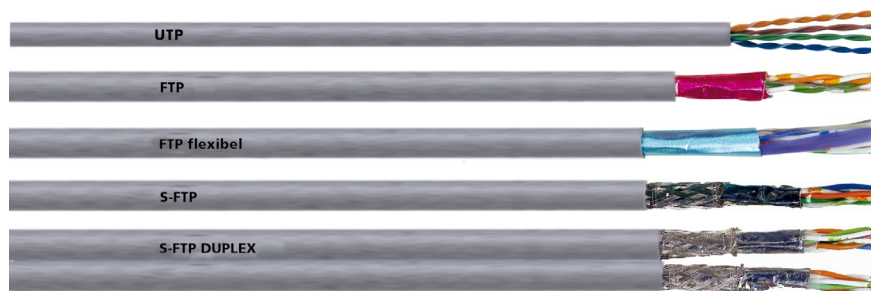
ETHERLINE®

Data communication
systems for
ETHERNET-Technology





UNITRONIC® LAN 200 MHz - CAT.5e



Info

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

Benefits

- LAN cable for "Structured Cabling" - EN 50173

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

- 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)
- The impedance of these cables is 100 Ohm +/-15%
- FTP and S-FTP cables are specified up to 200 MHz
- Cables with auxiliary -H = halogen-free version

Approvals (Norm references)



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

Technical data



Characteristic impedance
100 Ohm +/- 15%

Part number	Article designation	Number of pairs and dimensions	Outer diameter in mm max.	Copper index kg/km	Weight kg/km approx.
PVC-version					
2170125	UTP 200 MHz CAT.5e	4 x 2 x AWG24	5.1	17.0	32.0
2170126	FTP 200 MHz CAT.5e	4 x 2 x AWG24	5.9	18.0	42.0
2170127	FTP 200 MHz CAT.5e flexible (for patchcable)	4 x 2 x AWG26	5.4	13.0	30.0
2170128	S-FTP 200 MHz CAT.5e	4 x 2 x AWG24	6.4	32.0	60.0
2170129	S-FTP 200 MHz CAT.5e flexible (for patchcable)	4 x 2 x AWG26	5.8	22.0	41.0
2170130	S-FTP 200 MHz CAT.5e DUPLEX	2 x (4 x 2 x AWG24)	6.0 x 13.0	64.0	120.0
halogen free version					
2170136	FTP-H 200 MHz CAT.5e	4 x 2 x AWG24	5.9	18.0	43.0
2170137	FTP-H 200 MHz CAT.5e flexible (for patchcable)	4 x 2 x AWG26	5.4	13.0	31.0
2170138	S-FTP-H 200 MHz CAT.5e	4 x 2 x AWG24	6.4	32.0	61.0
2170139	S-FTP-H 200 MHz CAT.5e flexible (for patchcable)	4 x 2 x AWG26	5.8	22.0	42.0
2170140	S-FTP-H 200 MHz CAT.5e DUPLEX	2 x (4 x 2 x AWG24)	6.4 x 13.0	64.0	122.0

Copper price basis: EUR 150 / 100 kg

Our standard length, please visit: www.lappkabel.de/en/cable-standardlengths

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

More detailed data sheet on request. Please specify the required type.



UNITRONIC® LAN STP/S PiMF 500 MHz - CAT.6a



Info

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

Benefits

- LAN cable for "Structured Cabling" - Class E

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

- Cables with auxiliary -H = halogen-free version
- 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)

- The impedance of these cables is 100 Ohm +/-15%

Approvals (Norm references)



- LAN CAT.6a-cable from LAPP KABEL for "Structured cabling systems" meet the requirements in acc. with EIA/TIA-568 and TSB36 as well as ISO/IEC 11801 or EN 50173 (class D).
- Class E in draft standard corresponds to CAT.6a

Technical data

	Characteristic impedance
	100 Ohm +/- 15%

Part number	Article designation	Number of pairs and dimensions	Outer diameter in mm max.	Copper index kg/km	Weight kg/km approx.
PVC-version					
2170143	STP/S PiMF 500 MHz CAT.6a	4 x 2 x AWG23/1	8.4	27.0	53.0
2170144	STP/S PiMF 500 MHz CAT.6a (flexible for patchcable)	4 x 2 x AWG26/7	6.0	21.0	40.0
2170145	STP/S PiMF 500 MHz CAT.6a DUPLEX	2 x (4 x 2 x AWG23/1)	8.4 x 17.4	54.0	106.0
halogen free version					
2170147	STP/S-H PiMF 500 MHz CAT.6a	4 x 2 x AWG23/1	8.4	27.0	53.0
2170148	STP/S-H PiMF 500 MHz CAT.6a (flexible for patchcable)	4 x 2 x AWG26/7	6.5	21.0	40.0
2170149	STP/S-H PiMF 500 MHz CAT.6a DUPLEX	2 x (4 x 2 x AWG23/1)	8.4 x 17.4	54.0	106.0

Copper price basis: EUR 150 / 100 kg

Our standard length, please visit: www.lappkabel.de/en/cable-standardlengths

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

CAT.6a is at present a draft

More detailed data sheet on request. Please specify the required type.



UNITRONIC® LAN STP/S PiMF 600 MHz - CAT.7

UNITRONIC® LAN STP/S 600 MHz

LAPP KABEL STUFGART UNITRONIC® LAN STP/S-H 600 MHz DUPLEX

Benefits

- LAN cable for "Structured Cabling" - Class F

Application range

- LAN CAT.7* cable for high speed networks (e.g. Gigabit-ETHERNET). They exceed the requirements according to EIA/TIA-568 and TSB36 as well as ISO/IEC 11801 or EN 50173 (Class D).

Product features

- 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)

- All STP/STP PiMF cables: characteristic impedance 100 Ohm ± 15 %.
- LAN CAT-7* cables are specified up to 600 MHz

Approvals (Norm references)



- Class F in standard corresponds to CAT.7

Technical data

	Characteristic impedance
	100 Ohm +/- 15%

Product Make-up

- ShieldedTwistedPair/Screened PIMF
- 4 individually screened pairs (aluminium foil) with overall screening (copper braid)
- Solid conductor

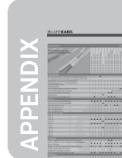
Part number	Article designation	Number of pairs and dimensions	Outer diameter in mm max.	Copper index kg/km	Weight kg/km approx.
halogen free version (H)					
2170614	STP/S-H PiMF 600 MHz CAT.7*	4 x 2 x AWG23	7.9	27.0	78.0
2170634	STP/S-H PiMF 600 MHz CAT.7* DUPLEX	2 x (4 x 2 x AWG23)	7.9 x 16.8	54.0	156.0

Copper price basis: EUR 150 / 100 kg

Our standard length, please visit: www.lappkabel.de/en/cable-standardlengths

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

More detailed data sheet on request. Please specify the required type.





ETHERLINE® TORSION UL (AWM) CAT. 5

LAPP KABEL STUTTGART ETHERLINE® TORSION UL (AWM) CAT.5



Info

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

Benefits

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

- Outer sheath high abrasion resistance

Approvals (Norm references)



- UL AWM (Style 21161)

Application range

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

Product Make-up

- Stranded conductor, tinned
- AWG22 (19-wire)
- PE core insulation
- Star quad
- PUR outer sheath halogen free

Product features

- Flame-retardant acc. to IEC 60332-1-2

Technical data

	Peak working voltage Max. 100 V (not for power applications)
	Minimum bending radius Installation: 5 x cable diameter
	Test voltage 700 V
	Range of temperature -40°F to +176°F
	Characteristic impedance At 1 - 100 MHz: 100 +/- 15 Ohm

Part number	Article designation	Number of pairs and AWG size/number of wires per conductor	Outer diameter in mm max.	Copper index kg/km	Weight kg/km approx.
2170888	ETHERLINE® TORSION CAT.5	2 x 2 x AWG22/19	6.5	31.3	52.0

Copper price basis: EUR 150 / 100 kg

Our standard length, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

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

Accessories

- SMARTSTRIP stripping tool



ETHERLINE® 4-pairs solidwire CAT.5e

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

ETHERLINE® 4-pairs flexible/high flexible CAT.5e

LAPP KABEL STUTTGART ETHERLINE® P Flex CAT.5e

Benefits

- With regard to transmission rates, the "ETHERNET world" is cut into:
- ETHERNET = 10 Mbit/s
- FAST ETHERNET = 100 Mbit/s
- GIGABIT ETHERNET = 1000 Mbit/s (1 Gbit/s)

Application range

ETHERLINE® 4-pairs solidwire CAT.5e

- Stationary application
- Connection with the "Fieldbus World" via gateway or straight through downwards to the Sensor-Actuator level

ETHERLINE® 4-pairs flexible/high flexible CAT.5e

- Flexible and highly flexible applications
- Connection with the "Fieldbus World" via gateway or straight through downwards to the Sensor-Actuator level

Technical data

Z_∞ Characteristic impedance
100 Ohm at 1 - 100 MHz

Approvals (Norm references)



Product Make-up

- Technical data: see detailed Data Sheet (on request)

Part number	Article designation	Number of pairs and dimensions	Outer diameter in mm max.	Copper index kg/km	Weight kg/km approx.
Conductor AWG24 + AWG26 (outer sheath colour marine blue RAL 5021) for fixed installation (solid conductor)					
2170296	ETHERLINE® H CAT.5e	4 x 2 x AWG24/1	6.3	32.0	54.0
2170297	ETHERLINE® P CAT.5e	4 x 2 x AWG24/1	6.3	32.0	62.0
2170298	ETHERLINE® H-H CAT.5e	4 x 2 x AWG24/1	6.0 / 7.5	32.0	80.0
for flexible application (7-wire stranded conductor)					
2170299	ETHERLINE® H Flex CAT.5e	4 x 2 x AWG26/7	6.1	25.0	48.0
2170300	ETHERLINE® P Flex CAT.5e	4 x 2 x AWG26/7	6.1	25.0	54.0
for high flexible applications/19 wires only for patchcords (max. 60 m)					
2170489	ETHERLINE® FD P CAT.5e	4 x 2 x AWG26/19	6.3	27.0	54.0

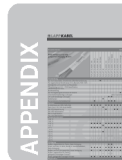
Copper price basis: EUR 150 / 100 kg

Our standard length, please visit: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil ≤ 30 kg and ≤ 250 m, otherwise drum

Please specify the desired packaging size (e.g. 1 x 500 m drum or 5 x 100 m coils)

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





Patchcable RJ45 CAT.5e



Product features

FTP Patchcable CAT.5e

- Foil screening, 150 MHz, grey, halogen free, with Hirose TM 11 connector, also available in different colours, allocation in acc. to TIA/EIA 568B

S-FTP Patchcable CAT.5e

- Foil and braid screening, 150 MHz, grey, halogen free, with Hirose TM 11 connector, also available in different colours, allocation in acc. to TIA/EIA 568B

Approvals (Norm references)



Part number	Article designation	Colour	Length in m	PU
FTP Patchcable CAT.5e				
CE6547	Patchcable RJ45 CAT.5e FTP 0.5m	grey	0.5	5 pieces
CE6548	Patchcable RJ45 CAT.5e FTP 1.0m	grey	1.0	5 pieces
CE6549	Patchcable RJ45 CAT.5e FTP 1.5m	grey	1.5	5 pieces
CE6550	Patchcable RJ45 CAT.5e FTP 2.0m	grey	2.0	5 pieces
CE6551	Patchcable RJ45 CAT.5e FTP 3.0m	grey	3.0	5 pieces
CE6552	Patchcable RJ45 CAT.5e FTP 5.0m	grey	5.0	5 pieces
CE6553	Patchcable RJ45 CAT.5e FTP 7.5m	grey	7.5	5 pieces
CE6554	Patchcable RJ45 CAT.5e FTP 10.0m	grey	10.0	5 pieces
CE6555	Patchcable RJ45 CAT.5e FTP 15.0m	grey	15.0	1 piece
CE6556	Patchcable RJ45 CAT.5e FTP 20.0m	grey	20.0	1 piece
S-FTP Patchcable CAT.5e				
CE6647	Patchcable RJ45 CAT.5e S-FTP 0.5m	grey	0.5	5 pieces
CE6648	Patchcable RJ45 CAT.5e S-FTP 1.0m	grey	1.0	5 pieces
CE6649	Patchcable RJ45 CAT.5e S-FTP 1.5m	grey	1.5	5 pieces
CE6650	Patchcable RJ45 CAT.5e S-FTP 2.0m	grey	2.0	5 pieces
CE6651	Patchcable RJ45 CAT.5e S-FTP 3.0m	grey	3.0	5 pieces
CE6652	Patchcable RJ45 CAT.5e S-FTP 5.0m	grey	5.0	5 pieces
CE6653	Patchcable RJ45 CAT.5e S-FTP 7.5m	grey	7.5	5 pieces
CE6654	Patchcable RJ45 CAT.5e S-FTP 10.0m	grey	10.0	5 pieces
CE6655	Patchcable RJ45 CAT.5e S-FTP 15.0m	grey	15.0	1 piece
CE6656	Patchcable RJ45 CAT.5e S-FTP 20.0m	grey	20.0	1 piece

Also further different-coloured versions available.



LANmark-7 1xRJ45 2xRJ11 Splittercord GG45

Product features

- LANmark 7 Splitcords allow several services to be run simultaneously using a GG45 permanent link and provide four individually screened pairs. The GG45 socket routes this pair screening internally via a metal cross - this allows the pairs to be individually actuated without the different signals interfering with one another.

- The GG45 Splitcord has a GG45 connector on the wall socket side and 1xRJ45 CAT.5 and 2xRJ11 for voice on the device side.
- 1x Ethernet RJ45 CAT.5 - 2 x Voice RJ 11
- Characteristic impedance: 100 Ohm
- Flame-retardant acc. to IEC 60332-1-2

Approvals (Norm references)



Part number	Article designation	Colour	Length in m	PU
LANmark-7 1xRJ45 2xRJ11 Splittercord GG45				
60611	LANmark-7 1xRJ45 2xRJ11 Splittercord GG45 1.0m	grey	1.0	1 piece
60612	LANmark-7 1xRJ45 2xRJ11 Splittercord GG45 2.0m	grey	2.0	1 piece
60613	LANmark-7 1xRJ45 2xRJ11 Splittercord GG45 3.0m	grey	3.0	1 piece
60614	LANmark-7 1xRJ45 2xRJ11 Splittercord GG45 5.0m	grey	5.0	1 piece

LANmark-7 2xRJ45 Splittercord GG45

Product features

- LANmark 7 Splitcords allow several services to be run simultaneously using a GG45 permanent link and provide four individually screened pairs. The GG45 socket routes this pair screening internally via a metal cross - this allows the pairs to be individually actuated without the different signals interfering with one another.

- The GG45 Splitcord has a GG45 connector on the wall socket side and 2 x RJ45 CAT.5 on the device side.
- 2x Ethernet RJ45 CAT.5
- Characteristic impedance: 100 Ohm
- Flame-retardant acc. to IEC 60332-1-2

Approvals (Norm references)



Part number	Article designation	Colour	Length in m	PU
LANmark-7 2xRJ45 Splittercord GG45				
60601	LANmark-7 2xRJ45 Splittercord GG45 1.0m	grey	1.0	1 piece
60602	LANmark-7 2xRJ45 Splittercord GG45 2.0m	grey	2.0	1 piece
60603	LANmark-7 2xRJ45 Splittercord GG45 3.0m	grey	3.0	1 piece
60604	LANmark-7 2xRJ45 Splittercord GG45 5.0m	grey	5.0	1 piece

S-FTP Patchcable Crossover RJ45 CAT.5e



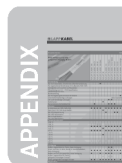
Product features

- For interconnecting two computers without the use of a central active component (hub, switch...).
- Foil and braid screening, 150 MHz
- Halogen-free
- Hirose TM 11 connector
- Sheath and anti-kink sleeve colour: red.

Approvals (Norm references)



Part number	Article designation	Colour	Length in m	PU
Crossover Patchcable				
CE6660	Crossover Patchcable RJ45 CAT.5e S-FTP 2.0m	red	2.0	5 pieces
CE6661	Crossover Patchcable RJ45 CAT.5e S-FTP 3.0m	red	3.0	5 pieces
CE6662	Crossover Patchcable RJ45 CAT.5e S-FTP 5.0m	red	5.0	5 pieces
CE6664	Crossover Patchcable RJ45 CAT.5e S-FTP 10.0m	red	10.0	5 pieces





Patchcable RJ45 CAT.6 S-STP



Product features

- PiMF 500 MHz, with Hirose TM21 connector
- Halogen-free
- Configuration accordance to TIA/EIA 568B
- Colour: grey (also available in other colours)

Approvals (Norm references)



Part number	Article designation	Colour	Length in m	PU
S-STP Patchcable CAT.6				
CE6847	Patchcable RJ45 CAT.6 S-STP 0.5m	grey	0.5	5 pieces
CE6848	Patchcable RJ45 CAT.6 S-STP 1.0m	grey	1.0	5 pieces
CE6849	Patchcable RJ45 CAT.6 S-STP 1.5m	grey	1.5	5 pieces
CE6850	Patchcable RJ45 CAT.6 S-STP 2.0m	grey	2.0	5 pieces
CE6851	Patchcable RJ45 CAT.6 S-STP 3.0m	grey	3.0	5 pieces
CE6852	Patchcable RJ45 CAT.6 S-STP 5.0m	grey	5.0	5 pieces
CE6853	Patchcable RJ45 CAT.6 S-STP 7.5m	grey	7.5	5 pieces
CE6854	Patchcable RJ45 CAT.6 S-STP 10.0m	grey	10.0	5 pieces
CE6855	Patchcable RJ45 CAT.6 S-STP 15.0m	grey	15.0	1 piece
CE6856	Patchcable RJ45 CAT.6 S-STP 20.0m	grey	20.0	1 piece

Also further different-coloured versions available.

LANmark-6 RJ45 Patchcord



Product features

- The Patchcord fully corresponding to category 6 maximises the channel performance and exceeds the requirements of ISO/IEC 11801:2002 as part of a LANmark-6 wiring of Class E. This offers an improved data transmission rates and enables the inclusion of consolidation points for maximum system flexibility.
- Halogen free, flame-retardant sheath with less release of smoke gases than standard
- Screened version

Approvals (Norm references)



Part number	Article designation	Colour	Length in m	PU
LANmark-6 RJ45 Patchcord				
CE6147	LANmark-6 RJ45 Patchcord 0.5m	orange	0.5	1 piece
CE6148	LANmark-6 RJ45 Patchcord 1.0m	orange	1.0	1 piece
CE6149	LANmark-6 RJ45 Patchcord 1.5m	orange	1.5	1 piece
CE6150	LANmark-6 RJ45 Patchcord 2.0m	orange	2.0	1 piece
CE6151	LANmark-6 RJ45 Patchcord 3.0m	orange	3.0	1 piece
CE6152	LANmark-6 RJ45 Patchcord 5.0m	orange	5.0	1 piece
CE6154	LANmark-6 RJ45 Patchcord 10.0m	orange	10.0	1 piece
CE6155	LANmark-6 RJ45 Patchcord 15.0m	orange	15.0	1 piece

LANmark-7 GG45 Patchcord



Product features

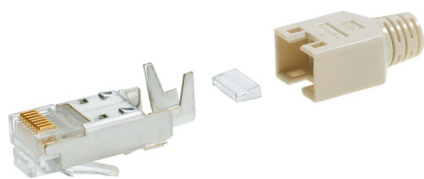
- The LANmark-7 Patchcable with two four-paired, non-switched CAT.7 connectors makes it possible to operate one GG45 Permanent Link in 600 MHz mode.
- Screened version
- 2x GG45 4-pair, not downward compatible plug
- Halogen free, low smoke zero halogen (LSZH)

Approvals (Norm references)



Part number	Article designation	Colour	Length in m	PU
LANmark-7 RJ45 Patchcord GG45				
60641	LANmark-7 GG45 Patchcord 1.0m	orange	1.0	1 piece
60642	LANmark-7 GG45 Patchcord 2.0m	orange	2.0	1 piece
60643	LANmark-7 GG45 Patchcord 3.0m	orange	3.0	1 piece
60644	LANmark-7 GG45 Patchcord 5.0m	orange	5.0	1 piece
60645	LANmark-7 GG45 Patchcord 10.0m	orange	10.0	1 piece

Connector RJ45 CAT.5 Hirose TM11



Product features

- Including bend protection and guide plate
- Bend protection: grey

Approvals (Norm references)



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

Also further different-coloured versions available.

Accessories

- Crimping tool RJ45 Hirose see page 78

Connector RJ45 CAT.5 Stewart SS37



Product features

- Including bend protection and guide plate
- Bend protection: grey

Approvals (Norm references)



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

Also further different-coloured versions available.

Accessories

- Crimping tool RJ45 Stewart see page 78

Field-Terminable Connector RJ45 CAT.5e FM45



Product features

- FM45 is a tool-free switchable, field-terminable RJ45 Connector with IDC contacting and CAT.5e performance. The eight pin connection can be re-switched, tension-resistant, and vibration-resistant. The connecting block can accommodate both screened as well as unscreened cable up to 8 mm diameter.
- Suitable for AWG23 - 26, AWG22 possible with restrictions

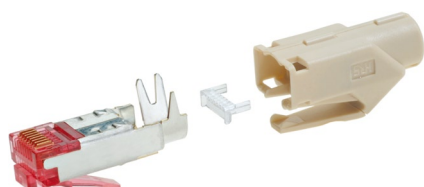
- IDC/piercing terminal in acc. with 60352-4
- Suitable for solid and flexible conductors
- Suitable for use in industrial applications
- Protection type: IP20

Approvals (Norm references)



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

Connector RJ45 CAT.6 Hirose TM21



Product features

- Channel Class E up to 250 MHz
- Fully shielded
- Conductor: Ø 0.5 mm solid wire, AWG 24 & 26 stranded cable, guide plate accept 1.1 mm diameter wire, Seath outer diameter: 6.6 mm

- Easy operation
- Including bend protection and guide plate
- Bend protection: grey

Approvals (Norm references)

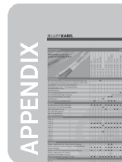


Part number	Article designation	PU
CE6324	Connector RJ45 CAT.6 Hirose TM21	50 pieces

Also further different-coloured versions available.

Accessories

- Crimping tool RJ45 Hirose see page 78



Crimping tool RJ45 Hirose

Product features

- Crimping tool for connector RJ45 CAT.5 Hirose TM11
- Crimping tool for connector RJ45 CAT.6 Hirose TM21

Approvals (Norm references)



Part number	Article designation	PU
CE5091	Crimping tool RJ45 CAT.5 Hirose TM11 8-pole	1 piece
CE5090	Crimping tool RJ45 CAT.6 Hirose TM21 8-pole	1 piece

Accessories

- Connector RJ45 CAT.5 Hirose TM11 see page 77
- Connector RJ45 CAT.6 Hirose TM21 see page 77

Crimping tool RJ45 Stewart

Product features

- Crimping tool for connector RJ45 CAT.5 Stewart SS37
- Crimping tool for RJ plug 4-, 6-, 6-DEC- and 8-pole

Approvals (Norm references)



Part number	Article designation	PU
CE5093	Crimping tool RJ45 Stewart SS37 8-pole	1 piece
CE5092	Crimping tool RJ 4-, 6-, 6-DEC- and 8-pole	1 piece

Accessories

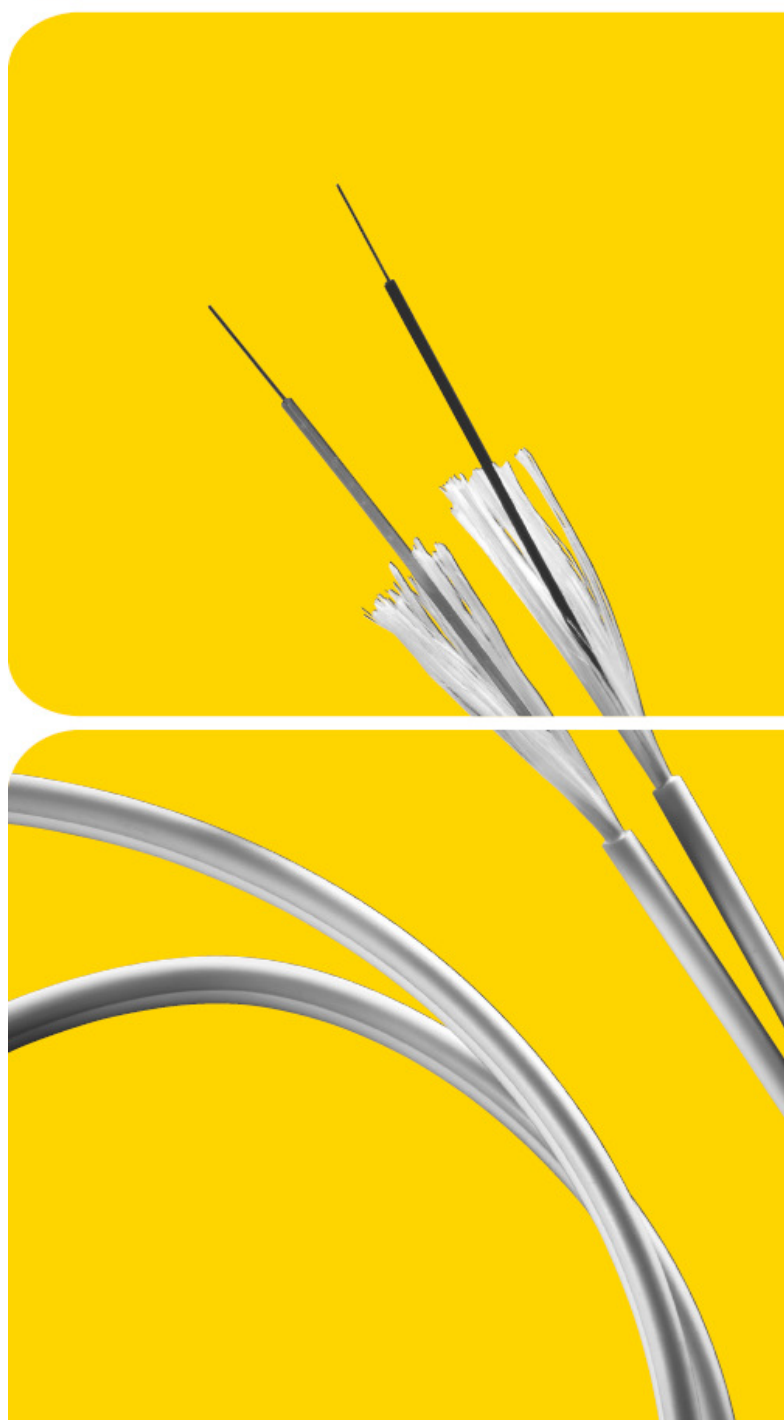
- Connector RJ45 CAT.5 Stewart SS37 see page 77



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HITRONIC®

Optical
transmission systems



The optical transmission of messages in FOC operates according to the principle of „total internal reflection.“ The reflection is created by the fact that an optically thinner cladding is placed around the light conducting core on whose interface the light totally reflects and is thereby conducted through the FOC.

Although the principle of optical message transmission has been known for a long time, not until recent years was one able to develop, produce and commercially use low loss FOCs. In a time when the need for rapid and secure communications networks is continually growing we can neither imagine a world without the transmission medium FOC nor can it be replaced.

Advantages of fibre optics over copper-based transmission

- Protection against electromagnetic interferences, i.e. cable routing can be carried out without consideration of possibly occurring sources of electromagnetic interference
- rapid made-to-measure preparation of plastic FOC; simple on-site plug-in connector installation
- Potential separation, that is potential delays are not possible
- No crosstalk and high security against listening in
- Small dimensions and minimal weight (up to 2.2 mm outside diameter and/or 4g/m for plastic FOC in Simplex model)

Among fibre optic cables there is a difference based on the material used between plastic fibres (POF), fibres made of silica glass with optical plastic cladding (PCF) and fibres made of pure silica glass (glass fibre or GOF).

Mainly for use in the industrial area, Lapp Kabel offers FOCs made of glass or plastic and/or hybrid cables.

A portion of these cables is constructively laid for heavy deployment in the energy supply chain. The overall concept of your data transmission line determines whether glass or plastic fibre optic cables are used. We offer you suitable plug-in connectors, tools and pre-fabricated FOC patch cables that match the cables being used.

Typical deployment areas for POF and PCF FOCs:

- Bus systems in automation
- Machine construction and plant engineering
- Building technology

Because of their special characteristics POF-FOC are used

- high demands at data security
- for conditions where space is limited

Typical application areas for GOF FOCs:

Everywhere where large amounts of data must be transmitted at high speed over distances of approx. 60 m to several kilometres. For example in

- Local Area Networks (LAN)
- Metropolitan Area Networks (MAN)
- Wide Area Networks (WAN)

Treatment of HITRONIC® POF cables at Lapp Kabel

We use fast-reacting FOC winders, therefore the memory attraction (adherence) of our fibre optic cable, with only the smallest of bond surfaces, can be reduced to 1.7 N. During processing we take great care to ensure that the bending stresses, which can damage FOC, are kept to an absolute minimum. Through this careful handling the optical characteristics of the cables are preserved and the attenuation properties of the fibre remain unaffected.

Properties of Glass Fibres (PCF+GOF) and Polymer Optical Fibres (POF)

Fibre	Fibre type	Core Diameter µm	Diameter core+cladding in µm	Diameter Fibre in µm	Attenuation coefficient in dB/km	Bandwidth for 1 km in MHz	Numerical aperture
POF 980/1000	Multimode Step Index	980	1000	2200	≤ 190 at 650 nm	10 at 650 nm (100 m)	0.47
PCF 200/230	Multimode Step Index	200	230	2900	≤ 10 at 660 nm	17 at 650 nm ≥ 20 at 850 nm	0.37
GOF G 50/125 – OM2	Multimode Gradient	50	125	250	≤ 2.7 at 850 nm ≤ 0.9 at 1300 nm	≥ 500 at 850 nm ≥ 800 at 1300 nm	0.20
GOF G 50/125 – OM3	Multimode Gradient	50	125	250	≤ 2.7 at 850 nm ≤ 0.9 at 1300 nm	≥ 1500 at 850 nm ≥ 500 at 1300 nm ≥ 2000 at 850 nm (Laser)	0.20
GOF G 62.5 / 125	Multimode Gradient Index	62.5	125	250	≤ 3.5 at 850 nm ≤ 1.0 at 1300 nm	≥ 200 at 850 nm ≥ 500 at 1300 nm	0.27
GOF E 9/125	Singlemode Step Index	9	125	250	≤ 0.36 at 1310 nm ≤ 0.25 at 1550 nm		0.1



HITRONIC® HQN Outdoor Cable


Info

- Outdoor cable with central buffer tube



Benefits

- F.O. Glass Fibre Optical cable for outdoor with nonmetallic Glass yarn strength members
- Easy to install due to compact structure, high flexibility, robust sheath and small bending radius
- Methods of Deployment: empty plastic pipes, ducts and trays

Application range

- For outdoor use
- Campus backbone
- WAN applications
- Industrial environment

Product features

- Central loose tube with up to 24 fibres
- Robust and halogen-free PE outer sheath
- Longitudinal watertight
- Protection against rodent
- High tensile strength

Approvals (Norm references)



Product Make-up

- Fibres with primary coating
- Gel-filled loose tube
- Glass yarns with water-blocking tape
- PE outer sheath
- Colour: black (similar to RAL 9005)

Technical data

Standard designation

A-DQ(ZN)B2Y


Range of temperature

Operation: -20 °C to +60 °C

Laying: 0 °C to +50 °C


Permissible bending radius

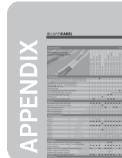
fixed installation: 20 x cable diameter


Permissible tensile force

1.000 N to 2.500 N

Part number	Article designation	Fibre type	Number of fibres	Tension load capacity in N	Outer diameter in mm max.
HITRONIC® HQN 1000 Multimode G 50					
2760041	HITRONIC® HQN 1000 4G 50/125	50/125	4	1,000	6.5
2760081	HITRONIC® HQN 1000 8G 50/125	50/125	8	1,000	6.5
2760121	HITRONIC® HQN 1000 12G 50/125	50/125	12	1,000	6.5
2760241	HITRONIC® HQN 1000 24G 50/125	50/125	24	1,000	6.8
HITRONIC® HQN 1000 Multimode G 62.5					
2761041	HITRONIC® HQN 1000 4G 62.5/125	62.5/125	4	1,000	6.5
2761081	HITRONIC® HQN 1000 8G 62.5/125	62.5/125	8	1,000	6.5
2761121	HITRONIC® HQN 1000 12G 62.5/125	62.5/125	12	1,000	6.5
2761241	HITRONIC® HQN 1000 24G 62.5/125	62.5/125	24	1,000	6.8
HITRONIC® HQN 1000 Singlemode E 9					
2762041	HITRONIC® HQN 1000 4E 9/125	9/125	4	1,000	6.5
2762081	HITRONIC® HQN 1000 8E 9/125	9/125	8	1,000	6.5
2762121	HITRONIC® HQN 1000 12E 9/125	9/125	12	1,000	6.5
2762241	HITRONIC® HQN 1000 24E 9/125	9/125	24	1,000	6.8
HITRONIC® HQN 1500 Multimode G 50					
276004	HITRONIC® HQN 1500 4G 50/125	50/125	4	1,500	7.5
276008	HITRONIC® HQN 1500 8G 50/125	50/125	8	1,500	7.5
276012	HITRONIC® HQN 1500 12G 50/125	50/125	12	1,500	7.5
276024	HITRONIC® HQN 1500 24G 50/125	50/125	24	1,500	7.8
HITRONIC® HQN 1500 Multimode G 62.5					
276104	HITRONIC® HQN 1500 4G 62.5/125	62.5/125	4	1,500	7.5
276108	HITRONIC® HQN 1500 8G 62.5/125	62.5/125	8	1,500	7.5
276112	HITRONIC® HQN 1500 12G 62.5/125	62.5/125	12	1,500	7.5
276124	HITRONIC® HQN 1500 24G 62.5/125	62.5/125	24	1,500	7.8
HITRONIC® HQN 1500 Singlemode E 9					
276208	HITRONIC® HQN 1500 8E 9/125	9/125	8	1,500	7.5
276212	HITRONIC® HQN 1500 12E 9/125	9/125	12	1,500	7.5
276224	HITRONIC® HQN 1500 24E 9/125	9/125	24	1,500	7.8
HITRONIC® HQN 2500 Multimode G 50					
276304	HITRONIC® HQN 2500 4G 50/125	50/125	4	2,500	9.6
276308	HITRONIC® HQN 2500 8G 50/125	50/125	8	2,500	9.6
276312	HITRONIC® HQN 2500 12G 50/125	50/125	12	2,500	9.6
276324	HITRONIC® HQN 2500 24G 50/125	50/125	24	2,500	9.8
HITRONIC® HQN 2500 Multimode G 62.5					
276404	HITRONIC® HQN 2500 4G 62.5/125	62.5/125	4	2,500	9.6
276408	HITRONIC® HQN 2500 8 G 62.5/125	62.5/125	8	2,500	9.6
276412	HITRONIC® HQN 2500 12G 62.5/125	62.5/125	12	2,500	9.6
HITRONIC® HQN 2500 Singlemode E 9					
276508	HITRONIC® HQN 2500 8E 9/125	9/125	8	2,500	9.6
276512	HITRONIC® HQN 2500 12E 9/125	9/125	12	2,500	9.6
276524	HITRONIC® HQN 2500 24E 9/125	9/125	24	2,500	9.9

The cables can also be supplied as cut-to-measure LWL trunks. Special multimode fibres (50/125 OM3) for 10 Gigabit Ethernet operation on request.





HITRONIC® HIH Indoor Cable



Info

- With central buffer tube and rodent protection

Benefits

- F.O. Glass Fibre Optical cable for indoor with nonmetallic Glass yarn strength members
- Easy to install due to compact structure, high flexibility, robust sheath and small bending radius
- Methods of Deployment: laying in trunking, ducts and trays, building riser, empty plastic pipes, raised floors and plenums

Application range

- For indoor use
- Tertiary cabling
- Premise cabling – backbone

Product features

- Central loose tube with up to 24 fibres
- Halogen-free and flame retardant FRNC outer sheath
- Longitudinal watertight
- Low protection against rodent
- High tensile strength

Approvals (Norm references)



Product Make-up

- Fibres with primary coating
- Gel-filled loose tube
- FRNC outer sheath
- Colour: orange

Technical data

Standard designation
I-D(ZN)H



Range of temperature

Operation: -20 °C to +60 °C

Laying: 0 °C to +50 °C



Permissible bending radius

fixed installation: 20 x cable diameter



Permissible tensile force

1.000 N

Part number	Article designation	Fibre type	Number of fibres	Tension load capacity in N	Outer diameter in mm max.
HITRONIC® HIH 1000 Multimode G 50					
270004	HITRONIC® HIH 1000 4G 50/125	50/125	4	1,000	5.9
270008	HITRONIC® HIH 1000 8G 50/125	50/125	8	1,000	5.9
270012	HITRONIC® HIH 1000 12G 50/125	50/125	12	1,000	5.9
270024	HITRONIC® HIH 1000 24G 50/125	50/125	24	1,000	6.3
HITRONIC® HIH 1000 Multimode G 62.5					
270104	HITRONIC® HIH 1000 4G 62.5/125	62.5/125	4	1,000	5.9
270108	HITRONIC® HIH 1000 8G 62.5/125	62.5/125	8	1,000	5.9
270112	HITRONIC® HIH 1000 12G 62.5/125	62.5/125	12	1,000	5.9
270124	HITRONIC® HIH 1000 24G 62.5/125	62.5/125	24	1,000	6.3
HITRONIC® HIH 1000 Singlemode E 9					
270204	HITRONIC® HIH 1000 4E 9/125	9/125	4	1,000	5.9
270208	HITRONIC® HIH 1000 8E 9/125	9/125	8	1,000	5.9
270212	HITRONIC® HIH 1000 12E 9/125	9/125	12	1,000	5.9
270224	HITRONIC® HIH 1000 24E 9/125	9/125	24	1,000	6.3



HITRONIC® HUN Universal Cable



Info

- FO Universal cable



Benefits

- F.O. Glass Fibre Optical cable for outdoor and indoor with nonmetallic Glass yarn strength members
- Easy to install due to compact structure, high flexibility, robust sheath and small bending radius
- Methods of Deployment: laying in trunking, ducts and trays, building riser, plastic pipes, raised floors and plenums

Application range

- For indoor and outdoor use
- Tertiary cabling
- Premise cabling - backbone
- Industrial environment

Product features

- Central loose tube with up to 24 fibres
- Halogen-free and flame retardant FRNC outer sheath
- Longitudinal watertight
- Protection against rodent
- High tensile strength

Approvals (Norm references)



Product Make-up

- Fibres with primary coating
- Gel-filled loose tube
- Glass yarns with water-blocking tape
- FRNC outer sheath
- Colour: green (similar to RAL 6018)

Technical data

Standard designation

A/I-DQ(ZN)BH

Range of temperature

Operation: -20 °C to +60 °C

Laying: 0 °C to +50 °C

Permissible bending radius

fixed installation: 20 x cable diameter

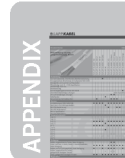
Permissible tensile force

1,000 N to 1,500 N



Part number	Article designation	Fibre type	Number of fibres	Tension load capacity in N	Outer diameter in mm max.
HITRONIC® HUN1000 Multimode G 50					
2740041	HITRONIC® HUN1000 4G 50/125	50/125	4	1,000	6.5
2740081	HITRONIC® HUN1000 8G 50/125	50/125	8	1,000	6.5
2740121	HITRONIC® HUN1000 12G 50/125	50/125	12	1,000	6.5
2740241	HITRONIC® HUN1000 24G 50/125	50/125	24	1,000	6.8
HITRONIC® HUN1000 Multimode G 62.5					
2741041	HITRONIC® HUN1000 4G 62.5/125	62.5/125	4	1,000	6.5
2741081	HITRONIC® HUN1000 8G 62.5/125	62.5/125	8	1,000	6.5
2741121	HITRONIC® HUN1000 12G 62.5/125	62.5/125	12	1,000	6.5
HITRONIC® HUN1000 Singlemode E 9					
2742041	HITRONIC® HUN1000 4E 9/125	9/125	4	1,000	6.5
2742081	HITRONIC® HUN1000 8E 9/125	9/125	8	1,000	6.5
2742121	HITRONIC® HUN1000 12E 9/125	9/125	12	1,000	6.5
2742241	HITRONIC® HUN1000 24E 9/125	9/125	24	1,000	6.8
HITRONIC® HUN1500 Multimode G 50					
274004	HITRONIC® HUN1500 4G 50/125	50/125	4	1,500	7.5
274008	HITRONIC® HUN1500 8G 50/125	50/125	8	1,500	7.5
274012	HITRONIC® HUN1500 12G 50/125	50/125	12	1,500	7.5
274024	HITRONIC® HUN1500 24G 50/125	50/125	24	1,500	7.8
HITRONIC® HUN1500 Multimode G 62.5					
274104	HITRONIC® HUN1500 4G 62.5/125	62.5/125	4	1,500	7.5
274108	HITRONIC® HUN1500 8G 62.5/125	62.5/125	8	1,500	7.5
274112	HITRONIC® HUN1500 12G 62.5/125	62.5/125	12	1,500	7.5
274124	HITRONIC® HUN1500 24G 62.5/125	62.5/125	24	1,500	7.8
HITRONIC® HUN1500 Singlemode E 9					
274204	HITRONIC® HUN1500 4E 9/125	9/125	4	1,500	7.5
274208	HITRONIC® HUN1500 8E 9/125	9/125	8	1,500	7.5
274212	HITRONIC® HUN1500 12E 9/125	9/125	12	1,500	7.5
274224	HITRONIC® HUN1500 24E 9/125	9/125	24	1,500	7.8

The cables can also be supplied as cut-to-measure LWL trunks. Special multimode fibres (50/125 OM3) for 10 Gigabit Ethernet operation on request.





HITRONIC® HRH Breakout Cable



Info

- To be used for direct connector assembly

Benefits

- F.O. Glass Fibre Optical Breakout Cable for indoor with up to 24 simplex units with central strength member
- Very easy to install due to compact structure, high flexibility, small bending radius and suitable for field assembly
- Methods of Deployment: laying in trunking, ducts and trays, building riser, empty plastic pipes, raised floors and plenums for short distances
- Suitable for field assembly

Application range

- Breakout cable
- Universal cable for cabling of buildings
- Connection cable
- Tertiary cabling
- Premise cabling – backbone

Product features

- Installation cable with up to 24 simplex units with central strength member
- Halogen-free and flame retardant FRNC outer and inner sheath
- Mechanical robust
- Suitable for field assembly
- High flexibility

Approvals (Norm references)



Product Make-up

- FRNC 2,1 mm Simplex units
- GFK central strength member
- FRNC outer sheath
- Colour: orange (similar to RAL 2003)

Technical data

Standard designation
AT-V(ZN)HH



Range of temperature

Operation: -20°C to +50°C

Laying: 0°C to +50°C



Permissible bending radius

fixed installation: 20 x cable diameter



Permissible tensile force

300 N (from 4 fibres 700 N)

Part number	Article designation	Fibre type	Number of fibres	Tension load capacity in N	Outer diameter in mm max.
HITRONIC® HRH Multimode G 50					
21806879	HITRONIC® HRH300 2G 50/125	50/125	2	300	7.2
21807090	HITRONIC® HRH700 4G 50/125	50/125	4	700	7.2
21807093	HITRONIC® HRH700 8G 50/125	50/125	8	700	10.2
21807094	HITRONIC® HRH700 12G 50/125	50/125	12	700	13.2
HITRONIC® HRH Multimode G 62.5					
21806878	HITRONIC® HRH300 2G 62.5/125	62,5/125	2	300	7.2
21807096	HITRONIC® HRH700 4G 62.5/125	62,5/125	4	700	7.2
21807098	HITRONIC® HRH700 8G 62.5/125	62,5/125	8	700	10.2

The cables can also be supplied as cut-to-measure LWL trunks.



HITRONIC® HDH Mini-Breakout Cable



Info

- To be used for direct connector assembly



Benefits

- F.O. Glass Fibre Optical Mini-Breakout Cable for indoor with up to 12 fibres
- Very easy to install due to small dimensions, high flexibility, small bending radius and suitable for field assembly
- Methods of Deployment: laying in trunking, ducts and trays, building riser, empty plastic pipes, raised floors and plenums for short distances
- Suitable for field assembly

Application range

- Universal cable for cabling of buildings (mini breakout)
- Connection cable
- Mini-Breakout cable
- Tertiary cabling
- Premise cabling – backbone

Product features

- Installation cable with up to 12 semi tight buffered fibres
- Halogen-free and flame retardant FRNC outer sheath
- Mechanical robust
- Suitable for field assembly
- High flexibility

Approvals (Norm references)



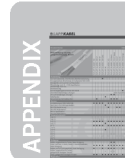
Product Make-up

- Fibres (900 µm)
- Glass yarns (non-metallic strain relief element)
- FRNC outer sheath
- Colour: orange (similar to RAL 2003)

Technical data

	Standard designation I-V(ZN)H
	Range of temperature Operation: -10°C to +60°C Laying: 0°C to +50°C
	Permissible bending radius fixed installation: 20 x cable diameter
	Permissible tensile force 800 N

Part number	Article designation	Fibre type	Number of fibres	Tension load capacity in N	Outer diameter in mm max.
HITRONIC® HDH Multimode G 50					
267004	HITRONIC® HDH1000 4G 50/125	50/125	4	800	6.3
267008	HITRONIC® HDH1000 8G 50/125	50/125	8	800	6.9
267012	HITRONIC® HDH1000 12G 50/125	50/125	12	800	7.2
HITRONIC® HDH Multimode G 62.5					
267104	HITRONIC® HDH1000 4G 62.5/125	62.5/125	4	800	6.3
267108	HITRONIC® HDH1000 8G 62.5/125	62.5/125	8	800	6.6





HITRONIC® FD Mobile Cable



Benefits

- F.O. Glass Fibre Optical cable for mobile applications outdoor and indoor with nonmetallic Glass yarn strength members
- Very easy to install due to small dimensions, very high flexibility, very small bending radius and suitable for field assembly
- Methods of Deployment: laying in trunking, ducts and trays, building riser, empty plastic pipes, raised floors and plenums for short distances
- Suitable for field assembly
- Designed for despooling and respooling repeatedly

- Premise cabling – backbone

Product features

- Mobile installation cable with up to 8 tight buffered fibres
- Robust and flame retardant PUR outer sheath
- Longitudinal watertight
- Suitable for field assembly
- Very high flexibility

Approvals (Norm references)



Technical data

Standard designation

AT-VQ(ZN) 11Y



Range of temperature

Operation: -30 °C to +70 °C

Laying: -5 °C to +50 °C



Permissible bending radius

15 x cable diameter



Permissible tensile force

800 N, 950 N, 1100 N

Application range

- Connection cable
- Mini-Breakout cable
- Industrial environment
- High flexibility environment (power chain)

Product Make-up

- Tight buffered fibres
- Glass yarns with water-blocking tape
- PUR outer sheath

Part number	Article designation	Fibre type	Number of fibres	Tension load capacity in N	Outer diameter in mm max.
HITRONIC® FD Multimode G 50					
21807048	HITRONIC® FD800 4G 50/125	50/125	4	800	5.8
21807047	HITRONIC® FD950 6G 50/125	50/125	6	950	6.3
HITRONIC® FD Multimode G 62.5					
21807045	HITRONIC® FD800 4G 62.5/125	62.5/125	4	800	5.8
21807050	HITRONIC® FD950 6G 62.5/125	62.5/125	6	950	6.3

The cables can also be supplied as cut-to-measure LWL trunks. Also with 8 fibers available.

EPIC® H-A 3 Kits	90
EPIC® H-A 3 Kits Metal	91
EPIC® H-A 4 Kits	92
EPIC® H-A 4 Kits Metal	93
EPIC® H-A 10 Kits	94
EPIC® H-A 16 Kits	95
EPIC® H-BE 6 Kits	96
EPIC® H-BE 10 Kits	97
EPIC® H-BE 16 Kits	98
EPIC® H-BE 24 Kits	99
EPIC® H-BS 6 Kits	100
EPIC® H-D 40 Kits	101
EPIC® H-D 64 Kits	102

EPIC®

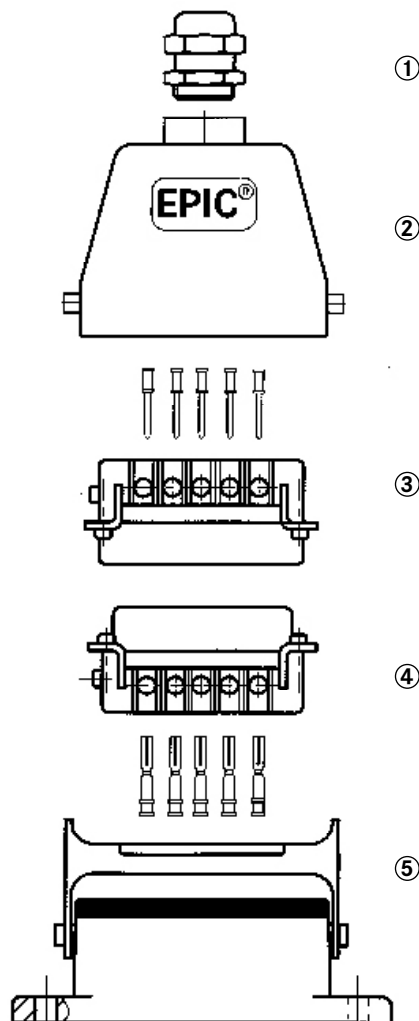
Industrial connectors



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- and data transmission
- 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 though 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



The crimping tool and the crimping machine could be equipped with several crimping dies, suitable to the different EPIC® contacts on the next pages. Both are compatible with most of the crimping dies and locators of the Universal Crimping tool.

Locator and crimping dies are not included and must be ordered separately, depending on your application. All component parts, which are necessary for crimping the several EPIC® contacts.

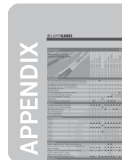
EPIC® Crimping machine 11147000

- Approved, robust crimping tool
- Crimping tool in tool case
- Locator and crimping dies are not included and must be ordered separately



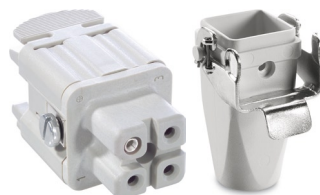
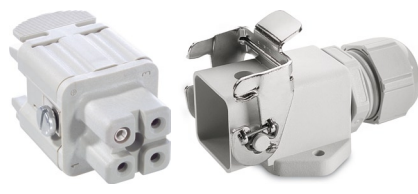
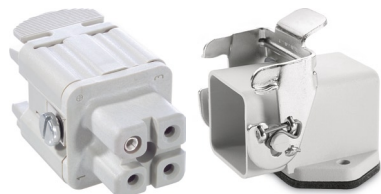
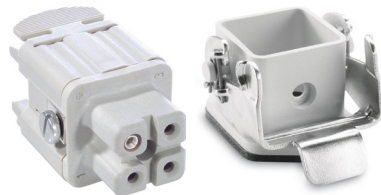
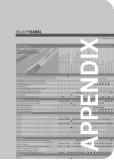
Pneumatic Crimping machine 11147001

- small but powerful, robust, pneumatic table crimping machine with a crimping force of 25 kN
- Locator and crimping dies are compatible to of the crimping tool 11147000
- Locator and crimping dies are not included and must be ordered separately
- For proper pressing operation and repeatable crimping results
- 360°-rotatable carrier for the mounting of the crimping dies – ideal for left- and right-handed people
- Maintenance-free operation, approved working-pressure: 5 – 10 bar
- Crimping range: 0.08 – 50 mm² (depending on the crimping dies)
- Dimensions: w x d x h:
28 cm x 32.5cm x 50 cm
- Weight: approximately 30 kg





H-A 3 Kits



Part number	Pieces / PU
75009601	1

Part numbers for single components

- H-A 3 SS 10420000
- H-A 3 Tgv M20 19426000

Part number	Pieces / PU
75009603	1

Part numbers for single components

- H-A 3 SS 10420000
- H-A 3 Ts M20 19427000

Part number	Pieces / PU
75009605	1

Part numbers for single components

- H-A 3 BS 10421000
- H-A 3 Ag 10422000

Part number	Pieces / PU
75009607	1

Part numbers for single components

- H-A 3 BS 10421000
- H-A 3 Ags 10423000

Part number	Pieces / PU
75009609	1

Part numbers for single components

- H-A 3 BS 10421000
- H-A 3 Agsv M20 19421900

Part number	Pieces / PU
75009611	1

Part numbers for single components

- H-A 3 BS 10421000
- H-A 3 Tgvb M20 19429000

EPIC KIT H-A 3 SS TG M20



- Male insert EPIC® H-A 3 screw termination
- Hood EPIC® H-A 3
- Housing: Thermoplastic grey

EPIC KIT H-A 3 SS TS M20



- Male insert EPIC® H-A 3 screw termination
- Hood EPIC® H-A 3
- Side entry
- Housing: Thermoplastic grey

EPIC KIT H-A 3 BS AG



- Female insert EPIC® H-A 3 screw termination
- Panel mount base EPIC® H-A 3
- Straight version
- Housing: Thermoplastic grey

EPIC KIT H-A 3 BS AGS



- Female insert EPIC® H-A 3 screw termination
- Panel mount base EPIC® H-A 3
- Angled version
- Housing: Thermoplastic grey

EPIC KIT H-A 3 BS AGS M20



- Female insert EPIC® H-A 3 screw termination
- Panel mount base EPIC® H-A 3
- Angled version
- Housing: Thermoplastic grey

EPIC KIT H-A 3 BS TGB M20



- Female insert EPIC® H-A 3 screw termination
- Cable coupler EPIC® H-A 3
- Housing: Thermoplastic grey



Info

- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Comparable products

- H-A 3 Kits Metall

Technical data

Rated voltage in V

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

Rated current in A

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

Numbers of contacts
3 + PE


EPIC KIT H-A 3 SS MTG M20


- Male insert EPIC® H-A 3 screw termination
- Hood EPIC® H-A 3
- Housing: Metal grey

Part number	Pieces / PU
75009602	1

Part numbers for single components

- H-A 3 SS 10420000
- H-A 3 MTgv M20 19426500

EPIC KIT H-A 3 SS MTS M20


- Male insert EPIC® H-A 3 screw termination
- Hood EPIC® H-A 3
- Side entry
- Housing: Metal grey

Part number	Pieces / PU
75009604	1

Part numbers for single components

- H-A 3 SS 10420000
- H-A 3 Ts M20 19512300

EPIC KIT H-A 3 BS MAG


- Female insert EPIC® H-A 3 screw termination
- Panel mount base EPIC® H-A 3
- Straight version
- Housing: Metal grey

Part number	Pieces / PU
75009606	1

Part numbers for single components

- H-A 3 BS 10421000
- H-A 3 Mag 10422500

EPIC KIT H-A 3 BS MAGS


- Female insert EPIC® H-A 3 screw termination
- Panel mount base EPIC® H-A 3
- Angled version
- Housing: Metal grey

Part number	Pieces / PU
75009608	1

Part numbers for single components

- H-A 3 BS 10421000
- H-A 3 Mags 10423500

EPIC KIT H-A 3 BS MAGS M20


- Female insert EPIC® H-A 3 screw termination
- Panel mount base EPIC® H-A 3
- Angled version
- Housing: Metal grey

Part number	Pieces / PU
75009610	1

Part numbers for single components

- H-A 3 BS 10421000
- H-A 3 MAGsv M20 19512700

EPIC KIT H-A 3 BS MTGB M20


- Female insert EPIC® H-A 3 screw termination
- Cable coupler EPIC® H-A 3
- Housing: Metal grey

Part number	Pieces / PU
75009612	1

Part numbers for single components

- H-A 3 BS 10421000
- H-A 3 MTgvb M20 19512900


Info

- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Comparable products

- H-A 3 Kits

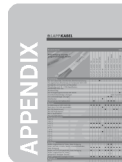
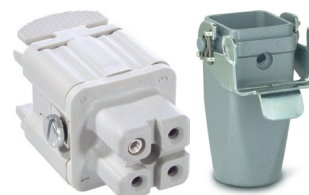
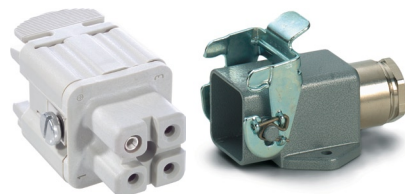
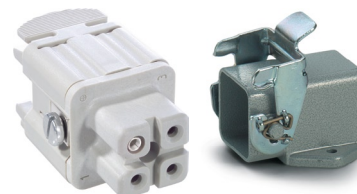
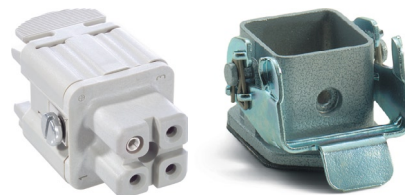
Technical data
Rated voltage in V

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

Rated current in A

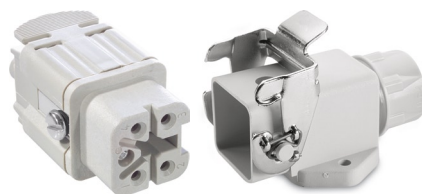
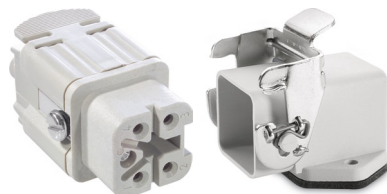
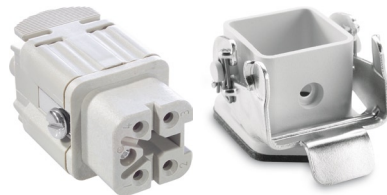
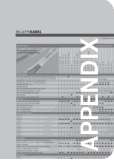
IEC: 23 A
UL: 10 A
CSA: 10 A

Numbers of contacts
3 + PE

H-A 3 Kits Metall




H-A 4 Kits



Part number	Pieces / PU
75009613	1

Part numbers for single components

- H-A 4 SS 10431000
- H-A 3 Tgv M20 19426000

Part number	Pieces / PU
75009615	1

Part numbers for single components

- H-A 4 SS 10431000
- H-A 3 Ts M20 19427000

Part number	Pieces / PU
75009617	1

Part numbers for single components

- H-A 4 BS 10432000
- H-A 3 Ag 10422000

Part number	Pieces / PU
75009619	1

Part numbers for single components

- H-A 4 BS 10432000
- H-A 3 Ags 10423000

Part number	Pieces / PU
75009621	1

Part numbers for single components

- H-A 4 BS 10432000
- H-A 3 Agsv M20 19421900

Part number	Pieces / PU
75009623	1

Part numbers for single components

- H-A 4 BS 10432000
- H-A 3 Tgvb M20 19429000

EPIC KIT H-A 4 SS TG M20



- Male insert EPIC® H-A 4 screw termination
- Hood EPIC® H-A 3
- Straight entry
- Housing: Thermoplastic grey

EPIC KIT H-A 4 SS TS M20



- Male insert EPIC® H-A 4 screw termination
- Hood EPIC® H-A 3
- Side entry
- Housing: Thermoplastic grey

EPIC KIT H-A 4 BS AG



- Female insert EPIC® H-A 4 screw termination
- Panel mount base EPIC® H-A 3
- Straight version
- Housing: Thermoplastic grey

EPIC KIT H-A 4 BS AGS



- Female insert EPIC® H-A 4 screw termination
- Panel mount base EPIC® H-A 3
- Angled version
- Housing: Thermoplastic grey

EPIC KIT H-A 4 BS AGS M20



- Female insert EPIC® H-A 4 screw termination
- Panel mount base EPIC® H-A 3
- Angled version
- Housing: Thermoplastic grey

EPIC KIT H-A 4 BS TGB M20



- Female insert EPIC® H-A 4 screw termination
- Cable coupler EPIC® H-A 3
- Straight entry
- Housing: Thermoplastic grey



Info

- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Comparable products

- H-A 4 Kits Metall

Technical data

Rated voltage in V

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

Rated current in A

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

Numbers of contacts

4 + PE


EPIC KIT H-A 4 SS MTG M20


- Male insert EPIC® H-A 4 screw termination
- Hood EPIC® H-A 3
- Straight entry
- Housing: Metal grey

Part number	Pieces / PU
75009614	1

Part numbers for single components

- H-A 4 SS 10431000
- H-A 3 MTgv M20 19426500

EPIC KIT H-A 4 SS MTS M20


- Male insert EPIC® H-A 4 screw termination
- Hood EPIC® H-A 3
- Side entry
- Housing: Metal grey

Part number	Pieces / PU
75009616	1

Part numbers for single components

- H-A 4 SS 10431000
- H-A 3 Ts M20 19512300

EPIC KIT H-A 4 BS MAG


- Female insert EPIC® H-A 4 screw termination
- Panel mount base EPIC® H-A 3
- Straight version
- Housing: Metal grey

Part number	Pieces / PU
75009618	1

Part numbers for single components

- H-A 4 BS 10432000
- H-A 3 Mag 10422500

EPIC KIT H-A 4 BS MAGS


- Female insert EPIC® H-A 4 screw termination
- Panel mount base EPIC® H-A 3
- Angled version
- Housing: Metal grey

Part number	Pieces / PU
75009620	1

Part numbers for single components

- H-A 4 BS 10432000
- H-A 3 Mags 10423500

EPIC KIT H-A 4 BS MAGS M20


- Female insert EPIC® H-A 4 screw termination
- Panel mount base EPIC® H-A 3
- Angled version
- Housing: Metal grey

Part number	Pieces / PU
75009622	1

Part numbers for single components

- H-A 4 BS 10432000
- H-A 3 MAGsv M20 19512700

EPIC KIT H-A 4 BS TGB M20


- Female insert EPIC® H-A 4 screw termination
- Cable coupler EPIC® H-A 3
- Straight entry
- Housing: Metal grey

Part number	Pieces / PU
75009624	1

Part numbers for single components

- H-A 4 BS 10432000
- H-A 3 MTgvb M20 19512900


Info

- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Comparable products

- H-A 4 Kits

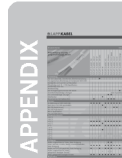
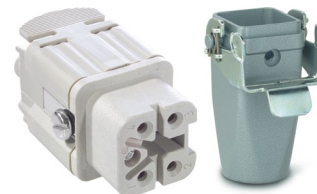
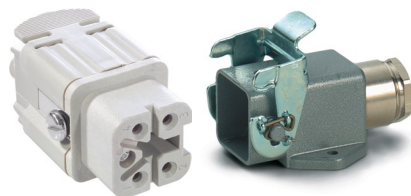
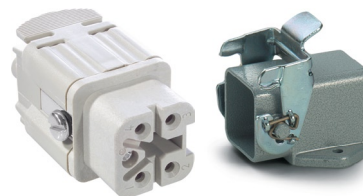
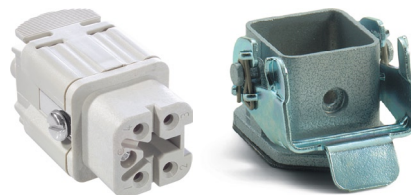
Technical data
Rated voltage in V

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

Rated current in A

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

Numbers of contacts
4 + PE

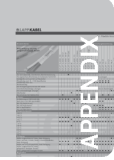
H-A 4 Kits Metall


Rectangular connectors

EPIC® Rectangular Kits



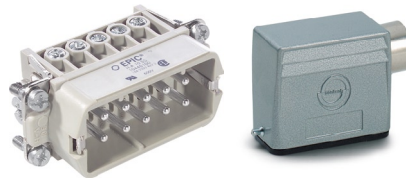
H-A 10 Kits



Part number	Pieces / PU
75009625	1

Part numbers for single components

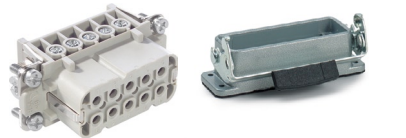
- H-A 10 SS 10440100
- H-A 10 TG M20 19446000



Part number	Pieces / PU
75009626	1

Part numbers for single components

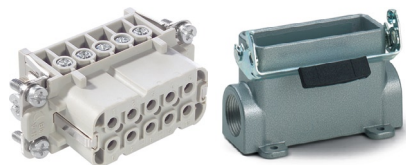
- H-A 10 SS 10440100
- H-A 10 TS M20 19445000



Part number	Pieces / PU
75009627	1

Part numbers for single components

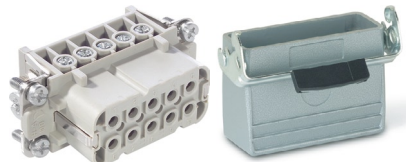
- H-A 10 BS 10441100
- H-A 10 AG-LB 10442000



Part number	Pieces / PU
75009628	1

Part numbers for single components

- H-A 10 BS 10441100
- H-A 10 SGR-LB M20 19448100



Part number	Pieces / PU
75009629	1

Part numbers for single components

- H-A 10 BS 10441100
- H-A 10 TBF-LB M20 19439000

EPIC KIT H-A 10 SS TG M20



- Male insert EPIC® H-A 10 screw termination
- With wire protection
- Hood EPIC® H-A 10

EPIC KIT H-A 10 SS TS M20



- Male insert EPIC® H-A 10 screw termination
- With wire protection
- Hood EPIC® H-A 10

EPIC KIT H-A 10 BS AG



- Female insert EPIC® H-A 10 screw termination
- With wire protection
- Panel mount base EPIC® H-A 10

EPIC KIT H-A 10 BS SGR-LB M20



- Female insert EPIC® H-A 10 screw termination
- With wire protection
- Surface mount base EPIC® H-A 10

EPIC KIT H-A 10 BS TBF-LB M20



- Female insert EPIC® H-A 10 screw termination
- With wire protection
- Cable coupler EPIC® H-A 10



Info

- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Technical data

Rated voltage in V

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

Rated current in A

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

Numbers of contacts
10 + PE



H-A 16 Kits

EPIC KIT H-A 16 SS TG M20

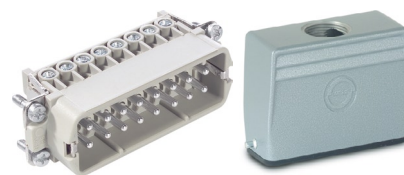


- Male insert EPIC® H-A 16 screw termination
- With wire protection
- Hood EPIC® H-A 16

Part number	Pieces / PU
75009630	1

Part numbers for single components

- H-A 16 SS 10530000
- H-A 16 TG M20 19565000



EPIC KIT H-A 16 SS TS M20

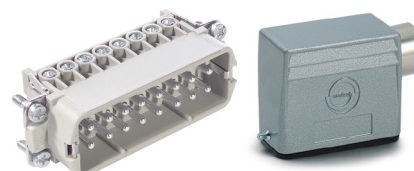


- Male insert EPIC® H-A 16 screw termination
- With wire protection
- Hood EPIC® H-A 16

Part number	Pieces / PU
75009631	1

Part numbers for single components

- H-A 16 SS 10530000
- H-A 16 TS M20 19564000



EPIC KIT H-A 16 BS AG

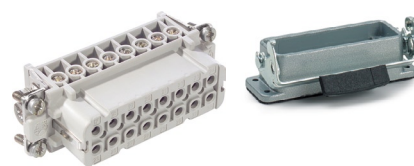


- Female insert EPIC® H-A 16 screw termination
- With wire protection
- Panel mount base EPIC® H-A 16

Part number	Pieces / PU
75009632	1

Part numbers for single components

- H-A 16 BS 10531000
- H-A 16 AG-LB 10462000



EPIC KIT H-A 16 BS SGR-LB M20

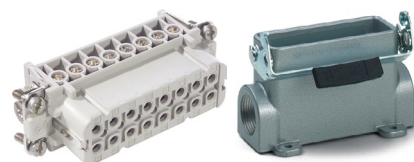


- Female insert EPIC® H-A 16 screw termination
- With wire protection
- Surface mount base EPIC® H-A 16

Part number	Pieces / PU
75009633	1

Part numbers for single components

- H-A 16 BS 10531000
- H-A 16 SGR-LB M20 19567100



EPIC KIT H-A 16 BS TBF-LB M20

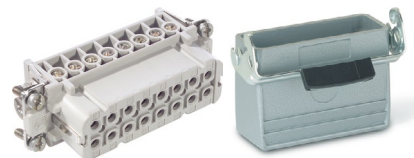


- Female insert EPIC® H-A 16 screw termination
- With wire protection
- Cable coupler EPIC® H-A 16

Part number	Pieces / PU
75009634	1

Part numbers for single components

- H-A 16 BS 10531000
- H-A 16 TBF-LB M20 19563000



Info

- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Technical data

Rated voltage in V

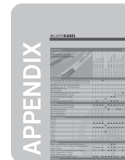
IEC: 250 V
UL: 600 V
CSA: 600 V

Rated current in A

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

Numbers of contacts

16 + PE

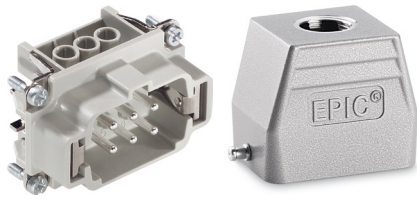


Rectangular connectors

EPIC® Rectangular Kits



H-BE 6 Kits



Part number	Pieces / PU
75009635	1

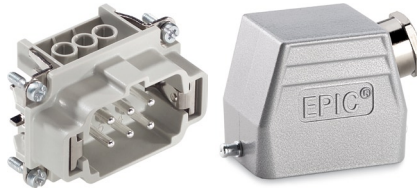
Part numbers for single components

- H-BE 6 SS 10190000
- H-B 6 TG M20 19011000

EPIC KIT H-BE 6 SS TG M20



- Male insert EPIC® H-BE 6 screw termination
- With wire protection
- Hood EPIC® H-B 6



Part number	Pieces / PU
75009636	1

Part numbers for single components

- H-BE 6 SS 10190000
- H-B 6 TS M20 19012000

EPIC KIT H-BE 6 SS TS M20



- Male insert EPIC® H-BE 6 screw termination
- With wire protection
- Hood EPIC® H-B 6



Part number	Pieces / PU
75009637	1

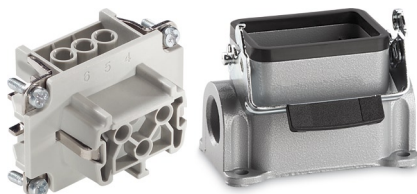
Part numbers for single components

- H-BE 6 BS 10191000
- H-B 6 AG-LB 10003000

EPIC KIT H-BE 6 BS AG-LB



- Female insert EPIC® H-BE 6 screw termination
- With wire protection
- Panel mount base EPIC® H-B 6



Part number	Pieces / PU
75009638	1

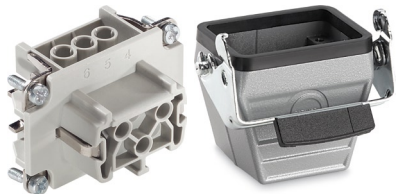
Part numbers for single components

- H-BE 6 BS 10191000
- H-B 6 SGR M20 19005000

EPIC KIT H-BE 6 BS SGR-LB M20



- Female insert EPIC® H-BE 6 screw termination
- With wire protection
- Surface mount base EPIC® H-B 6



Part number	Pieces / PU
75009639	1

Part numbers for single components

- H-BE 6 BS 10191000
- H-B 6 TBF M20 19014000

EPIC KIT H-BE 6 BS TBF-LB M20



- Female insert EPIC® H-BE 6 screw termination
- With wire protection
- Cable coupler EPIC® H-B 6



Info

- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Technical data

Rated voltage in V

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

Rated current in A

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

Numbers of contacts

6 + PE



H-BE 10 Kits

EPIC KIT H-BE 10 SS TG M25

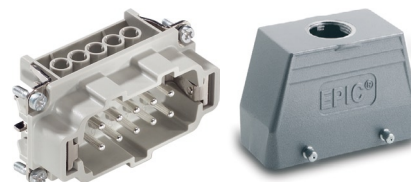


- Male insert EPIC® H-BE 10 screw termination
- With wire protection
- Hood EPIC® H-B 10

Part number	Pieces / PU
75009640	1

Part numbers for single components

- H-BE 10 SS 10192000
- H-B 10 TG M25 19040100



EPIC KIT H-BE 10 SS TS M25

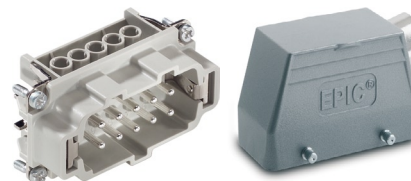


- Male insert EPIC® H-BE 10 screw termination
- With wire protection
- Hood EPIC® H-B 10

Part number	Pieces / PU
75009641	1

Part numbers for single components

- H-BE 10 SS 10192000
- H-B 10 TS M25 19042100



EPIC KIT H-BE 10 BS AG



- Female insert EPIC® H-BE 10 screw termination
- With wire protection
- Panel mount base EPIC® H-B 10

Part number	Pieces / PU
75009642	1

Part numbers for single components

- H-BE 10 BS 10193000
- H-B 10 AG 10032000



EPIC KIT H-BE 10 BS SGR M25

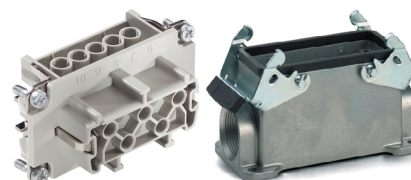


- Female insert EPIC® H-BE 10 screw termination
- With wire protection
- Surface mount base EPIC® H-B 10

Part number	Pieces / PU
75009643	1

Part numbers for single components

- H-BE 10 BS 10193000
- H-B 10 SGR M25 19034100



EPIC KIT H-BE 10 BS TBF M25

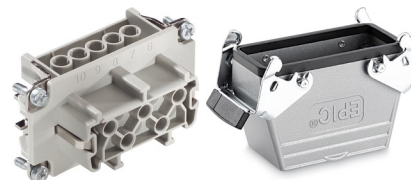


- Female insert EPIC® H-BE 10 screw termination
- With wire protection
- Cable coupler EPIC® H-B 10

Part number	Pieces / PU
75009644	1

Part numbers for single components

- H-BE 10 BS 10193000
- H-B 10 TBF M25 79040200



Info

- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Technical data

Rated voltage in V

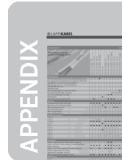
IEC: 500 V
UL: 600 V
CSA: 600 V

Rated current in A

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

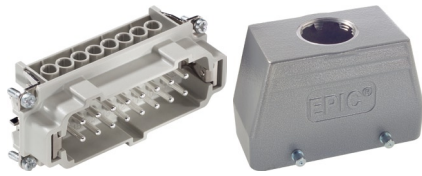
Numbers of contacts

10 + PE





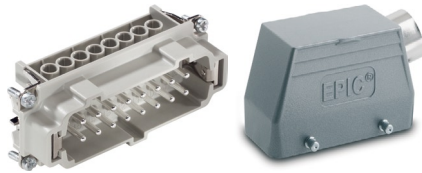
H-BE 16 Kits



Part number	Pieces / PU
75009645	1

Part numbers for single components

- H-BE 16 SS 10194000
- H-B 16 TG M25 19080000



Part number	Pieces / PU
75009646	1

Part numbers for single components

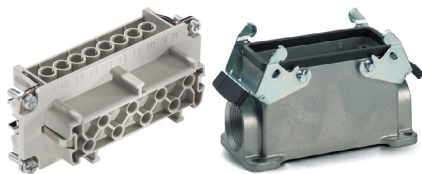
- H-BE 16 SS 10194000
- H-B 16 TS M25 19082000



Part number	Pieces / PU
75009647	1

Part numbers for single components

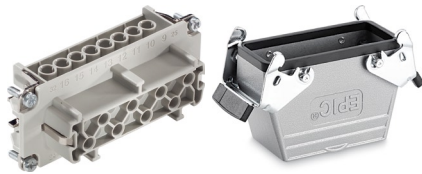
- H-BE 16 BS 10195000
- H-B 16 AG 10072000



Part number	Pieces / PU
75009648	1

Part numbers for single components

- H-BE 16 BS 10195000
- H-B 16 SGR M25 19074000



Part number	Pieces / PU
75009649	1

Part numbers for single components

- H-BE 16 BS 10195000
- H-B 16 TBF M25 19086000

EPIC KIT H-BE 16 SS TG M25



- Female insert EPIC® H-BE 16 screw termination
- With wire protection
- Hood EPIC® H-B 16

EPIC KIT H-BE 16 SS TS M25



- Female insert EPIC® H-BE 16 screw termination
- With wire protection
- Hood EPIC® H-B 16

EPIC KIT H-BE 16 BS AG



- Female insert EPIC® H-BE 16 screw termination
- With wire protection
- Panel mount base EPIC® H-B 16

EPIC KIT H-BE 16 BS SGR M25



- Female insert EPIC® H-BE 16 screw termination
- With wire protection
- Surface mount base EPIC® H-B 16

EPIC KIT H-BE 16 BS TBF M25



- Female insert EPIC® H-BE 16 screw termination
- With wire protection
- Cable coupler EPIC® H-B 16



Info

- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Technical data

Rated voltage in V

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

Rated current in A

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

Numbers of contacts

16 + PE



H-BE 24 Kits

EPIC KIT H-BE 24 SS TG M25

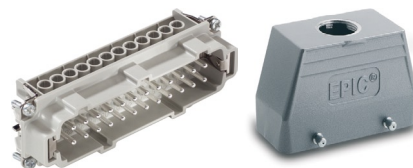


- Male insert EPIC® H-BE 24 screw termination
- With wire protection
- Hood EPIC® H-B 24

Part number	Pieces / PU
75009650	1

Part numbers for single components

- H-BE 24 SS 10196000
- H-B 24 TG M25 19121000



EPIC KIT H-BE 24 SS TS M25

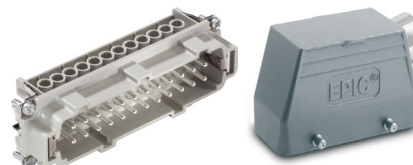


- Male insert EPIC® H-BE 24 screw termination
- With wire protection
- Hood EPIC® H-B 24

Part number	Pieces / PU
75009651	1

Part numbers for single components

- H-BE 24 SS 10196000
- H-B 24 TS M25 19113000



EPIC KIT H-BE 24 BS AG

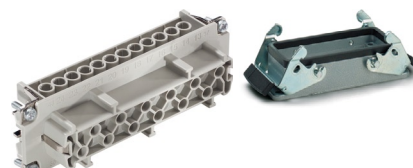


- Female insert EPIC® H-BE 24 screw termination
- With wire protection
- Panel mount base EPIC® H-B 24

Part number	Pieces / PU
75009652	1

Part numbers for single components

- H-BE 24 BS 10197000
- H-B 24 AG 10102000



EPIC KIT H-BE 24 BS SGR M25



- Female insert EPIC® H-BE 24 screw termination
- With wire protection
- Surface mount base EPIC® H-B 24

Part number	Pieces / PU
75009653	1

Part numbers for single components

- H-BE 24 BS 10197000
- H-B 24 SGR M25 19104000



EPIC KIT H-BE 24 BS TBF M25

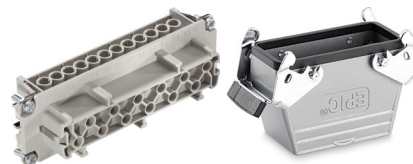


- Female insert EPIC® H-BE 24 screw termination
- With wire protection
- Cable coupler EPIC® H-B 24

Part number	Pieces / PU
75009654	1

Part numbers for single components

- H-BE 24 BS 10197000
- H-B 24 TBF M25 19127000



Info

- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Technical data

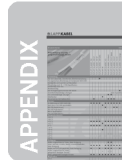
Rated voltage in V

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

Rated current in A

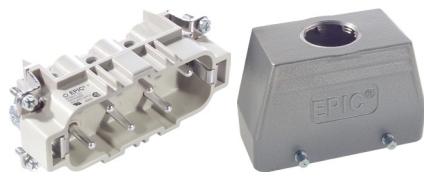
IEC: 16 A
UL: 16 A
CSA: 16 A

Numbers of contacts
24 + PE





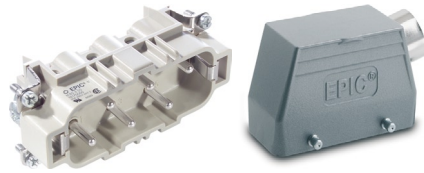
H-BS 6 Kits



Part number	Pieces / PU
75009655	1

Part numbers for single components

- H-BS 6 SS 10170000
- H-B 16 TG M25 19080000



Part number	Pieces / PU
75009656	1

Part numbers for single components

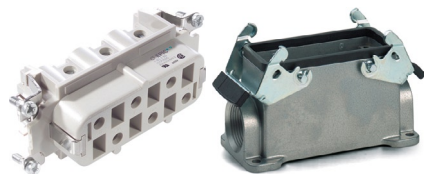
- H-BS 6 SS 10170000
- H-B 16 TS M25 19082000



Part number	Pieces / PU
75009657	1

Part numbers for single components

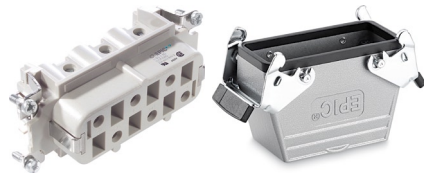
- H-BS 6 BS 10171000
- H-B 16 AG 10072000



Part number	Pieces / PU
75009658	1

Part numbers for single components

- H-BS 6 BS 10171000
- H-B 16 SGR M25 19074000



Part number	Pieces / PU
75009659	1

Part numbers for single components

- H-BS 6 BS 10171000
- H-B 16 TBF M25 19086000

EPIC KIT H-BS 6 SS TG M25



- Male insert EPIC® H-BS 6 screw termination
- With wire protection
- Hood EPIC® H-B 16

EPIC KIT H-BS 6 SS TS M25



- Male insert EPIC® H-BS 6 screw termination
- With wire protection
- Hood EPIC® H-B 16

EPIC KIT H-BE 6 BS AG-LB



- Female insert EPIC® H-BS 6 screw termination
- With wire protection
- Panel mount base EPIC® H-B 16

EPIC KIT H-BS 6 BS SGR M25



- Female insert EPIC® H-BS 6 screw termination
- With wire protection
- Surface mount base EPIC® H-B 16

EPIC KIT H-BE 6 BS TBF-LB M20



- Female insert EPIC® H-BS 6 screw termination
- With wire protection
- Cable coupler EPIC® H-B 16



Info

- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Technical data

Rated voltage in V

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

Rated current in A

IEC: 35 A
UL: 35 A
CSA: 36 A

Numbers of contacts

6 + PE

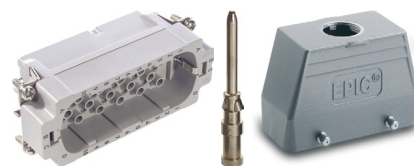

EPIC KIT H-D 40 SCM TG M32


- Male insert EPIC® H-D 40 crimp termination
- Machined crimp contacts 0,75-1,0mm² are included
- Hood EPIC® H-B 16

Part number	Pieces / PU
75009660	1

Part numbers for single components

- H-D 40 SCM 11265200
- H-B 16 TG M32 19090000
- H-D 1,6 machined 13162200

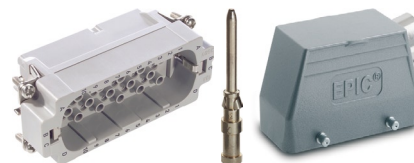

EPIC KIT H-D 40 SCM TS M32


- Male insert EPIC® H-D 40 crimp termination
- Machined crimp contacts 0,75-1,0mm² are included
- Hood EPIC® H-B 16

Part number	Pieces / PU
75009661	1

Part numbers for single components

- H-D 40 SCM 11265200
- H-B 16 TS M32 19092000
- H-D 1,6 machined 13162200


EPIC KIT H-D 40 BCM AG


- Female insert EPIC® H-D 40 crimp termination
- Machined crimp contacts 0,75-1,0mm² are included
- Panel mount base EPIC® H-B 16

Part number	Pieces / PU
75009662	1

Part numbers for single components

- H-D 40 BCM 11266200
- H-B 16 AG 10072000
- H-D 1,6 machined 13163200


EPIC KIT H-D 40 BCM SGR M25


- Female insert EPIC® H-D 40 crimp termination
- Machined crimp contacts 0,75-1,0mm² are included
- Surface mount base EPIC® H-B 16

Part number	Pieces / PU
75009663	1

Part numbers for single components

- H-D 40 BCM 11266200
- H-B 16 SGR M25 19074000
- H-D 1,6 machined 13163200


EPIC KIT H-D 40 BCM TBF M25


- Female insert EPIC® H-D 40 crimp termination
- Machined crimp contacts 0,75-1,0mm² are included
- Cable coupler EPIC® H-B 16

Part number	Pieces / PU
75009664	1

Part numbers for single components

- H-D 40 BCM 11266200
- H-B 16 TBF M25 19086000
- H-D 1,6 machined 13163200


Info

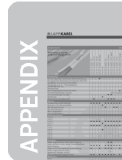
- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Technical data

Rated voltage in V
 IEC: 250 V
 UL: 250 V
Rated current in A
 IEC: 10 A
 UL: 10 A
Numbers of contacts
 40 + PE

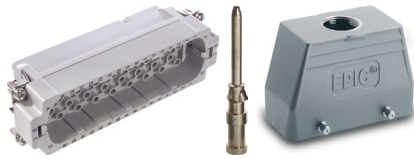


Rectangular connectors

EPIC® Rectangular Kits



H-D 64 Kits



Part number	Pieces / PU
75009665	1

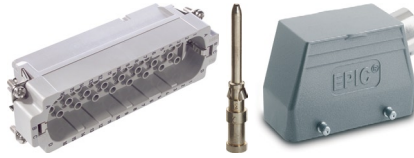
Part numbers for single components

- H-D 64 SCM 11272000
- H-B 24 TG M32 19111000
- H-D 1,6 machined 13162000

EPIC KIT H-D 64 SCM TG M32



- Male insert EPIC® H-D 64 crimp termination
- Machined crimp contacts 0,14-0,37mm² are included
- Hood EPIC® H-B 24



Part number	Pieces / PU
75009666	1

Part numbers for single components

- H-D 64 SCM 11272000
- H-B 24 TS M32 19123000
- H-D 1,6 machined 13162000

EPIC KIT H-D 64 SCM TS M32



- Male insert EPIC® H-D 64 crimp termination
- Machined crimp contacts 0,14-0,37mm² are included
- Hood EPIC® H-B 24



Part number	Pieces / PU
75009667	1

Part numbers for single components

- H-D 64 BCM 11273000
- H-B 24 AG 10102000
- H-D 1,6 machined 13163000

EPIC KIT H-D 64 BCM AG



- Female insert EPIC® H-D 64 crimp termination
- Machined crimp contacts 0,14-0,37mm² are included
- Panel mount base EPIC® H-B 24



Part number	Pieces / PU
75009668	1

Part numbers for single components

- H-D 64 BCM 11273000
- H-B 24 SGRL M25 19105000
- H-D 1,6 machined 13163000

EPIC KIT H-D 64 BCM SGRL M25



- Female insert EPIC® H-D 64 crimp termination
- Machined crimp contacts 0,14-0,37mm² are included
- Surface mount base EPIC® H-B 24



Part number	Pieces / PU
75009669	1

Part numbers for single components

- H-D 64 BCM 11273000
- H-B 24 TBF M32 19117000
- H-D 1,6 machined 13163000

EPIC KIT H-D 64 BCM TBF M32



- Female insert EPIC® H-D 64 crimp termination
- Machined crimp contacts 0,14-0,37mm² are included
- Cable coupler EPIC® H-B 24



Info

- Complete connectors - easy to order

Benefits

- Prepacked kits with suitable components
- Uncomplicated ordering
- Reduced misplaced orders

Technical data

Rated voltage in V

IEC: 250 V

UL: 250 V

Rated current in A

IEC: 10 A

UL: 10 A

Numbers of contacts

64 + PE

SKINTOP® ST-M / SKINTOP® STR-M	105
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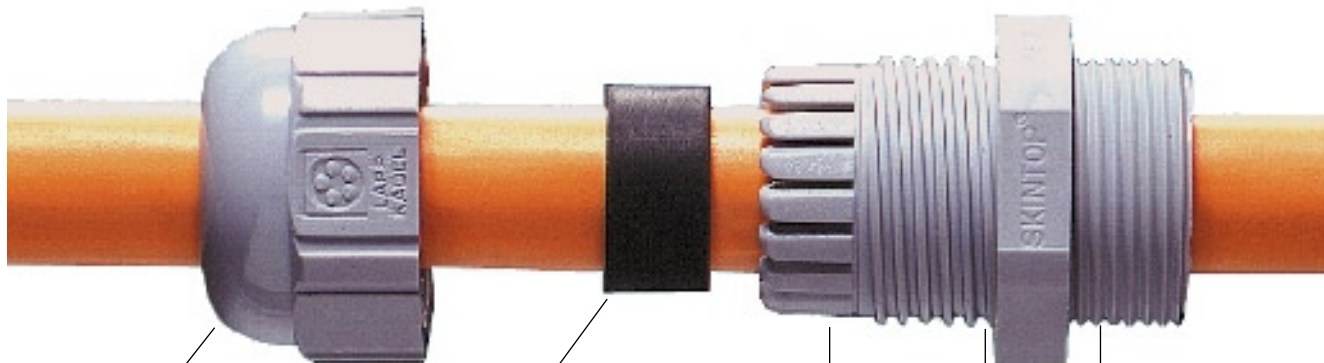
SKINTOP® SKINDICHT®

Cable glands





Secured by a single turn of the hand



Cap nut with ergonomically designed gripping grooves. The gripping surfaces are generously dimensioned for spanners. Integral locking feature for vibration-resistant assembly.

Neoprene® sealing for a hermetic seal (IP 68). Every SKINTOP® version is available with reducing seal insert for smaller cable diameters.

Lamellar design for optimum strain relief and protection of the cable. Widely variable clamping range, therefore only a few gland sizes are necessary.

Integral sealing ridges for a watertight junction with the housing.

Multiple trapezoidal thread for secure and instant assembly.

Shown here are the carefully matched components of the SKINTOP® screw-type cable glands. It is precisely these parts which guarantee optimum reliability.

■ Even more

With SKINTOP® you can fix the cable in an instant. Just feed it in, turn till tight - ready. So your cable is fixed, centered, hermetically sealed and completely strainrelieved with a turn of the hand. If you do not wish to use your hands, you can of course work with a spanner. Either way, with SKINTOP® you can achieve maximum reliability. To ensure that this remains so, SKINTOP® quality is continuously monitored. A quality which has brought us a great many international approvals.

■ Resistance properties



Thermal SKINTOP® ST-M

static: -40°C up to +100°C
dynamic: -20°C up to +100°C

Chemical

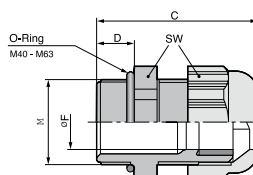
- Alcohols
- Aromatic hydrocarbons
- Ethers
- Benzene
- Chlorinated hydrocarbons
- Esters
- Grease, animal-vegetable
- Fluorinated hydrocarbons
- Ketones
- Motor fuels

- = resistant
- = limited resistance
- = non-resistant

For other aggressive media we recommend a test in our laboratory.



SKINTOP® ST-M / SKINTOP® STR-M



Benefits

SKINTOP® ST-M

- Maximum reliability
- Various accessories (e. g. multiple sealing inserts)
- Permanent vibration protection
- Optimal strain relief
- Large, variable clamping ranges

SKINTOP® STR-M

- Benefits see SKINTOP® ST-M

Application range

SKINTOP® ST-M

- Everywhere where cables must be safely inserted into housings.
- Machine and apparatus construction
- Photovoltaic
- Automation technology
- Mobile off-shore units, equipment and ship yards

SKINTOP® STR-M

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

Product Make-up

- Metric connection thread acc. to EN 50262

Note

SKINTOP® ST-M

- For suitable accessories see SKINTOP® metric accessories
- Counter nut to be used SKINTOP® GMP-GL-M
- SKINTOP® ST M ISO types have a extralong connection thread
- Versions SKINTOP® ST M ISO with extra long connection thread, see table, have no DNV approval

SKINTOP® STR-M

- For suitable accessories see SKINTOP® metric accessories
- Counter nut to be used SKINTOP® GMP-GL-M
- SKINTOP® STR M ISO types have a extralong connection thread
- Versions SKINTOP® STR M ISO with extra long connection thread, see table, have no DNV approval

Suitable tools

SKINTOP® ST-M

- SKINMATIC® Quick Set 1

Technical data



Caution

Installation dimensions and tightening torques see T12



Colour delivered

RAL 7001 silver-grey
RAL 7035 light grey
RAL 9005 black / UV resistant



Material

Body: Polyamide
Seal: CR



Tests

GGVS: TÜ.EGG.020-95



Degree of protection

IP 68 - 5 bar
IP 69 K pending



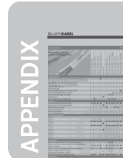
Range of temperature

static: -40°C up to +100°C
dynamic: -20°C up to +100°C

Approvals (Norm references)



Part number	Part designation / size	Clamping range ØF mm	SW mm	Overall length C mm	Thread length D mm	Pieces / PU
SKINTOP® ST-M silver-grey						
53111000	ST-M 12 x 1,5	3,5-7	15	30,0	8,0	100
53111010	ST-M 16 x 1,5	4,5-10	19	34,0	8,0	100
53111020	ST-M 20 x 1,5	7-13	25	37,0	9,0	100
53111030	ST-M 25 x 1,5	9-17	30	40,0	10,0	50
53111040	ST-M 32 x 1,5	11-21	36	47,0	10,0	25
53111050	ST-M 40 x 1,5	19-28	46	52,0	10,0	10
53111060	ST-M 50 x 1,5	27-35	55	62,0	12,0	5
53111070	ST-M 63 x 1,5	34-45	66	71,0	12,0	5
SKINTOP® ST-M black						
53111200	ST-M 12 x 1,5	3,5-7	15	30,0	8,0	100
53111210	ST-M 16 x 1,5	4,5-10	19	34,0	8,0	100
53111220	ST-M 20 x 1,5	7-13	25	37,0	9,0	100
53111230	ST-M 25 x 1,5	9-17	30	40,0	10,0	50
53111240	ST-M 32 x 1,5	11-21	36	47,0	10,0	25
53111250	ST-M 40 x 1,5	19-28	46	52,0	10,0	10
53111260	ST-M 50 x 1,5	27-35	55	62,0	12,0	5
53111270	ST-M 63 x 1,5	34-45	66	71,0	12,0	5
SKINTOP® ST-M light grey						
53111400	ST-M 12 x 1,5	3,5-7	15	30,0	8,0	100
53111410	ST-M 16 x 1,5	4,5-10	19	34,0	8,0	100
53111420	ST-M 20 x 1,5	7-13	25	37,0	9,0	100
53111430	ST-M 25 x 1,5	9-17	30	40,0	10,0	50
53111440	ST-M 32 x 1,5	11-21	36	47,0	10,0	25
53111450	ST-M 40 x 1,5	19-28	46	52,0	10,0	10
53111460	ST-M 50 x 1,5	27-35	55	62,0	12,0	5
53111470	ST-M 63 x 1,5	34-45	66	71,0	12,0	5
SKINTOP® ST M ISO silver-grey (with long metric connecting thread)						
53017010	ST M 16 x 1,5	3,5-8	19	40,0	12,0	100
53017030	ST M 20 x 1,5	5-12	24	45,0	13,0	100
53017040	ST M 25 x 1,5	9-14	27	47,0	13,0	50
SKINTOP® ST M ISO black (with long metric connecting thread)						
53017210	ST M 16 x 1,5	3,5-8	19	40,0	12,0	100
53017230	ST M 20 x 1,5	5-12	24	45,0	13,0	100
53017240	ST M 25 x 1,5	9-14	27	47,0	13,0	50
SKINTOP® STR-M silver-grey						
53111100	STR-M 12 x 1,5	1-5	15	30,0	8,0	100
53111110	STR-M 16 x 1,5	2-7	19	34,0	8,0	100
53111120	STR-M 20 x 1,5	5-10	25	37,0	9,0	100
53111130	STR-M 25 x 1,5	6-13	30	40,0	10,0	50
53111140	STR-M 32 x 1,5	7-15	36	47,0	10,0	25
53111150	STR-M 40 x 1,5	15-23	46	52,0	10,0	10



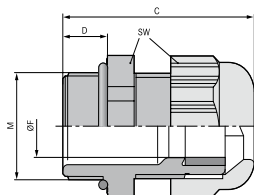


SKINTOP® ST-M / SKINTOP® STR-M

Part number	Part designation / size	Clamping range ØF mm	SW mm	Overall length C mm	Thread length D mm	Pieces / PU
53111160	STR-M 50 x 1,5	22-29	55	62.0	12.0	5
53111170	STR-M 63 x 1,5	28-39	66	71.0	12.0	5
SKINTOP® STR-M black						
53111300	STR-M 12 x 1,5	1-5	15	30.0	8.0	100
53111310	STR-M 16 x 1,5	2-7	19	34.0	8.0	100
53111320	STR-M 20 x 1,5	5-10	25	37.0	9.0	100
53111330	STR-M 25 x 1,5	6-13	30	40.0	10.0	50
53111340	STR-M 32 x 1,5	7-15	36	47.0	10.0	25
53111350	STR-M 40 x 1,5	15-23	46	52.0	10.0	10
53111360	STR-M 50 x 1,5	22-29	55	62.0	12.0	5
53111370	STR-M 63 x 1,5	28-39	66	71.0	12.0	5
SKINTOP® STR-M light grey						
53111500	STR-M 12 x 1,5	1-5	15	30.0	8.0	100
53111510	STR-M 16 x 1,5	2-7	19	34.0	8.0	100
53111520	STR-M 20 x 1,5	5-10	25	37.0	9.0	100
53111530	STR-M 25 x 1,5	6-13	30	40.0	10.0	50
53111540	STR-M 32 x 1,5	7-15	36	47.0	10.0	25
53111550	STR-M 40 x 1,5	15-23	46	52.0	10.0	10
53111560	STR-M 50 x 1,5	22-29	55	62.0	12.0	5
53111570	STR-M 63 x 1,5	28-39	66	71.0	12.0	5
SKINTOP® STR M ISO silver-grey (with long metric connecting thread)						
53017110	STR M 16 x 1,5	2-6	19	40.0	12.0	100
53017130	STR M 20 x 1,5	4-9	24	45.0	13.0	100
53017140	STR M 25 x 1,5	6-12	27	47.0	13.0	50
SKINTOP® STR M ISO black (with long metric connecting thread)						
53017310	STR M 16 x 1,5	2-6	19	40.0	12.0	100
53017330	STR M 20 x 1,5	4-9	24	45.0	13.0	100
53017340	STR M 25 x 1,5	6-12	27	47.0	13.0	50

SKINTOP® halogen free

SKINTOP® ST-HF-M



SKINTOP® ST-HF-M

■ Benefits

- Maximum reliability
- Extremely flame-retardant acc. UL 94 V0
- Completely halogen-free (inclusive seal material)
- Self-extinguishing, no dripping
- Permanent vibration protection

■ Application range

- Where personal and property protection is a priority.

- Public buildings
- Ventilation systems
- Tunnel construction
- Underground railways and trains

■ Approvals (Norm references)



■ Product Make-up

- Metric connection thread acc. to EN 50262



Info

- Halogen free cable glands

■ Technical data

Caution
Installation dimensions and tightening torques see T12

Approvals
DIN VDE
VDE / EN 50262
Filament wire test
EN 60695-2-1/1
+960°C

Colour delivered
RAL 7035 light grey

Material
Polyamide UL94 V0 - halogen free
Seal: LSE 1 - halogen free
O-ring: LSE 1 - halogen free

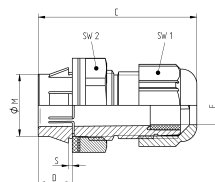
Degree of protection
IP 68 - 5 bar

Range of temperature
-20°C up to +100°C

Part number	Part designation / size	Clamping range ØF mm	SW mm	Overall length C mm	Thread length D mm	Pieces / PU
SKINTOP® ST-HF-M						
53111407	ST-HF-M 12 x 1,5	4-5,5	15	30.0	8.0	100
53111417	ST-HF-M 16 x 1,5	4,5-9	19	34.0	8.0	100
53111427	ST-HF-M 20 x 1,5	7-13	25	37.0	9.0	100
53111437	ST-HF-M 25 x 1,5	9-17	30	40.0	10.0	50
53111447	ST-HF-M 32 x 1,5	11-21	36	47.0	10.0	25


New

SKINTOP® CLICK / SKINTOP® CLICK-R



Info

- The most innovative cable insertion system on the market for very fast, highly flexible assembly. Simply click in - turn to left - turn to right - finished. Result: fixed, centred, strain relieved and maximum protection class in seconds.

Benefits

SKINTOP® CLICK

- Fewer parts, counter nut no longer needed
- Save up to 70% of your time
- Simple, free assembly in any position
- Vibration protection
- No thread required

SKINTOP® CLICK-R

- Benefits see SKINTOP® CLICK

Application range

SKINTOP® CLICK

- Automation technology
- Solar applications

- Switch cabinet building
- Measurement, control and electrical applications
- Air conditioning technology

SKINTOP® CLICK-R

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

Approvals (Norm references)



Scope of delivery

- Disassembly tool contained in the delivery scope

Technical data



Approvals

SKINTOP® CLICK

VDE approval for sizes M12 and M32 pending



Colour delivered

RAL 7001 silver-grey
RAL 7035 light grey
RAL 9005 black / UV resistant



Material

Body: special polyamide

Seal: special elastomer



Degree of protection

SKINTOP® CLICK

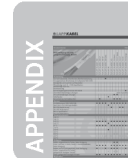
IP 68 - 5 bar



Range of temperature

-20°C up to +100°C

Part number	Part designation / size	Clamping range ØF mm	M (hole mm)	SW1 / SW2 mm	Overall length C mm	Thread length D mm	S (wall thickness mm)	Pieces / PU
SKINTOP® CLICK light grey								
53112692	CLICK 12	3,5 - 7	12,3 (-0,2)	15 / 18	40,0	8,0	1,0 - 4,0	50
53112686	CLICK 16	5 - 9	16,3 (-0,2)	19 / 22	42,0	8,0	1,0 - 4,0	50
53112687	CLICK 20	7 - 13	20,3 (-0,2)	25 / 27	45,5	8,0	1,0 - 4,0	25
53112688	CLICK 25	9 - 17	25,3 (-0,2)	30 / 34	48,5	8,0	1,0 - 4,0	25
53112694	CLICK 32	11 - 21	32,3 (-0,2)	36 / 40	55,0	8,0	1,0 - 4,0	25
SKINTOP® CLICK silver-grey								
53112921	CLICK 12	3,5 - 7	12,3 (-0,2)	15 / 18	40,0	8,0	1,0 - 4,0	50
53112876	CLICK 16	5 - 9	16,3 (-0,2)	19 / 22	42,0	8,0	1,0 - 4,0	50
53112877	CLICK 20	7 - 13	20,3 (-0,2)	25 / 27	45,5	8,0	1,0 - 4,0	25
53112878	CLICK 25	9 - 17	25,3 (-0,2)	30 / 34	48,5	8,0	1,0 - 4,0	25
53112922	CLICK 32	11 - 21	32,3 (-0,2)	36 / 40	55,0	8,0	1,0 - 4,0	25
SKINTOP® CLICK black								
53112923	CLICK 12	3,5 - 7	12,3 (-0,2)	15 / 18	40,0	8,0	1,0 - 4,0	50
53112882	CLICK 16	5 - 9	16,3 (-0,2)	19 / 22	42,0	8,0	1,0 - 4,0	50
53112883	CLICK 20	7 - 13	20,3 (-0,2)	25 / 27	45,5	8,0	1,0 - 4,0	25
53112884	CLICK 25	9 - 17	25,3 (-0,2)	30 / 34	48,5	8,0	1,0 - 4,0	25
53112924	CLICK 32	11 - 21	32,3 (-0,2)	36 / 40	55,0	8,0	1,0 - 4,0	25
SKINTOP® CLICK-R light grey								
53112925	CLICK-R 12	1 - 5	12,3 (-0,2)	15 / 18	40,0	8,0	1,0 - 4,0	50
53112689	CLICK-R 16	4 - 7	16,3 (-0,2)	19 / 22	42,0	8,0	1,0 - 4,0	50
53112690	CLICK-R 20	5 - 10	20,3 (-0,2)	25 / 27	45,5	8,0	1,0 - 4,0	25
53112691	CLICK-R 25	6 - 13	25,3 (-0,2)	30 / 34	48,5	8,0	1,0 - 4,0	25
53112926	CLICK-R 32	7 - 15	32,3 (-0,2)	36 / 40	55,0	8,0	1,0 - 4,0	25
SKINTOP® CLICK-R silver-grey								
53112927	CLICK-R 12	1 - 5	12,3 (-0,2)	15 / 18	40,0	8,0	1,0 - 4,0	50
53112879	CLICK-R 16	4 - 7	16,3 (-0,2)	19 / 22	42,0	8,0	1,0 - 4,0	50
53112880	CLICK-R 20	5 - 10	20,3 (-0,2)	25 / 27	45,5	8,0	1,0 - 4,0	25
53112881	CLICK-R 25	6 - 13	25,3 (-0,2)	30 / 34	48,5	8,0	1,0 - 4,0	25
53112928	CLICK-R 32	7 - 15	32,3 (-0,2)	36 / 40	55,0	8,0	1,0 - 4,0	25
SKINTOP® CLICK-R black								
53112929	CLICK-R 12	1 - 5	12,3 (-0,2)	15 / 18	40,0	8,0	1,0 - 4,0	50
53112885	CLICK-R 16	4 - 7	16,3 (-0,2)	19 / 22	42,0	8,0	1,0 - 4,0	50
53112886	CLICK-R 20	5 - 10	20,3 (-0,2)	25 / 27	45,5	8,0	1,0 - 4,0	25
53112887	CLICK-R 25	6 - 13	25,3 (-0,2)	30 / 34	48,5	8,0	1,0 - 4,0	25
53112931	CLICK-R 32	7 - 15	32,3 (-0,2)	36 / 40	55,0	8,0	1,0 - 4,0	25



**New**

SKINTOP® MS-SC-M BRUSH

**Info**

- SKINTOP® MS-SC-M BRUSH 7x1.5 to 110x2 with innovative double lamella gasket for easier assembling of cables with large diameters.

Benefits

- Faster, easier screen contact
- Optimal low-resistance 360° screen contact
- Faster than any other comparable system
- Uncomplicated and reliable
- Maximum assembly and adjustment possibility

Application range

- For EMC compliant earthing of the copper braiding and copper shaft sheath.
- Automotive systems
- Conveyor technology
- High power drives
- Frequency converters

Approvals (Norm references)**Product Make-up**

- Metric connection thread acc. to EN 50262

Note

- For painted, anodised or powdered-coated housings, you will require our EMC counter nut SKINDICHT® SM-PE-M for best contact

Technical data**Caution**

Installation dimensions and tightening torques see T12

**Approvals**

VDE approval for sizes M90x2 to 100x2 pending

**Material**

Body: nickel plated brass
Insert: polyamide
Seal: special elastomer
O-ring: special elastomer

**Degree of protection**

IP 68 - 5 bar

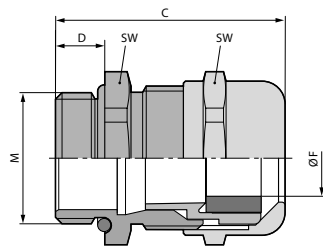
**Range of temperature**

dynamic: -30°C up to +100°C

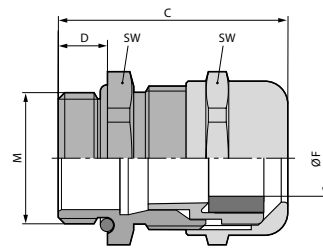
Part number	Part designation / size	Outer-Ø mm from - to	Minimum Ø above braiding in mm	SW mm	Thread length D mm	Pieces / PU
SKINTOP® MS-SC-M BRUSH						
53112676	25 x 1,5	9.0-17.0	6.0	29	8.0	10
53112677	32 x 1,5	11.0-21.0	2.0	36	9.0	1
53112678	40 x 1,5	19.0-28.0	15.0	45	9.0	1
53112679	50 x 1,5	27.0-35.0	20.0	54	10.0	1
53112680	63 x 1,5	34.0-45.0	25.0	67	15.0	1
53112681	63 x 1,5 plus	44.0-55.0	30.0	75	15.0	1
53112501	75 x 1,5	53.0-63.0	40.0	95	15.0	1
53112500	75 x 1,5 plus	58.0-68.0	40.0	95	15.0	1
53112503	90 x 2	66.0-78.0	45.0	115	20.0	1
53112505	100 x 2	76.0-88.0	55.0	135	25.0	1
53112504	100 x 2 plus	86.0-98.0	55.0	135	25.0	1



SKINTOP® MS-M-XL / SKINTOP® MSR-M-XL



SKINTOP® MS-M-XL



SKINTOP® MSR-M-XL

Benefits

SKINTOP® MS-M-XL

- Especially for thick walls
- Maximum reliability
- Optimal strain relief
- Large, variable clamping ranges

SKINTOP® MSR-M-XL

- Benefits see 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 (Norm references)



Product Make-up

- Metric connection thread acc. to EN 50262

Note

- Counter nut to be used SKINDICHT® SM-M
- For suitable accessories see SKINTOP® metric accessories

Technical data



Caution

Installation dimensions and tightening torques see T12



Material

SKINTOP® MS-M-XL

Body: Nickel plated brass
Insert: Polyamide
Seal: CR
O-ring: NBR

SKINTOP® MSR-M-XL

Body: Nickel plated brass
Insert: Polyamide
Seal: CR
O-ring: NBR



Degree of protection

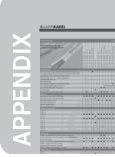
IP 68 - 5 bar

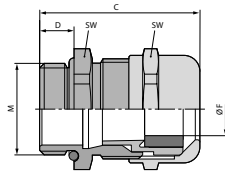


Range of temperature

-30°C up to +100°C

Part number	Part 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



**New****SKINTOP® MS-M / SKINTOP® MSR-M**

SKINTOP® MS-M

SKINTOP® MSR-M

Benefits**SKINTOP® MS-M**

- Maximum reliability
- Optimal strain relief
- Large, variable clamping ranges
- For cable diameters up to 68 mm

SKINTOP® MSR-M

- Benefits see SKINTOP® MS-M

Application range**SKINTOP® MS-M**

- In areas with high demands on special mechanical and chemical stability.
- Chemical industry
- Measurement and control technology
- Machine and apparatus construction

- Plant engineering and construction

SKINTOP® MSR-M

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

Approvals (Norm references)**Product Make-up**

- Metric connection thread acc. to EN 50262

Note

- Counter nut to be used SKINDICHT® SM-M
- For suitable accessories see SKINTOP® metric accessories

**Info**

- SKINTOP® MS-M 75x1,5 with innovative double lamella gasket for easier assembling of cables with large diameters.

Technical data

Caution
Installation dimensions and tightening torques see T12

**Approvals**

UL, CSA, DNV approval for size M75x1,5 pending

**Material**

Body: Nickel plated brass
Insert: Polyamide
Seal: CR
O-ring: NBR

**Degree of protection**

IP 68 10 bar
IP 69 K pending

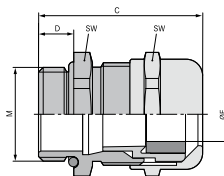
**Range of temperature**

-30°C up to +100°C

Part number	Part designation / size	Clamping range ØF mm	SW mm	Overall length C mm	Thread length D mm	Pieces / PU
SKINTOP® MS-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
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



SKINTOP® MS-M ATEX / SKINTOP® MSR-M ATEX


SKINTOP® MS-M ATEX

SKINTOP® MSR-M ATEX

■ Benefits

SKINTOP® MS-M ATEX

- Dynamic strain stability
- High strain relief
- Large, variable clamping ranges

SKINTOP® MSR-M ATEX

- Benefits see SKINTOP® MS-M ATEX

■ Application range

SKINTOP® MS-M ATEX

- Devices, machines of type of protection enhanced safety "e".
- Equipment Group II / Category 2G+1D
- Mobile offshore and marine applications
- Chemical and petrochemical industry

SKINTOP® MSR-M ATEX

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

■ Product features

SKINTOP® MS-M ATEX

- **SKINTOP® MS-M-XL ATEX** is similar to the SKINTOP® MS-M ATEX, but has an extended connection thread for thick walls

■ Approvals (Norm references)



■ Product Make-up

- Metric connection thread acc. to EN 50262

■ Note

SKINTOP® MS-M ATEX

- For suitable accessories, see SKINTOP® SDV-M ATEX

SKINTOP® MSR-M ATEX

- For suitable accessories, see SKINTOP® SDVR-M ATEX

■ Technical data



Caution

Installation dimensions and tightening torques see instruction leaflet



Note

more economical due to fewer varieties in stock



Material

Body: Nickel plated brass

Insert: Polyamide

Seal: CR

O-ring: NBR

Tests

DIN EN 60079-0

DIN EN 60079-7



Degree of protection

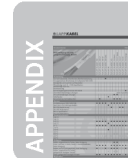
IP 68 - 10 bar



Range of temperature

-30°C up to +90°C

Part number	Part designation / size	Clamping range ØF mm	SW mm	Overall length C mm	Thread length D mm	Pieces / PU
SKINTOP® MS-M ATEX						
53112700	12 x 1,5	3 - 7	16	26.5	6.5	100
53112710	16 x 1,5	4.5 - 10	20	33.0	7.0	100
53112720	20 x 1,5	7 - 13	24	37.0	8.0	50
53112730	25 x 1,5	9 - 17	29	38.5	8.0	25
53112740	32 x 1,5	11 - 21	36	45.5	9.0	25
53112750	40 x 1,5	19 - 28	45	48.0	9.0	10
53112760	50 x 1,5	26 - 35	54	55.5	10.0	5
53112770	63 x 1,5	34 - 45	67	67.0	15.0	5
53112779	63 x 1,5 plus	44 - 55	75	65.5	15.0	1
SKINTOP® MS-XL-M ATEX						
53112800	12 x 1,5	3 - 7	16	32.8	12.0	100
53112810	16 x 1,5	4.5 - 10	20	37.0	12.0	100
53112820	20 x 1,5	7 - 13	24	39.5	12.0	50
53112830	25 x 1,5	9 - 17	29	41.5	12.0	25
53112840	32 x 1,5	11 - 21	36	48.2	15.0	25
53112850	40 x 1,5	19 - 28	45	53.5	15.0	10
53112860	50 x 1,5	26 - 35	54	57.5	15.0	5
SKINTOP® MSR-M ATEX						
53112705	12 x 1,5	2 - 5	16	26.5	6.5	100
53112715	16 x 1,5	4 - 7	20	33.0	7.0	100
53112725	20 x 1,5	5 - 10	24	37.0	8.0	50
53112735	25 x 1,5	6 - 13	29	38.5	8.0	25
53112745	32 x 1,5	7 - 15	36	45.5	9.0	25
53112755	40 x 1,5	16 - 23	45	48.0	9.0	10
53112765	50 x 1,5	19 - 29	54	55.5	10.0	5
53112775	63 x 1,5	32 - 39	67	67.0	15.0	5

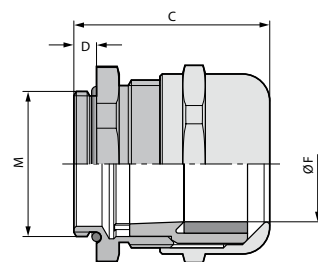


SKINTOP® cable glands nickel plated brass metric

SKINTOP® for industrial connector



SKINTOP® MS-IS-M



SKINTOP® MS-IS-M

■ Benefits

- Short connection thread for more space inside the industrial connectors
- Optimal strain relief
- Large, variable clamping ranges

■ Application range

- Specially designed for use on industrial connectors.

■ Approvals (Norm references)



■ Product Make-up

- Metric connection thread acc. to EN 50262

■ Note

- Suitable multiple seal inserts please see to SKINTOP® DIX PG 21 (25x1,5) and DIX PG 29 (32x1,5)

■ Technical data

**Caution**

Installation dimensions and tightening torques see T12

**Material**

Body: Nickel plated brass
Insert: Polyamide
Seal: CR
O-ring: NBR

**Degree of protection**

IP 68 - 5 bar

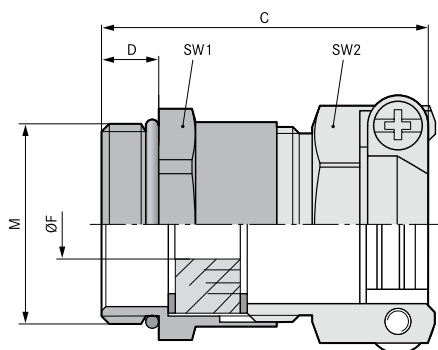
**Range of temperature**

-30°C up to +100°C

Part number	Part designation / size	Clamping range ØF mm	SW mm	Overall length C mm	Thread length D mm	Pieces / PU
SKINTOP® MS-IS-M						
53112780	25 x 1,5	11-18	30	37,0	5,0	25
53112790	32 x 1,5	16-25	40	43,0	5,0	25



SKINDICHT® SKZ-M


SKINDICHT® SKZ-M

Benefits

- The incised sealing ring can be adjusted to clamp several cable diameters
- High strain relief
- High mechanic stability

Application range

- Saddle clamp strain relief gland for raw applications.
- Building sites
- Plant engineering and construction
- Drives

Approvals (Norm references)



Product Make-up

- Metric connection thread acc. to EN 50262

Note

- SKINDICHT® SHZ-M-XL is similar to the SKINDICHT® SHZ-M, but has an extended connection thread for thick walls
- Counter nut to be used SKINDICHT® SM-M
- For additional accessories see SKINDICHT® EV

Technical data



Caution
Installation dimensions
see T12



on request
Available with Viton® incised ring and Viton® O-ring



Material
Body: Nickel plated brass
Incised sealing ring: CR/NBR
O-ring: NBR



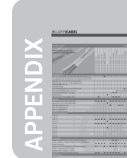
Degree of protection
IP 55



Range of temperature
-20°C up to +80°C

Part number	Part designation / size	ØF mm	Max. fitting size for installation in mm	Function thread PG	SW1 / SW2 mm	Overall length C mm	Thread length D mm	Pieces / PU
SKINDICHT® SKZ-M								
52106800	16 x 1,5	5.0 - 8.0	24	9	18 / 17	29.0	5.0	50
52106810	20 x 1,5	7.0 - 12.0	27	11	22 / 20	30.0	6.0	50
52106820	20 x 1,5	11.0 - 13.0	30	13.5	22 / 22	33.5	6.0	25
52106830	20 x 1,5	13.0 - 15.0	33	16	24 / 24	34.5	6.0	25
52106840	25 x 1,5	16.0 - 19.3	42	21	30 / 30	41.0	7.0	25
52106850	32 x 1,5	19.0 - 27.0	58	29	40 / 41	46.0	8.0	10
SKINDICHT® SKZ-M-XL								
52106805	16 x 1,5	5.0 - 8.0	24	9	18 / 17	34.0	10.0	50
52106815	20 x 1,5	7.0 - 12.0	27	11	22 / 20	34.0	10.0	50
52106825	20 x 1,5	11.0 - 13.0	30	13.5	22 / 22	37.5	10.0	25
52106835	20 x 1,5	13.0 - 15.0	33	16	24 / 24	38.5	10.0	25
52106845	25 x 1,5	16.0 - 19.3	42	21	30 / 30	45.0	11.0	25
52106855	32 x 1,5	19.0 - 27.0	58	29	40 / 41	51.0	13.0	10

Viton® is a registered trademark of DuPont de Nemours

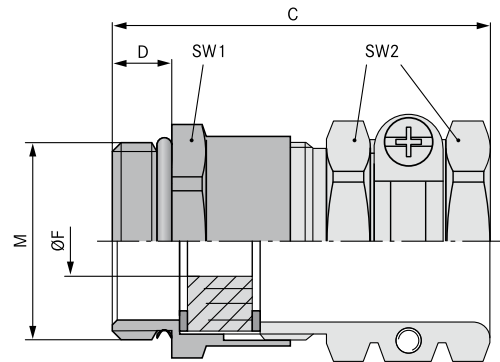




SKINDICHT® SHZ-M



SKINDICHT® SHZ-M



■ Benefits

- The incised sealing ring can be adjusted to clamp several cable diameters
- High strain relief
- Robust
- For cables with large outer diameters

■ Application range

- Compact brass cable gland for reliable strain relief, solid, for large cable diameters.

■ Approvals (Norm references)



■ Product Make-up

- Metric connection thread acc. to EN 50262

■ Note

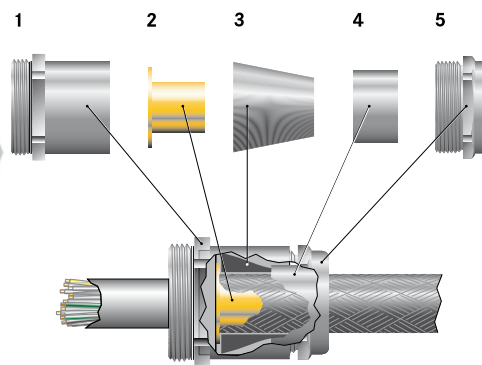
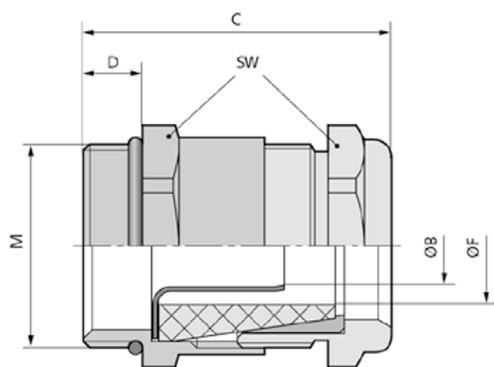
- SKINDICHT® SHZ-M-XL is similar to the SKINDICHT® SHZ-M, but has an extended connection thread for thick walls
- For additional accessories see SKINDICHT® EV
- Counter nut to be used SKINDICHT® SM-M

■ Technical data

	Caution Installation dimensions see T12
	on request Available with Viton® incised ring and Viton® O-ring
	Material Body: Nickel plated brass Seal: CR/NBR O-ring: NBR
	Degree of protection IP 55
	Range of temperature -20°C up to +80°C

Part number	Part designation / size	ØF mm	Max. fitting size for installation in mm	Function thread PG	SW1 / SW2 mm	Overall length C mm	Thread length D mm	Pieces / PU
SKINDICHT® SHZ-M								
52106700	12 x 1,5	5,5 - 6,5	21	7	14 / 15	30,0	5,0	50
52106710	16 x 1,5	5,0 - 8,0	25	9	18 / 17	33,0	5,0	50
52106720	20 x 1,5	8,0 - 12,0	28	11	22 / 20	35,0	6,0	25
52106730	20 x 1,5	8,5 - 13,0	32	13,5	22 / 22	39,5	6,0	25
52106740	20 x 1,5	8,0 - 15,0	35	16	24 / 24	41,5	6,0	25
52106750	25 x 1,5	14,0 - 19,3	46	21	30 / 30	47,0	7,0	25
52106760	32 x 1,5	19,0 - 27,0	58	29	40 / 41	53,0	8,0	10
52106770	40 x 1,5	27,0 - 34,0	70	36	50 / 50	60,0	8,0	10
52106780	50 x 1,5	35,0 - 43,0	78	42	57 / 57	65,0	9,0	5
52106790	63 x 1,5	40,0 - 47,5	86	48	66 / 64	68,0	10,0	5
SKINDICHT® SHZ-M-XL								
52106705	12 x 1,5	5,5 - 6,5	21	7	14 / 15	35,0	10,0	50
52106715	16 x 1,5	5,0 - 8,0	25	9	18 / 17	38,0	10,0	50
52106725	20 x 1,5	8,0 - 12,0	28	11	22 / 20	39,0	10,0	25
52106735	20 x 1,5	8,5 - 13,0	32	13,5	22 / 22	43,5	10,0	25
52106745	20 x 1,5	8,0 - 15,0	35	16	24 / 24	45,5	10,0	25
52106755	25 x 1,5	14,0 - 19,3	46	21	30 / 30	51,0	11,0	25
52106765	32 x 1,5	19,0 - 27,0	58	29	40 / 41	58,0	13,0	10
52106775	40 x 1,5	27,0 - 34,0	70	36	50 / 50	67,0	13,0	10
52106785	50 x 1,5	35,0 - 43,0	78	42	57 / 57	70,0	14,0	5
52106795	63 x 1,5	40,0 - 47,5	86	48	66 / 64	73,0	14,0	5

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SKINDICHT® SHVE-M

Benefits

- Optimal low-resistance 360° screen contact
- Degree of protection
- High strain relief

Application range

- Brass gland for earthing, for applications where electrical interference fields may occur.
- Medical engineering
- Frequency converters
- Airports
- Measurement and control technology

Product features

- The allocation to the cable is made
- 1 fitting
- 2 earth sleeve
- 3 sealing cone

Approvals (Norm references)



Product Make-up

- 1 fitting
- 2 earth sleeve
- 3 sealing cone
- 4 cone brass
- 5 compression screw

Note

- Counter nut to be used SKINDICHT® SM-M
- For painted, anodised or powdered-coated housings, you will require our EMC counter nut SKINDICHT® SM-PE-M for best contact
- For further EMC cable glands, see SKINTOP® MS-SC-M and MS-SC-M BRUSH, suitable counter nut SKINDICHT® SM-PE-M

Technical data



Caution

Installation dimensions see T12



Material

Body: Nickel plated brass
Earthing sleeve: Bright brass
Cone seal: CR/NBR
O-ring: NBR



Degree of protection

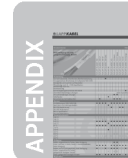
IP 68 - 10 bar



Range of temperature

-20°C up to +80°C

Part number	Part designation / size	Function thread PG	Outer sheath clamping range ØF mm	Inner sheath clamping range mm	SW1 / SW2 mm	Overall length C mm	Thread length D mm	Clear opening EH ØB	Clear opening F mm	Pieces / PU
SKINDICHT® SHVE-M										
52106860	16 x 1,5	9.0	4,5 - 5,8	2,2 - 3,11	18 / 17	26,5	5,0	3,2	6	25
52106870	16 x 1,5	9.0	4,5 - 6,8	2,2 - 3,23	18 / 17	26,5	5,0	3,2	7	25
52106880	16 x 1,5	9.0	5,5 - 5,8	2,6 - 3,17	18 / 17	26,5	5,0	3,6	6	25
52106890	16 x 1,5	9.0	5,5 - 6,8	2,6 - 3,67	18 / 17	26,5	5,0	3,6	7	25
52106910	20 x 1,5	11.0	3,00 - 6,8	3,5 - 4,52	22 / 20	31,0	6,0	4,5	7	25
52106920	20 x 1,5	11.0	6,00 - 8,8	3,5 - 4,45	22 / 20	31,0	6,0	4,5	9	25
52106930	20 x 1,5	13.5	6,5 - 8,8	3,5 - 5,00	22 / 22	32,0	6,0	5,0	9	25
52106940	20 x 1,5	13.5	6,00 - 8,8	4,5 - 5,95	22 / 22	32,0	6,0	6,0	9	25
52106950	20 x 1,5	13.5	8,00 - 10,8	5,5 - 6,92	22 / 22	32,0	6,0	7,0	11	25
52106960	20 x 1,5	16.0	8,5 - 10,8	6,00 - 7,93	24 / 24	34,5	6,0	8,0	11	25
52106970	20 x 1,5	16.0	10,00 - 12,8	7,00 - 9,00	24 / 24	34,5	6,0	9,0	13	25
52106980	20 x 1,5	16.0	10,00 - 12,8	8,00 - 10,00	24 / 24	34,5	6,0	10,0	13	25
52106990	20 x 1,5	16.0	12,5 - 14,8	9,00 - 11,03	24 / 24	34,5	6,0	11,0	15	25
52107000	25 x 1,5	21.0	13,00 - 15,8	10,00 - 12,15	30 / 30	39,0	7,0	12,0	16	25
52107010	25 x 1,5	21.0	13,00 - 15,8	11,00 - 13,00	30 / 30	39,0	7,0	13,0	16	25
52107020	25 x 1,5	21.0	15,5 - 17,8	12,00 - 14,00	30 / 30	39,0	7,0	14,0	18	25
52107030	25 x 1,5	21.0	15,00 - 17,8	13,00 - 15,00	30 / 30	39,0	7,0	15,0	18	25
52107040	25 x 1,5	21.0	17,5 - 19,8	14,00 - 16,00	30 / 30	39,0	7,0	16,0	20	25
52107050	32 x 1,5	29.0	19,00 - 21,8	15,00 - 17,02	40 / 40	45,5	8,0	17,0	22	10
52107060	32 x 1,5	29.0	18,00 - 23,8	16,00 - 18,00	40 / 40	45,5	8,0	18,0	22	10
52107070	32 x 1,5	29.0	20,00 - 23,8	17,00 - 19,00	40 / 40	45,5	8,0	19,0	24	10
52107080	32 x 1,5	29.0	23,00 - 25,8	17,00 - 19,00	40 / 40	45,5	8,0	19,0	26	10





SKINTOP® GMP-GL-M



SKINTOP® GMP-GL-M

■ Benefits

- Glas fibre reinforced for maximum mechanical stability
- Bearing surface avoids scratchings on the housing while mounting with an wrench

■ Application range

- For locking of SKINTOP® cable glands in boreholes without thread.

■ Approvals (Norm references)



■ Product Make-up

- Metric connection thread acc. to EN 50262

■ Note

- UL approval only when used with the UL approved SKINTOP® polyamide cable glands
- Designed for use in connection with metric SKINTOP® cable glands

■ Technical data



on request

Available without collar
(without surface for assembling tool)



Colour delivered

RAL 7001 silver-grey
RAL 7035 light grey
RAL 9005 black / UV resistant



Material

Polyamide, glass fibre reinforced



Range of temperature

static: -40°C up to +100°C
dynamic: -20°C up to +100°C

Part number	Part designation / size	SW mm	Pieces / PU
SKINTOP® GMP-GL-M silver-grey			
53119000	12 x 1,5	17	100
53119010	16 x 1,5	22	100
53119020	20 x 1,5	27	100
53119030	25 x 1,5	34	100
53119040	32 x 1,5	41	100
53119050	40 x 1,5	50	25
53119060	50 x 1,5	60	25
53119070	63 x 1,5	75	25
SKINTOP® GMP-GL-M black			
53119100	12 x 1,5	17	100
53119110	16 x 1,5	22	100
53119120	20 x 1,5	27	100
53119130	25 x 1,5	34	100
53119140	32 x 1,5	41	100
53119150	40 x 1,5	50	25
53119160	50 x 1,5	60	25
53119170	63 x 1,5	75	25
SKINTOP® GMP-GL-M light grey			
53119003	12 x 1,5	17	100
53119013	16 x 1,5	22	100
53119023	20 x 1,5	27	100
53119033	25 x 1,5	34	100
53119043	32 x 1,5	41	100
53119053	40 x 1,5	50	25
53119063	50 x 1,5	60	25
53119073	63 x 1,5	75	25


New

SKINDICHT® SM-M



SKINDICHT® SM-M

■ Application range

- Needed wherever a gland has to be countered or thin walled housings only allow through holes.

■ Approvals (Norm references)



■ Product Make-up

- Metric connection thread acc. to EN 50262

■ Technical data


Material
nickel plated brass

Part number	Part 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	75	95.0	5

New

SKINDICHT® SM-PE-M



SKINDICHT® SM-PE-M

■ Benefits

- Cutting edges cut through the insulating layer, thus guaranteeing an optimum EMC contact
- Suitable for metric glands used in earthing and EMC applications

■ Approvals (Norm references)



■ Product Make-up

- Metric connection thread acc. to EN 50262

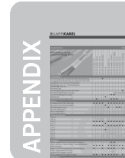
■ Technical data


Material
nickel plated brass

■ Application range

- For lacquered, anodised and powder coated housings.

Part number	Part 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	75	95.0	5



SKINDICHT® cable gland accessories metric

SKINDICHT® sealing rings / incised seal



SKINDICHT® O-Ring Viton® metric



■ Application range

- For safe sealing of housing. Protection against oils, acids, chemicals and water on the connection thread of a gland or similar parts under extreme conditions.

■ Approvals (Norm references)



■ Technical data

RAL	Colour delivered
	green
	Material
	FKM
	Range of temperature
	-20°C up to +200°C

Part number	Part designation / size	Inner Ø in mm	Cable thickness mm	Pieces / PU
SKINDICHT® O-ring Viton® metric				
52122000	OV M 12 x 2,0	9.0	2.0	100
52122001	OV M 12 x 1,5	9.0	1.5	100
52122010	OV M 16 x 2,0	13.0	2.0	100
52122020	OV M 20 x 2,0	17.0	2.0	100
52122021	OV M 20 x 1,5	17.0	1.5	100
52122030	OV M 25 x 2,0	22.0	2.0	100
52122040	OV M 32 x 2,0	28.0	2.0	50
52122050	OV M 40 x 2,0	36.0	2.0	50
52122060	OV M 50 x 2,0	46.0	2.0	25
52122070	OV M 63 x 2,0	57.0	2.0	25

Viton® is a registered trademark of DuPont de Nemours

SKINDICHT® JT PTFE metric



■ Benefits

- Resistant to oil, water, alkaline solutions, acids, solvents, etc.
- For use with foodstuffs

■ Application range

- PTFE sealing disks for SKINTOP® and SKINDICHT® cable glands

■ Approvals (Norm references)



■ Technical data

RAL	Colour delivered
	white
	Material
	PTFE
	Range of temperature
	-120°C up to +250°C short term up to +300°C

Part number	Part designation / size	Inner Ø in mm	Thickness mm	Outer Ø mm	Pieces / PU
SKINDICHT® JT PTFE					
53801030	JT M 12	12.1	2.0	16.6	100
53801040	JT M 16	16.1	2.0	21.1	100
53801050	JT M 20	20.1	2.0	27.5	100
53801060	JT M 25	25.1	3.0	33.4	50
53801070	JT M 32	32.1	3.0	40.3	50
53801080	JT M 40	40.2	3.0	51.5	25
53801090	JT M 50	50.2	3.0	61.6	25
53801100	JT M 63	63.2	3.0	73.9	25

Benefits

- One seal for several clamping ranges
- Rings can be individually adapted to various cable diameters

Application range

- Incised sealing ring for SKINDICHT® cable glands

Approvals (Norm references)



Technical data

	Colour delivered black
	Material CR
	Range of temperature -20°C up to +80°C

SKINDICHT® E-M



Part number	Part designation / size	Outer-Ø x holes mm	Thickness mm	Pieces / PU
SKINDICHT® E-M				
52100620	E-M 12	10.00 x 5	5.0	250
52100621	E-M 16	13.80 x 3/6/9	5.5	250
52100622	E-M 20	17.60 x 4/7/10/13	6.0	250
52100623	E-M 25	22.60 x 8,5/11,5/14,5/17,5	7.5	100
52100624	E-M 32	29.60 x 16/19/22/25	9.5	100
52100625	E-M 40	37.60 x 23/26/29/32	12.0	50
52100626	E-M 50	47.60 x 30/33/36/39	14.0	50
52100627	E-M 63	60.60 x 36/39/42/45	14.0	50

SKINDICHT® O-Ring Perbunan® metric

Application range

- For safe sealing of housing against oil, dust and water. For connection thread of a gland or similar parts.

Approvals (Norm references)



Technical data

	Colour delivered black
	Material NBR
	Ozone- and UV-resistant
	Range of temperature -30°C up to + 100°C



Note

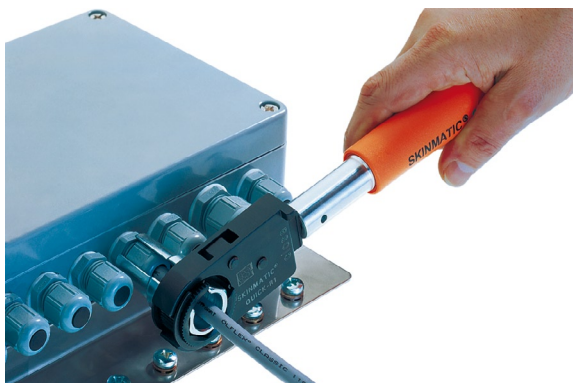
- For optimum sealing of the converter SKINDICHT® ZSE-M12/16/20 x 1.5, we recommend our O-rings with thickness 1.5 mm.

Part number	Part designation / size	Inner Ø in mm	Cable thickness mm	Pieces / PU
SKINDICHT® O-ring Perbunan®				
53102000	O M 12 x 2,0	9.0	2.0	100
53102001	O M 12 x 1,5	9.0	1.5	100
53102010	O M 16 x 2,0	13.0	2.0	100
53102020	O M 20 x 2,0	17.0	2.0	100
53102021	O M 20 x 1,5	17.0	1.5	100
53102030	O M 25 x 2,0	22.0	2.0	100
53102040	O M 32 x 2,0	28.0	2.0	50
53102050	O M 40 x 2,0	36.0	2.0	50
53102060	O M 50 x 2,0	46.0	2.0	25
53102070	O M 63 x 2,0	57.0	2.0	25

Perbunan® is a registered trademark of BAYER AG



SKINMATIC® QUICK Set 1



SKINMATIC® QUICK Set 1

■ Benefits

- 4 sizes (M12, 16, 20, 25), only one tool
- Optimal at high packing density, easy installation in very tight spaces
- Easy and safe handling using open ratchet system
- Enormous time and cost saving

■ Application range

- Efficient assembly ratchet set for SKINTOP® polyamide cable glands.

■ Product features

- Made of high quality tool steel

- Including packing in handy strong ratchet box
- 1x R1 - ratchet
- 1x V1 - extension
- 4x open nut for wrench size (SW) 15, 19, 25, 30, suitable for ratchet head R1

Part number	Part designation / size	Width across flats mm	Pieces / PU
SKINMATIC® QUICK SET 1			
61610000	QUICK SET 1	15, 19, 25, 30	1

No subject to RoHS directive

SKINMATIC® MH Set



SKINMATIC® MH Set

■ Benefits

- Bearing surface of the tool is shaped in a way that prevents the hexagonal nut from slipping
- Ensures quick, safe and damage-free assembling

■ Application range

- Special tools designed for SKINTOP® brass types MS-M, MS-SC-M, MS-NPT

■ Product features

- Assembling-set manufactured from chromium plated tool steel
- The SKINMATIC® MH set consists of three special keys:
 - SW 16/20 mm (M12/M16)
 - SW 24/29 mm (M20/M25)
 - SW 36/45 mm (M32/M40)

Part number	Width across flats mm	Overall length in mm	PU pieces (set)
SKINMATIC® MH-Set			
61791273	16/20, 24/29, 36/45	20 / 22 / 25	1

No subject to RoHS directive

SILVYN® AS	122
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SILVYN®

Protective cable conduit-
and cable carrier systems

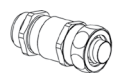




SILVYN® AS



SILVYN® AS



SILVYN® MSK-M

SILVYN®
US/US-M + US-AS
IP 40

SILVYN® US-AS



SILVYN® US MS-DR

Benefits

- Tensile strength
- Highly compression proofed
- Flexible
- For higher mechanical stress
- Heat resistant

Application range

- Machine builder
- Plant engineering and construction
- Outdoor
- Applications with mechanical stress

Product features

- In EX-area according to VDE 0165 DIN EN 50281-1-2

Approvals (Norm references)



- DIN 49012, fits to design K according to EN 50086-2-3

Product Make-up

- Spirally wound metal protective conduit with roughenged profile

Note

- PU=10 m (on request)

Technical data



Material

Cold strip DC Ø3 in accordance to EN 10139, zinc plated Fe/Zn3



Range of temperature

Up to +220 °C

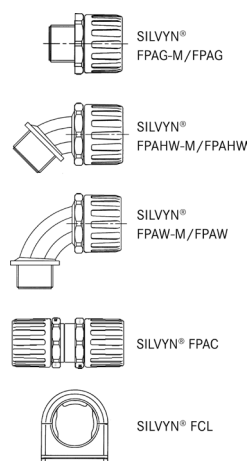
Part number	PG size	Internal Ø x External Ø in mm	Bending radius mm	Suitable for SILVYN® MSK-M	Suitable for SILVYN® US-M	Suitable for SILVYN® US/US-EDU-AS/US MS-DR	PU ring in m
SILVYN® AS							
61802080	7	8.0 x 10.0	28	12 x 1,5	10 x 1,0	7	50
61802090	9	11.0 x 14.0	34	16 x 1,5	12 x 1,5	9	50
61802100	11	14.0 x 17.0	40	20 x 1,5	16 x 1,5	11	50
61802110	13.5	16.0 x 19.0	45			13,5	50
61802120	16	18.0 x 21.0	50	25 x 1,5	20 x 1,5	16	50
61802130	21	23.0 x 27.0	63	32 x 1,5	25 x 1,5	21	50
61802140	29	31.0 x 36.0	85	40 x 1,5	32 x 1,5	29	25
61802150	36	40.0 x 45.0	100	50 x 1,5	40 x 1,5	36	25
61802170	48	51.0 x 56.0	125	63 x 1,5	50 x 1,5	48	25

Comparable products

- SILVYN® EDU-AS



SILVYN® FPAS



SILVYN® FPAS

Benefits

- Dimensionally stable
- Flexible
- Flame-retardant and self-extinguishing in acc. with UL94 V2
- Highly compression proofed
- Impact-proof

Application range

- Machine builder
- Plant engineering and construction
- Railway applications / vehicle construction
- Flexible application
- Outdoors application

Product features

- Halogene und cadmium free
- Abrasion resistant
- Increased resistance against oil, petrol, acids and other chemicals

Approvals (Norm references)



- UNDERGROUND

Product Make-up

- Fine profil corrugated polyamide 6 conduit

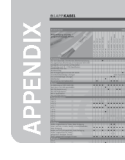
Note

- UV- and weather resistant

Technical data

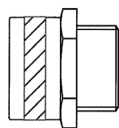
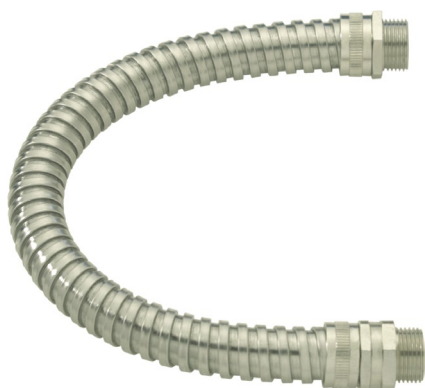
RAL	Colour delivered black, UV-resistant
	Material PA 6 Halogen-free
	Range of temperature -40 °C up to +120 °C static -20 °C up to +100 °C dynamic

Part number	Article designation	Internal Ø x External Ø in mm	Bending radius mm	PU ring in m
SILVYN® FPAS black				
61754005	10	6.3 x 10.0	15	50
61754015	13	9.8 x 13.0	25	50
61754025	16	11.8 x 15.8	40	50
61754275	18	14.2 x 18.5	40	50
61754035	21	16.7 x 21.2	45	50
61754045	28	22.8 x 28.5	50	50
61754055	34	28.1 x 34.5	60	25
61754065	42	35.5 x 42.5	70	25
61754075	54	47.2 x 54.5	80	25
61754305	67	56.3 x 67.2	130	10

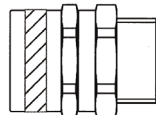




SILVYN® SSUE



SILVYN® LGEF-M



SILVYN® LGES-M

SILVYN® SSUE

■ Benefits

- Tensile strength
- Corrosion resistant
- Flexible
- For heavy mechanical stress
- Heat resistant

■ Application range

- Off shore applications
- Measuring technology
- Plant engineering and construction
- Outdoor
- Applications with mechanical stress

■ Product features

- Stainless steel AISI316

■ Approvals (Norm references)



- UNDERGROUND

■ Product Make-up

- Spirally wound stainless steel protective conduit with roughenged profile

■ Note

- Sizes 10.12 with double-linked

■ Technical data



Approvals

Rail:
UNDERGROUND
Link-up



Note

Sizes 10, 12 with
double-linked



Material

Stainless steel AISI 316



Degree of protection

IP 40



Range of temperature

-100°C bis +400°C

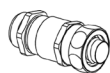
Part number	Article designation	Internal Ø x External Ø in mm	Bending radius mm	Suitable for SILVYN® LGEF-M/LGES-M	PU ring in m
SILVYN® SSUE					
61804600	10	6.8 x 9.0	25	M 12 x 1,5	25
61804601	12	10.2 x 13.0	30	M 16 x 1,5/1	25
61804602	16	13.0 x 16.0	40	M 16 x 1,5/2	25
61804603	20	16.9 x 20.5	45	M 20 x 1,5/1	25
61804604	25	21.1 x 25.0	55	M 25 x 1,5	25
61804605	32	28.1 x 32.0	70	M 32 x 1,5	25

■ Comparable products

- SILVYN® UI 511



SILVYN® EDU-AS



SILVYN® MSK-M


 SILVYN®
US/US-M + US-EDU-AS
IP 40


SILVYN® US-EDU-AS



SILVYN® US MS-DR

SILVYN® EDU-AS

SILVYN® EDU-AS

Benefits

- Protection against hot chipz
- Tensile strength
- Highly compression proofed
- Flexible
- For heavy mechanical stress

Application range

- Machine builder
- Plant engineering and construction
- Outdoor
- Everywhere where cables and wires could be damaged by welding sparkles or hot chipz
- Applications with mechanical stress

Product features

- In EX-area according to VDE 0165 DIN EN 50281-1-2

Approvals (Norm references)



- DIN 49012, fits to design K according to EN 50086-2-3

Product Make-up

- Spirally wound metal protective conduit with roughenged profile
- Galvanised steel wire braiding

Note

- PU= 10 m (on request)

Technical data



Material

Cold strip DC Ø3 in accordance to EN 10139, zinc plated Fe/Zn3

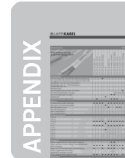
Braiding: Zinc plated steel wire



Range of temperature

Up to +220 °C

Part number	PG size	Internal Ø x External Ø in mm	Bending radius mm	Suitable for SILVYN® MSK-M	Suitable for SILVYN® US-M	Suitable for SILVYN® US/US-EDU-AS/US MS-DR	PU ring in m
SILVYN® EDU-AS							
61802380	7	7.0 x 10.0	28	12 x 1,5	10 x 1,0	7	50
61802390	9	10.0 x 14.0	34	16 x 1,5	12 x 1,5	9	50
61802400	11	13.0 x 17.0	40	20 x 1,5	16 x 1,5	11	50
61802410	13.5	15.0 x 19.0	45			13,5	50
61802420	16	17.0 x 21.0	50	25 x 1,5	20 x 1,5	16	50
61802430	21	22.0 x 27.0	63	32 x 1,5	25 x 1,5	21	50
61802440	29	29.0 x 36.0	85	40 x 1,5	32 x 1,5	29	25
61802450	36	38.0 x 45.0	100	50 x 1,5	40 x 1,5	36	25
61802470	48	49.0 x 56.0	135	63 x 1,5	50 x 1,5	48	25





SILVYN® UI 511



Benefits

- Tensile strength
- Corrosion resistant
- Highly flexible
- For heavy mechanical stress
- Heat resistant

Application range

- Off shore applications
- Measuring technology
- Plant engineering and construction
- Steel industry
- Applications with highest mechanical stress

Product features

- Stainless steel AISI304

Approvals (Norm references)



Product Make-up

- Spirally wound stainless steel protective conduit with interlocked profile (AGRAFF)

Suitable conduits

- SILVYN® SSUE



Info

- Double linked
- For highest mechanical requirements

Technical data



Note

Size 2" not stocked !



Material

Stainless steel AISI 304
DW No. 1.4301



Degree of protection

IP40



Range of temperature

-100° C up to +600 °C

Part number	Article designation	Static/dynamic bending radius mm	Outer Ø mm	Min. internal Ø	PU m
SILVYN® UI 511					
61799815	5/16"	50.0/60.0	12.5	9.5	30
61799816	3/8"	65.0/80.0	16.5	13.0	30
61799817	1/2"	75.0/100.0	20.3	17.0	30
61799818	3/4"	90.0/125.0	25.3	22.0	30
61799819	1"	120.0/160.0	31.0	25.8	30
61799820	1 1/4"	175.0/220.0	39.5	34.2	30
61799822	2"	285.0/340.0	58.0	52.0	15





Benefits

- Fast and easy mounting
- All purpose

Application range

- Plant engineering and construction
- Railway applications
- Automotive industry
- Mounting clamp for cables, conduits and pipes

Technical data



Material

Steel, galvanised
Polychloroprene



Range of temperature

-35 °C up to +100 °C

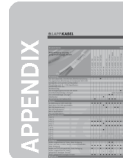
SILVYN® RKS



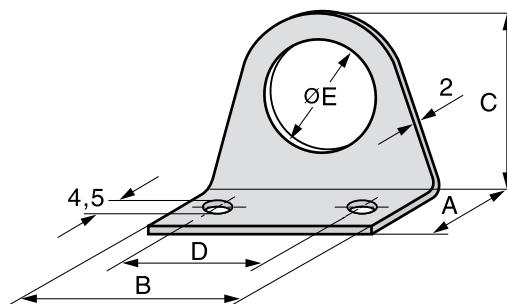
Approvals (Norm references)



Part number	Article designation	Metal width in mm	Width x thickness rubber profile mm	Diameter in mm	Hole-Ø mm	Support length mm	Pieces / PU
SILVYN® RKS 1							
61825170	6 / 12	12.0	15 x 1,2	6.0	5,3 (M5)	16.0	100
61825180	8 / 12	12.0	15 x 1,2	8.0	5,3 (M5)	17.0	100
61825190	10 / 12	12.0	15 x 1,2	10.0	5,3 (M5)	18.0	100
61825200	12 / 12	12.0	15 x 1,2	12.0	5,3 (M5)	19.0	100
61825210	13 / 15	15.0	18,5 x 1,5	13.0	6,4 (M6)	23.7	100
61825355	14 / 15	15.0	18,5 x 1,5	14.0	6,4 (M6)	24.2	100
61825365	15 / 15	15.0	18,5 x 1,5	15.0	6,4 (M6)	24.7	100
61825375	16 / 15	15.0	18,5 x 1,5	16.0	6,4 (M6)	25.2	100
61825040	18 / 15	15.0	18,5 x 1,5	18.0	6,4 (M6)	26.2	100
61825052	19 / 15	15.0	18,5 x 1,5	19.0	6,4 (M6)	26.7	100
61825380	20 / 15	15.0	18,5 x 1,5	20.0	6,4 (M6)	27.2	100
61825382	21 / 15	15.0	18,5 x 1,5	21.0	6,4 (M6)	27.7	100
61825050	22 / 15	15.0	18,5 x 1,5	22.0	6,4 (M6)	28.2	100
61825390	23 / 15	15.0	18,5 x 1,5	23.0	6,4 (M6)	28.7	100
61825392	24 / 20	20.0	25 x 1,5	24.0	8,4 (M8)	35.0	100
61825400	25 / 15	15.0	18,5 x 1,5	25.0	6,4 (M6)	29.7	100
61825402	26 / 15	15.0	18,5 x 1,5	26.0	6,4 (M6)	30.2	100
61825250	28 / 15	15.0	18,5 x 1,5	28.0	6,4 (M6)	31.2	100
61825255	30 / 15	15.0	18,5 x 1,5	30.0	6,4 (M6)	32.2	100
61825257	32 / 15	15.0	18,5 x 1,5	32.0	6,4 (M6)	33.2	100
61825259	34 / 15	15.0	18,5 x 1,5	34.0	6,4 (M6)	34.2	100
61825260	35 / 15	15.0	18,5 x 1,5	35.0	6,4 (M6)	34.7	100
61825262	36 / 20	20.0	25 x 1,5	36.0	8,4 (M8)	41.0	100
61825264	38 / 20	20.0	25 x 1,5	38.0	8,4 (M8)	42.0	100
61825295	40 / 20	20.0	25 x 1,5	40.0	8,4 (M8)	43.0	100



SILVYN® BW-M



SILVYN® BW-M

■ Benefits

- Safeing space

- Everywhere where SILVYN® protective conduits can not inserted into a machine or appliance

■ Technical data



Material

Steel, passivated

■ Application range

- Machine builder
- Plant engineering and construction
- Switch cabinet building

■ Product Make-up

- Steel fixing bracket
- 2x bore hole for fixation

Part number	Article designation	A mm	B in mm	Overall length C mm	D mm	E mm	Pieces / PU
SILVYN® BW-M							
55000531	16	20.0	50.0	33.2	40.0	17.0	25
55000541	20	20.0	50.0	38.0	40.0	21.0	25
55000551	25	20.0	60.0	46.9	50.0	26.0	25
55000561	32	20.0	70.0	56.9	60.0	33.0	25
55000571	40	20.0	80.0	67.0	70.0	41.0	25
55000572	50	20.0	90.0	78.4	80.0	51.0	25

FLEXIMARK® MARK FCC-FK Shrink tube marking	130
FLEXIMARK® Stainless steel-Box starter-Set	131
FLEXIMARK® NM Stainless steel-character holders	131
FLEXIMARK® ZT Stainless steel-character holders	132
FLEXIMARK® LD Steel cable tie	132
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Stainless steel-character strips Sets	133
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FLEXIMARK®

Cable marking products



SHRINK MARK FCC-FK Shrink tube marking



Benefits

- The shrinking tube segments are individually printed to customer specifications.
- Simple marking

Application range

- Cable and component marking system
- Automotive industry
- Machine and plant construction, Light & Sound

Approvals (Norm references)



Design

- Customized data are transmitted via ASCII File or Excel File to the responsible Lapp employee by e-mail for the order.

Scope of delivery

- Delivery time
- Approx. 1 week



Info

- Printing service in all colours by ink-jet or print-technology of your choice.

Technical data



Material
Polyolefine
Shrinking ratio
2:1



Range of temperature
-55°C up to +125°C

Part number	Article designation	Colour	Ø before shrinking, mm	Ø after shrinking, mm	Number of characters	Pieces / PU
61754301	SHRINK MARK FCC-FK 3,2	black	3.2	1.6	1-7	1
61754311	SHRINK MARK FCC-FK 3,2	black	3.2	1.6	8-12	1
61754321	SHRINK MARK FCC-FK 3,2	black	3.2	1.6	13-17	1
61754331	SHRINK MARK FCC-FK 4,8	black	4.8	2.4	1-7	1
61754341	SHRINK MARK FCC-FK 4,8	black	4.8	2.4	8-12	1
61754351	SHRINK MARK FCC-FK 4,8	black	4.8	2.4	13-17	1
61754361	SHRINK MARK FCC-FK 6,4	black	6.4	3.2	1-7	1
61754371	SHRINK MARK FCC-FK 6,4	black	6.4	3.2	8-12	1
61754381	SHRINK MARK FCC-FK 6,4	black	6.4	3.2	13-17	1
61754391	SHRINK MARK FCC-FK 9,5	black	9.5	4.7	1-7	1
61754401	SHRINK MARK FCC-FK 9,5	black	9.5	4.7	8-12	1
61754411	SHRINK MARK FCC-FK 9,5	black	9.5	4.7	13-17	1
61754421	SHRINK MARK FCC-FK 12,7	black	12.7	6.3	1-7	1
61754431	SHRINK MARK FCC-FK 12,7	black	12.7	6.3	8-12	1
61754441	SHRINK MARK FCC-FK 12,7	black	12.7	6.3	13-17	1
61754451	SHRINK MARK FCC-FK 19,1	black	19.1	9.5	1-7	1
61754461	SHRINK MARK FCC-FK 19,1	black	19.1	9.5	8-12	1
61754471	SHRINK MARK FCC-FK 19,1	black	19.1	9.5	13-17	1



Stainless steel - Box Starter - Set

■ Benefits

- The basic equipment of the FLEXIMARK® stainless steel system in the handy box

■ Approvals (Norm references)



■ Scope of delivery

- With special round pliers
- 1920 single characters (40 pieces each available in the characters A-Z, numbers 0-9, various symbols and blank strips)
- Five character holders with lengths of 286, 106, 82, 58 and 46 mm



Part number	Article designation	PU
83254220	Stainless steel box	1
61789671	Stainless steel box with pliers	1

■ Accessories

- MR Stainless steel - character holders see page 789

NM Stainless steel - character holders

■ Benefits

- Cable and component marking system

■ Application range

- Outdoor applications

■ Product features

- Holder for up to 46 characters
- Character holder with counter-sunk fastener for steel cable ties and screw hole
- In five different sizes

■ Approvals (Norm references)

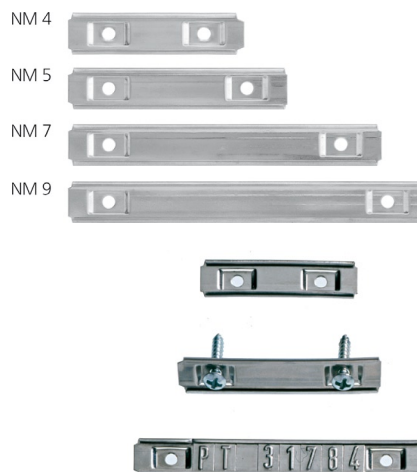


■ Design

- Screws and rivets (up to max. 3 mm Ø)
- Steel cable ties AE 601 up to 7 mm width
- Steel cable ties LS up to 7 mm width

■ Technical data

Info	
Height approx. 11 mm	
Screw hole Ø: 3 mm	
Material	
Stainless steel, acid resistant SS 2348	
Range of temperature	
Max. temperature: +500 °C	



Part number	Article designation	Length in mm	Characters / strip	Pieces / PU
83254214	Character holder NM 4	46.0	4	50
83254213	Character holder NM 5	58.0	8	50
83254212	Character holder NM 7	82.0	12	50
83254211	Character holder NM 9	106.0	16	50
83254210	Character holder NM 24	286.0	46	50

■ Accessories

- LD Steel cable tie
- LS steel cable ties



ZT Stainless steel - character holders



Benefits

- Holder for up to 42 characters
- Character holder with hole profile

Product features

- Shorten character holder at one end only (e.g. with wire cutters), as otherwise the character strips can no longer be inserted.
- After the character strips have been inserted, the edges are pressed together with pliers so that they do not slip out.

Approvals (Norm references)



Technical data



Info

Height approx. 11 mm
Screw hole Ø: 3 mm



Material

Acid resistant stainless steel SS 2348



Range of temperature

Max. temperature: +500 °C

Part number	Article designation	Length in mm	Number of characters	Pieces / PU
83254101	Character holder ZT	286.0	42	50

LD Steel cable tie



Application range

- Profile tie for fastening (width 7 mm) the NM stainless steel character holders

Approvals (Norm references)



suitable tools

- STEEL GUN HT-338 cable tie pliers see page 889

Part number	Article designation	Length x Width mm	Bundling-Ø, mm	Minimum tensile strength in N/mm²	Pieces / PU
61789736	YLD-7-150-B	152.0 x 7.0	48.0	1,120.0	100

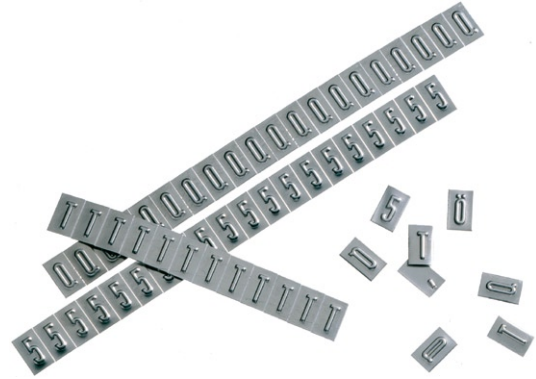
Further sizes on request.

Accessories

- NM Stainless steel - character holders



MR Stainless steel - character holders / Stainless steel - character



MR Stainless steel - character holders

■ Benefits

- The character strips are pushed either into the stainless steel character holders NM or into the character holder ZT (20 pre-stamped single characters per character strip) for assembly

■ Application range

Stainless steel - character strips Set

- Plant engineering and construction

■ Approvals (Norm references)



■ Design

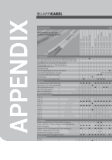
MR Stainless steel - character holders

- MR stainless steel character strips are also available with Cyrillic characters on request.

■ Technical data

- General**
MR Stainless steel - character holders
Height x width: approx. 9.5 x 6 mm
Character height: approx. 6.8 mm
- Material**
MR Stainless steel - character holders
Stainless steel, acid resistant SS 2348
- Range of temperature**
MR Stainless steel - character holders
Max. temperature: +500 °C

Part number	Article designation	Characters / strip	Strips per PU	PU
numbers				
83254179	Character strip MR 1	20	10	1
83254180	Character strip MR 2	20	10	1
83254181	Character strip MR 3	20	10	1
83254182	Character strip MR 4	20	10	1
83254183	Character strip MR 5	20	10	1
83254184	Character strip MR 6	20	10	1
83254185	Character strip MR 7	20	10	1
83254186	Character strip MR 8	20	10	1
letters				
83254150	Character strip MR A	20	10	1
83254151	Character strip MR B	20	10	1
83254152	Character strip MR C	20	10	1
83254153	Character strip MR D	20	10	1
83254154	Character strip MR E	20	10	1
83254155	Character strip MR F	20	10	1
83254156	Character strip MR G	20	10	1
83254157	Character strip MR H	20	10	1
83254158	Character strip MR I	20	10	1
83254159	Character strip MR J	20	10	1
83254160	Character strip MR K	20	10	1
83254161	Character strip MR L	20	10	1
83254162	Character strip MR M	20	10	1
83254163	Character strip MR N	20	10	1
83254164	Character strip MR O	20	10	1
83254165	Character strip MR P	20	10	1
83254166	Character strip MR Q	20	10	1
83254167	Character strip MR R	20	10	1
83254168	Character strip MR S	20	10	1
83254169	Character strip MR T	20	10	1
83254170	Character strip MR U	20	10	1
83254171	Character strip MR V	20	10	1
83254172	Character strip MR W	20	10	1
83254173	Character strip MR X	20	10	1
83254174	Character strip MR Y	20	10	1
83254175	Character strip MR Z	20	10	1
83254177	Character strip MR Ä	20	10	1
83254178	Character strip MR Ö	20	10	1
83254201	Character strip MR Ü	20	10	1
symbols				
83254192	Character strip MR +	20	10	1
83254191	Character strip MR -	20	10	1
83254194	Character strip MR /	20	10	1
83254195	Character strip MR .	20	10	1
83254199	Character strip MR :	20	10	1
83254198	Character strip MR ¶	20	10	1
83254193	Character strip MR =	20	10	1
83254200	Character strip MR earth	20	10	1
83254196	Character strip MR ,	20	10	1
83254202	Character strip MR (	20	10	1
blank				
83254189	Character strip MR blanko	20	10	1
83254122	123-Set	20	10	1
83254120	ABC-Set	20	26	1





Stainless steel F.C.C.



Stainless steel F.C.C.

■ Benefits

- Customized stainless steel cable labelling
- Signplates are sorted prior to delivery
- No time-consuming preparation and installation

■ Design

- Type A
- For fastening with cable ties (LS) up to a width of 7 mm
- Also available fabricated with cable tie (LxW = 200x4.6)

■ Technical data

- General**
☒ Character size: (height and width): 4.5 x 3.25 mm
 Marker size: 10/ 14 mm height
- Material**
☒ Acid resistant stainless steel SS 2348
- Range of temperature**
☒ Max. temperature: +500 °C

■ Approvals (Norm references)



■ suitable tools

- STEEL GUN HT-338 cable tie pliers

■ Product Make-up

- Order process
- Customized data are transmitted via ASCII File or Excel File to the responsible Lapp employee by e-mail for the order.

Part number	Article designation	Height mm	Equipment	Number of characters	Pieces / PU
One line embossing / with cable tie brackets					
83251406	Stainless steel type A 10/FSBT (0-15)	10.0	with cable tie	0-15	1
83251456	Stainless steel type A 10/ FSBT (16-25)	10.0	with cable tie	16-25	1
83251402	Stainless steel type A 10 (0-15)	10.0	without cable tie	0-15	1
83251454	Stainless steel type A 10 (16-25)	10.0	without cable tie	16-25	1
One line embossing / screw holes					
83251450	Stainless steel type B 10 (0-15)	10.0	with screw hole	0-15	1
83251478	Stainless steel type B 10 (16-25)	10.0	with screw hole	16-25	1
Two line embossing / with cable tie brackets					
83251426	Stainless steel type A 14/FSBT (0-15)	14.0	with cable tie	0-15	1
83251468	Stainless steel type A 14/ FSBT (16-25)	14.0	with cable tie	16-25	1
83251422	Stainless steel type A 14 (0-15)	14.0	without cable tie	0-15	1
83251466	Stainless steel type A 14 (16-25)	14.0	without cable tie	16-25	1
Two line embossing / screw holes					
83251451	Stainless steel type B 14 (0-15)	14.0	with screw hole	0-15	1
83251479	Stainless steel type B 14 (16-25)	14.0	with screw hole	16-25	1

Further types on request

■ Accessories

- LS steel cable ties

KT 2 cable shears	136
KS 20 cable shears	136
Cable shears KT 4 and KT 5	136
Model 4 and 6 cable shears	137
Model 27 cable shears	137
MODEL 2 cable shears	137
DSK 150 cable shears	137
FC Strip stripping tool	138
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LS steel cable ties	140
BASIC cable tie pliers	141
STEEL GUN HT-338 cable tie pliers	141

CABLE ACCESSORIES



Cutting, Stripping, Skinning

Cutting tools for large diameters

KT 2 cable shears



■ Benefits

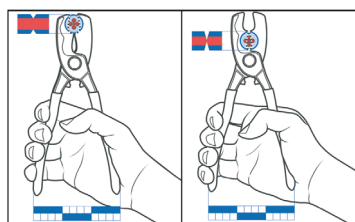
- Extremely robust due to cutting edges made of hardened steel

■ Application range

- Suitable for copper and aluminium conductors with up to 20 mm outside diameter

Part number	Type	for outer diameter mm	Weight kg	Length in mm	Pieces / PU
61735970	KT 2	20	0.300	200	1

KS 20 cable shears



KS 20 cable shears



■ Benefits

- Adjustable screw joint
- Easy, clean cut when operating with one hand
- Low force due to favourable transmission ratio and new blade geometry

■ Application range

- Cuts copper and aluminium cables up to 20 mm outer diameter
- Cutting with precision grinding

■ Product features

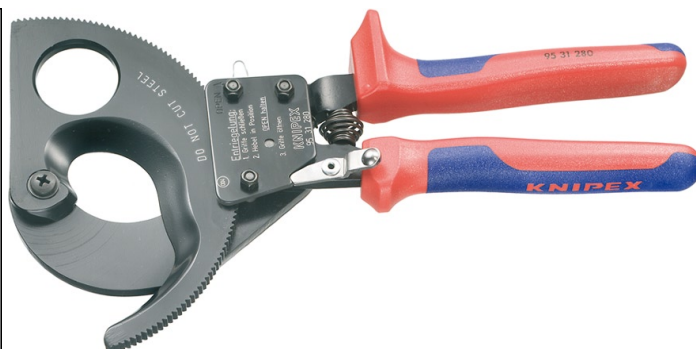
- Material: Special tool steel, forged, head burnished
- Pre and after cut (1st and 2nd blade) allows cables with an external outer diameter up to 20 mm to be cut
- Not suitable for steel wire and hard-extruded copper wire

Part number	Type	for outer diameter mm	Weight kg	Length in mm	Pieces / PU
62120045	KS 20	20	0.300	200	1

Cable shears KT 4 and KT 5



Cable shears KT 4 and KT 5



■ Benefits

- Trouble free cutting with lightweight and optimum transmission ratio
- One-hand operation through ratchet principle
- Less power required due to wave-like polished blades

■ Application range

- Not suitable for steel wire / hard aluminium alloys / hard drawn copper conductors

- The swivel knife can be unlocked in any cutting position with a press of the thumb
- Cuts smooth and clean without squeezing

■ Product features

- Optimal leverage due to 2-way gear rim drive

■ Note

- Also suitable for peeling

Part number	Type	for outer diameter mm	Weight kg	Length in mm	Pieces / PU
61813750	KT 4	32	0.545	250	1
61813760	Spare blade KT 4		-	-	1
61813770	KT 5	52	0.740	280	1
61813775	Spare blade KT 5		-	-	1

Model 4 and 6 cable shears

Benefits

- Maximum stability at minimum weight
- Adjustable ball screw

Application range

- Cable shears with optimum leverage

Product features

- Fluoropolymer-coated knives
- Face-ground knives made of heat-treated Cr-V steel

Approvals (Norm references)

- GS tested safety tools
- All insulated shears tested in accordance with IEC 900 to 1000 V

Technical data



General

CU-Al cable up to max. outer diameter 35 mm
 Cutting performance: approx. 500 mm² (Cu-Al)



Part number	Type	for outer diameter mm	Weight kg	Length in mm	Pieces / PU
62120090	MODEL 4	35	1.400	530	1
62120360	Spare cutting head MODELL 4	-	-	-	1
62120100	MODEL 6	50	2.700	780	1
62120370	Spare cutting head MODELL 6	-	-	-	1

Each part separately interchangeable.

Benefits

- Slim weight
- Easy and clean cutting thanks to new cutting edge geometry

Product features

- Cutting head forged
- Short construction
- Shank made of tempered tubular steel



Part number	Type	for outer diameter mm	Weight kg	Length in mm	Pieces / PU
62120055	MODEL 27	27	1.010	500	1

Benefits

- Improved transmission through the link in the shear head
- No squeezing or deformation of inner conductors due to semicircular blades
- Exchangeable cutting heads

Application range

- Suitable for continuous operation on the construction site
- Cable shears with optimum leverage for Cu-Al cables

Part number	Type	for outer diameter mm	Weight kg	Length in mm	Pieces / PU
62120060	MODEL 2	38	4.200	930	1
62120080	Spare cutting head MODELL 2	-	-	-	1

Benefits

- Removable blade head
- Lightweight with excellent cutting capacity due to aluminium blade with optimum leverage

Application range

- For copper and aluminium cables, wire ropes and round steel,
- Also suitable for separating overhead lines with strain relief

Product features

- Angular cutting peaks enable separation of single ropes

Technical data



Approvals

Insulated for operation under a voltage up to 1000 V in accordance with VDE standard

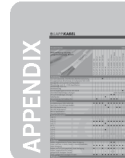


Material

Material: head made from special tool steel, blade made from aluminium



Part number	Type	for outer diameter mm	Weight kg	Length in mm	Pieces / PU
62120000	DSK 150	14	2.240	600	1
62120005	Spare blade head DSK 150	-	-	-	1



FC Strip stripping tool



■ Benefits

- Fast: Ready to connect stripping - outer sheath and copper screening braid are stripped in one work step. This saves time
- Safe: No cable damage
- The adjusting screws enable the tool to be adjusted for all Fast Connect cables.

■ Application range

- Stripping of Fast Connect conductors in one step using the dual-level stripping tool.
- Suitable for outer diameter from 2,5 up to 8,0mm

■ Design

- The knives have defined distances so that the outer sheath and the screen braid are stripped cleanly in one step.
- This helps prevent damage to the cable resulting from poor stripping.

■ Suitable cables

- UNITRONIC® BUS HFFR L2/FIP FC UL/CSA

Part number	Type	suitable for:	Pieces / PU
21124030	FC Strip incl. cartridge	Fast Connect cables	1
21124040	FC Strip without knife cartridge		1
21124041	FC Strip knife cartridge		1

COAXIAL stripping tool



■ Application range

- For simple and fast stripping of all common coaxial cables, e.g. TV aerial cables 4.0 - 7.5 mm²
- Score the outer sheath using blade A, turn to the left and right, then remove.
- Strip back screening and cut into the inner insulation with blade B, turn to right and left, then pull off.

■ Approvals (Norm references)



■ Design

- Loosen catch, open sheath stripper and insert cable to the desired length (inside scale 5-20mm).

■ Suitable cables

- Coaxial cables

■ Technical data



Caution

Longer service life and improved sliding behaviour of the blades due to titanium-nitride coating



Note

Integrated length scale from 5-20 mm
TÜV / GS tested



Use/application

For fast, precise stripping of all common coaxial cables, e.g. TV antenna cables 4.8-7.5mm²; RG 58 / RG 59; PVC round cables 3x0.75 mm²



Specifications

New ergonomic design and tool closing technique

Optimum positioning of the blades for removing the outer sheath and exposing the inner cores

Perfect blade accuracy, thus 100% data transmission

Part number	Type	for outer diameter mm	Weight kg	Pieces / PU
61735860	COAXIAL Stripping tool	4.8 - 7.5	0.0021	1

AS-I STRIP special stripping tool



■ Benefits

- Automatic setting of blades
- No damage to single cores

■ Application range

- For TPE, rubber and PUR cables

■ Product features

- The pliers body is made of fibre glass reinforced polyamide and lives up to the highest expectations.
- The special shape of the cable is reflected in the blades

■ Suitable cables

- UNITRONIC® BUS ASI

Part number	Type	suitable for:	Stripping of	Length in mm	Weight kg	Pieces / PU
61735831	AS-I STRIP special	AS-Interface	TPE, rubber, PUR	160	0.12	1

SMARTSTRIP stripping tool

Benefits

- Steplessly adjustable cutting depth by setting screw which enables the stripping of multi-stage insulated cables of different sheath thicknesses
- Self-tightening handle guides the knife cleanly on the cable

- For fast, simple stripping of different insulation materials (especially PUR) up to 10 mm outer diameter

Design

- After cutting, pull back the knife and only then remove the cable from the tool



Application range

- Special stripping tool for data cables
- The infinitely adjustable stripping tool for round cables made of various insulation materials

Part number	Type	for outer diameter mm	Length in mm	Weight kg	Pieces / PU
61744180	Smartstrip	max. 10.0	100	0.036	1

DATA STRIP stripping tool



DATA STRIP stripping tool

Benefits

- Robust: Made from a new, pressure-proof nylon DATA STRIP was tested for 50,000 stripping operations
- Precise: Exactly adjustable and reproducible results by setting wheel with 9 positions
- User-friendly: Simple pressing together of the tool opens the stripping shaft for inserting the cable. Turn the tool, remove the insulation, and pull the cut-off cable sheathing from the tool.
- Flexible: strips most multi-core cables and glass fibre cables with a diameter of up to 11 mm

- Precision stripping tool for stripping signal, telephone, AV, control and data transmission cables made up of copper and glass fibres.

Design

- Due to the unique building design, simply pressing together the tool is sufficient to insert the cable easily.
- The tool is equipped with an adjustment wheel with 9 positions for adjusting the blade height and guarantees precise and reproducible stripping results.
- The position "x" on the wheel enables the tool to close in order to eject an attached blade cartridge and to be able to replace it with a new one quickly and safely.

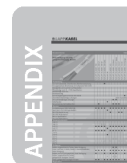
Technical data

☒	General
☒	Insulation thickness: up to 1 mm
☒	Diameter in
☒	For outer diameter: 2.5-11mm
☒	Weight
☒	28 g
☒	Length
☒	Dimension: L 90,5 x W 39,5 x H 19 mm

Application range

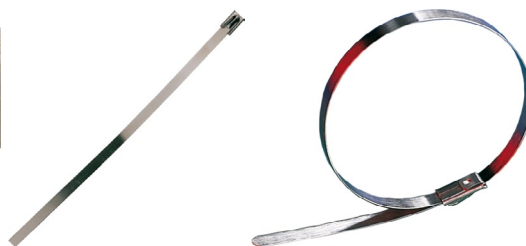
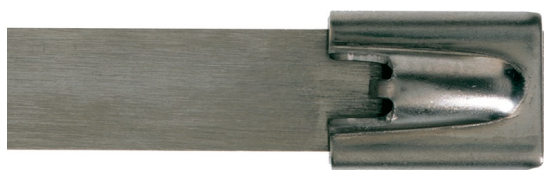
- Special stripping tool for data cables

Part number	Type	for outer diameter mm	Weight kg	Pieces / PU
61735810	DATA STRIP	2.5 - 11.0	0.028	1
61735811	DATA STRIP spare blade			1





LS steel cable ties



LS steel cable ties

Benefits

- The flattened binder heads means a minimum of space required.
- These stainless steel cable ties are self-locking. Time consuming folding and crimping are no longer required.
- The steel ball enclosed in the end of the tie makes it easy to thread it in.
- If pulled in the opposite direction to re-open or loosen the tie, the ball is pressed into the restriction at the end of the tie and re-opening is impossible.

Application range

- LS one piece steel cable ties can be used outdoors and under extreme conditions, e.g. high corrosion risk.

- LS steel cable ties with width 7.9 mm are suitable for fixing NM FLEXIMARK® stainless steel labelling character carriers.

Approvals (Norm references)



Design

- Steel cable ties

Suitable tools

- STEEL GUN HT-338 cable tie pliers

Technical data

	General
	Widths: 4.6 and 7.9 mm
	Lengths: 200 to 1016 mm
	Approvals
	DNV 2397
	Note
	Bundling diameter: up to 305 mm
	Material
	Stainless steel AISI 316
	Range of temperature
	-80°C up to +539°C

Part number	Part description	Length x Width mm	Bundling-Ø, mm	Minimum tensile strength in N/mm²	Pieces / PU
61812950	LS 4.6 - 200 B	200.0 x 4.6	51.0	45.3	100
61812960	LS 4.6 - 360 B	360.0 x 4.6	102.0	45.3	100
61812970	LS 4.6 - 520 B	520.0 x 4.6	152.0	45.3	100
61812980	LS 4.6 - 680 B	679.0 x 4.6	203.0	45.3	100
61812990	LS 4.6 - 840 B	838.0 x 4.6	254.0	45.3	100
61813000	LS 7.9 - 200 B	200.0 x 7.9	51.0	113.3	100
61813010	LS 7.9 - 360 B	360.0 x 7.9	102.0	113.3	100
61813020	LS 7.9 - 520 B	520.0 x 7.9	152.0	113.3	100
61813030	LS 7.9 - 680 A	679.0 x 7.9	203.0	113.3	100
61813040	LS 7.9 - 840 B	838.0 x 7.9	254.0	113.3	100
61813050	LS 7.9 - 1010 A	1,016.0 x 7.9	305.0	113.3	100

Accessories

- Stainless steel - Box Starter - Set
- Stainless steel F.C.C.

■ Benefits

- The tightening force can be adapted gradually.
- The pliers are a low-cost starter product.

■ Application range

- For plastic cable ties
- For tightening and cutting cable ties.

BASIC cable tie pliers



Part number	Part description	for cable ties	Cable tie width, mm	LxH, mm	Weight g	PU
62120321	BASIC - cable tie pliers	Plastic	2.2 - 4.8	160 x 130	0.3	1

■ Accessories

- Basic Tie cable tie

■ Benefits

- The cable tie is automatically cut at the end once the set tension is achieved.
- Sharp edges are avoided.
- Handy processing tool for stainless steel ties.

- The stripping force can be adjusted in increments.

■ Application range

- For stainless steel cable ties

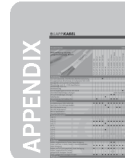
STEEL GUN HT-338 cable tie pliers



Part number	Part description	for cable ties	Max. cable tie width, mm	LxH, mm	Weight g	Pieces / PU
83250022	STEEL GUN HT-338	Stainless steel	7.9	178 x 140	0.5	1

■ Accessories

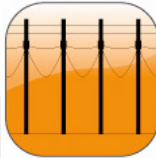
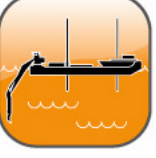
- LS steel cable ties





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APPENDIX

APPLICATIONS		CABLE DESIGNATION													
		ÖLFLEX® CRANE NSHTÖU	ÖLFLEX® CRANE VS (N)SHTÖU	ÖLFLEX® CRANE PUR	ÖLFLEX® CRANE	ÖLFLEX® LIFT	ÖLFLEX® LIFT T	ÖLFLEX® LIFT S	ÖLFLEX® CRANE F	ÖLFLEX® LIFT F	ÖLFLEX® AQUA RN8	ÖLFLEX® MINE GC	ÖLFLEX® MINE	ÖLFLEX® MINE E	ÖLFLEX® MINE F
Fixed installations e.g. festoons, conveyor belt, power line		✓			✓				✓	✓					✓
Mono spiral reels		✓	○	✓								✓	✓	✓	
Cylindrical reels		✓	✓	✓								✓	✓	✓	
Pumps										✓					
Elevator/lifts						✓	✓	✓	✓	✓					
Dragline/Shovels trailing operation												✓	✓	✓	
Dredgers												✓	✓	✓	
Power chains		○	○	✓	○										

Note: ✓ - Main application, ○ - Suitable application

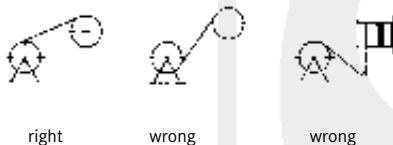
■ PROFIBUS-(UNITRONIC® BUS L2/FIP) and Industrial Ethernet Cables (ETHERLINE®)

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> • Only use cables which are designed for a particular application (stationary application, flexible or highly flexible application, torsion stress, festoon systems, outdoor use, direct burial). They have a special cable design and are tested accordingly. • PROFINET differentiates cables between Type A (stationary application, solid conductor), Type B (flexible application, e. g. 7-wire stranded conductor) and Type C (highly flexible application, e. g. 19-wire stranded conductor). Generally PROFINET has a cross section AWG22. • It is advisable to separate cables for different cable categories (network voltage cables, auxiliary power supply, data cables and sensitive cables for measurements) in individual bundles. • Power supply cables and data cables should be positioned at a minimum distance of 10cm resp. a metallic separator has to be mounted or data cables should be inserted in a metallic tube. If possible a separate cable tray should be used. • Cross two cables always right-angled (90°). • Ground screenings of all cables going into a cabinet at the entry of the cabinet. • For cabling outside buildings we recommend the use of Fibre Optic Cables. Only use approved cables for outdoor use. Pay attention to warning signs (power cables, gas pipes). • Place redundant cables in principle on separate cable routes to avoid a damage at the same time. • Protect copper and fibre optic cables outside of cable trays by inserting them in plastic tubes (in case of strong mechanical stress use metallic tubes). | <ul style="list-style-type: none"> • Replace damaged cables immediately. • Note the temperature range of cables. Deviations from these temperatures may lead to a lower mechanical and electrical load resp. lead to a damage. • Tensile strength data cables are exposed to (Copper and Fibre Optic cables) must not exceed the permitted maximum. Otherwise transmission characteristics can not be guaranteed any more. A strain relief should be installed. • Applications with torsion stress require a special cable design. The same applies to power chain and festoon cables. They are not interchangeable. • Adhere to the minimum bending radii stated in Data Sheets and Catalogue. Under-running the minimal bending radius may result in a damage of the cable. Or may lead to a failure of the system. • Avoid forming loops and avoid pulling the cable over sharp edges. • Realise a concept for grounding and equipotential bonding when installing copper cables and differentiate between hazardous (Ex) and non-hazardous areas. • Electrical, magnetic and electromagnetic fields affect signal transmission and possibly interfere electronic components. Today "Electromagnetic Compatibility" (EMC) is a basic requirement when installing systems. Therefore all metallic parts of a plant should be included in the grounding and equipotential bonding concept. Only use screened cables and connectors, alternatively Fibre optic Cables and FO connectors which are insensitive against electromagnetic interferences. | <ul style="list-style-type: none"> • Recommendation: A detailed "Planning and Installation Guide" for PROFIBUS and/or PROFINET may be ordered at PROFIBUS International Support Center (PNO), Karlsruhe/Germany. <p>Internet: www.profibus.com
Email: info@profibus.com</p> |
|--|--|---|



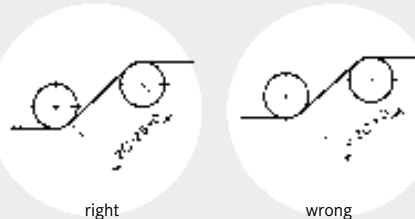
ÖLFLEX® CRANE NSHTÖU, ÖLFLEX® CRANE VS (N)SHTÖU, ÖLFLEX® CRANE PUR

1. The delivery drum should be transported right to the installation site where possible. Avoid rolling the drum itself. If the drum cannot be mounted directly on the plant or equipment, the cable should be unreeled with the aid of idler pulleys and using a drag rope and cable stocking.
2. During unreeling, the cable must be taken only from revolving drums and only from the top, at the same time ensuring that tension is maintained and that the cable is neither deflected nor dragged over sharp edges.
3. Before installation the cable must be laid out and stretched. If this is not possible it is essential to keep the distance between the delivery drum and the equipment drum as long as possible, avoiding S-bends or other deflections when the cable is laid in position.



4. The cable must be reeled on the equipment drum without any twists. It is equally important to avoid twisting when connecting and fastening to the infeed.
5. If the infeed point is passed over during operation it will be necessary to use a compensating pulley of appropriate diameter carrying 1-2 cable windings. If the infeed is underground below the surface it will be necessary to provide an infeed hopper guide above the compensating pulley.
6. It is essential to use generously proportioned clamps, (length $\geq 4 \times D$), for fastening the cable at the end of the roadway, in order to prevent crushing. The length of cable left unreeled before the fastening point must be at least $40 \times D$ but it is advisable to use a compensating pulley here also.

7. At least two coils must remain on the equipment drum when the cable has been run out.
8. For cables with an outside diameter of up to 21.5 mm the inner bending diameter should not be less than 10 times, and above that figure 12.5 times the cable diameter. When used in power chains the inner bending radius of cables with an outside diameter of up to 21.5 mm may not exceed 5 times the cable diameter, in the case of greater diameters 6.25 times. With ÖLFLEX® CRANE VS the inner bending diameter must generally be at least 15 times the cable diameter. With ÖLFLEX® CRANE PUR the inner bending diameter should not be less than 15 times the cable diameter.
9. S-bends in the cable must be avoided. However if this proves impossible in the case of cables with an outside diameter of up to 21.5 mm, the center spacing of the two idlers must be at least 20 times, and for those above 21.5 mm at least 25 times the cable diameter.



10. The permissible reeling speed may be up to $v = 2 \text{ m/sec}$ at an acceleration of up to $a = 0.4 \text{ m/sec}^2$.
11. The static continuous tensile stress should not exceed 15 N/mm^2 of the total copper cross-section and the dynamic peak tensile stress may not exceed 25 N/mm^2 .
12. The actual current rating in continuous duty is governed by
 - the conductor cross-section
 - the ambient temperature
 - the amount of cable reeled on the drum

The maximum permissible strain imposed on the installed cable is obtained from the following formula:

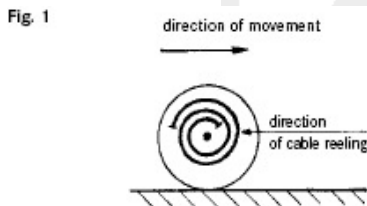
$$I = I_{\max} \times f_1 \times f_2$$

13. The cables fulfil the requirements of VDE 0250. Further stress will limit the lifetime.

■ Lift Control Cables Type ÖLFLEX® Lift, ÖLFLEX® Lift T, ÖLFLEX® Lift S

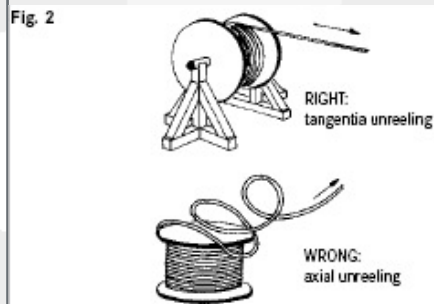
A General Notes

1. Cables installation should be done twist-free and at temperatures not below 5 °C. Power ampacity: see VDE 0298-4 / Lapp Table T12-1 column C.
2. The inner bending radius of the cable must not be less than 40 times cable diameter.
3. Maximum suspension height depends on the carrying core (see specifications). The maximum load must not be exceeded by more than 10 per cent.
4. The transporting drum should be driven to the application place. If possible, avoid rolling the drum. Otherwise the drum must be rolled on the floor only in the direction given in Figure 1.



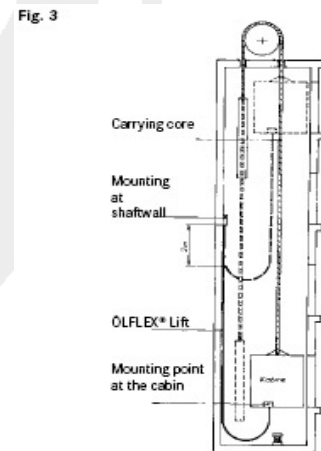
B Suspending the Cables

1. When suspending the cables in the shaft, unreel them tangentially. Unreeling axially leads to cable torsion and interferences with the core twisting. This results in disturbances during operation (see Figure 2).
2. In order to guarantee torsion-free suspension, the cable must be loosely suspended in the shaft before final installation. This can be done best by installing the cable from the shaft bottom.
3. The free space between lift cabin and shaft bottom must be sufficiently large. It has to be used for the cable loop (see Figure 3).



C Installing the Cables

1. It is indispensable to use large clamps for cable installation (for example Lapp wedged clamps type EKK or DKK). With suspension heights of 50 m and more the carrying core has to be damped separately.
2. The cable must be mounted to the shaft wall at least 2 m above half the driving length.
3. In case of unsteady movement, i.e. leaving the drop line during operation, the control cable must be twisted slightly at one of the mounting points until proper cable movement has been achieved.
4. If several control cables have to be installed in the lift device, it is recommended for technical reasons to install the cables in a way that the loops have height distances about 15 m (stepwise suspension).



Selection Table

T4: Core Ident Code according to VDE Colour Code

■ VDE 0293-308/HD 308 S2

Conductor ident code for colour coded low voltage multiconductor cables and cords

Marking of the conductors of low-voltage multiconductor cables and cords of portable equipment as well as for electrical installation and distribution systems. 3a und 4a: for special applications only.

1 Number of conductors	2 Cables and cords having protective conductor (Abbreviations: J or G)	3 Cables and cords without protective conductor (Abbreviations: O or X)	4 Cables having concentric conductor design
2	–	BU/BN	BU/BN
3	GNYE/BN/BU	BN/BK/GY	BN/BK/GY
3a	–	BU/BN/BK	BU/BN/BK
4	GNYE/BN/BK/GY	BU/BN/BK/GY	BU/BN/BK/GY
4a	GNYE/BU/BN/BK		
5	GNYE/BU/BN/BK/GY	BU/BN/BK/GY/BK	BU/BN/BK/GY/BK
6 and more	GNYE/BK having printed numbers	BK having printed numbers	BK having printed numbers

■ VDE0293 former Colour Code for Power Cables –
(colour abbreviations are listed in IEC 60757)

Marking of the cores in multi-core and multi-wire cables for connecting mobile and portable equipment

1 Number of conductors	2 Cables with green-yellow identified core (harmonized)	3 Cables without green-yellow identified core (not yet harmonized)	4 Cables with concentric conductors
2	–	BN/BU	–
3	GNYE/BN/BU	BN/BU/BK	–
3	–	BN/BK/GY	–
4	GNYE/BK/BU/BN	BK/BN/BU/BK	–
4	GNYE/BN/BK/GY	BU/BN/BK/GY	–
5	GNYE/BK/BU/BN/BK	BK/BN/BU/BK/BK	–
5	GNYE/BU/BN/BK/GY	BU/BN/BK/GY/BK	–
6 and more	GNYE/other cores black with numbering from inside beginning with 1, GNYE in the outer layer	Black cores with numbering, from inside beginning with 1.	–

Marking of the cores in multi-core and multi-wire cables for static installation

1 Number of conductors	2 Cables with green-yellow identified core (Abbreviations: J)	3 Cables without green-yellow identified core (Abbreviations: O)	4 Cables with concentric conductors
2	–	BK/BU	BK/BU
3	GNYE/BK/BU	BN/BU/BK	BK/BU/BN
3	–	BN/BK/GY	–
4	GNYE/BK/BU/BN	BK/BN/BU/BK	BK/BU/BN/BK
4	GNYE/BN/BK/GY	BU/BN/BK/GY	–
5	GNYE/BK/BU/BN/BK	BK/BN/BU/BK/BK	–
5	GNYE/BU/BN/BK/GY	BU/BN/BK/GY/BK	–
6 and more	GNYE/other cores black with numbering from inside beginning with 1, GNYE in the outer layer	Black cores with numbering, from inside beginning with 1.	Black cores with numbering, from inside beginning with 1.

DIN 47100/January 1988 – Colour code for UNITRONIC® twisted pairs

Each pair comprises one a-core and one b-core. From 23 pairs upwards the marking repeats for the first time and from 45 pairs upwards for the second time. The first colour is always the basic colour of the core and the second colour is printed in rings.

Pair No.	Colour a-core	Colour b-core	Pair No.	Colour a-core	Colour b-core
1	white	brown	13	white/black	brown/black
2	green	yellow	14	grey/green	yellow/grey
3	grey	pink	15	pink/green	yellow/pink
4	blue	red	16	green/blue	yellow/blue
5	black	violet	17	green/red	yellow/red
6	grey/pink	red/blue	18	green/black	yellow/black
7	white/green	brown/green	19	grey/blue	pink/blue
8	white/yellow	yellow/brown	20	grey/red	pink/red
9	white/grey	grey/brown	21	grey/black	pink/black
10	white/pink	pink/brown	22	blau/black	red/black
11	white/blue	brown/blue	23 – 44	see 1–22	see 1–22
12	white/red	brown/red	45 – 66	see 1–22	see 1–22

DIN 47100 Colour Code (but in contrast to DIN: without colour repetition after the 44th core)

Exception: 4-core cord: white, yellow, brown, green.

Core No.	Colour	Core No.	Colour	Core No.	Colour	Core No.	Colour
1	white	17	white/grey	33	green/red	49	white/green/black
2	brown	18	grey/brown	34	yellow/red	50	brown/green/black
3	green	19	white/pink	35	green/black	51	white/yellow/black
4	yellow	20	pink/brown	36	yellow/black	52	yellow/brown/black
5	grey	21	white/blue	37	grey/blue	53	white/grey/black
6	pink	22	brown/blue	38	pink/blue	54	grey/brown/black
7	blue	23	white/red	39	grey/red	55	white/pink/black
8	red	24	brown/red	40	pink/red	56	pink/brown/black
9	black	25	white/black	41	grey/black	57	white/blue/black
10	violet	26	brown/black	42	pink/black	58	brown/blue/black
11	grey/pink	27	grey/green	43	blue/black	59	white/red/black
12	red/blue	28	yellow/grey	44	red/black	60	brown/red/black
13	white/green	29	pink/green	45	white/brown/black	61	black /white
14	brown/green	30	yellow/pink	46	yellow/green/black		
15	white/yellow	31	green/blue	47	grey/pink/black		
16	yellow/brown	32	yellow/blue	48	red/blue/black		

The first colour indicates the basic colour of the core insulation, the second colour indicates the colour of the printed ring. Where three colours are indicated, the second and third colours are printed on the basic colour.



Selection Table

T6: Core Ident Code: VDE Colour Code for Telephone Cables

VDE 0815 and 0816 Unit Twisted

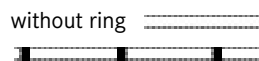
Colour Code for Cable Types
J-YY, J-2Y(ST)Y, A-2YF(L)2Y, A-2Y(L)2Y
Star-quad bundles

The marking of the cores is by means of rings quad of a unit

Side 1

a-core

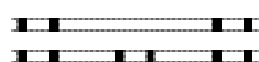
b-core



Side 2

a-core

b-core



Basic colours of the core insulation
for the 5 star

- Quad 1 red
- Quad 2 green
- Quad 3 grey
- Quad 4 yellow
- Quad 5 white

The number units are marked with red
spirals.

VDE 0815

Colour Code for Indoor Telephone Ca-
bles J-Y(ST)Y ... LG
(Pairs in layers, counting from outside
to inside.)

a-core:

pairs in each layer red, by all other pairs
white.

b-core:

blue, yellow, green, brown, black in
continual repetition.

Supposition:

The two paired installation cable is star
quad stranded.

Side 1 (pair 1):

a-core red
b-core black

Side 2 (pair 2):

a-core white
b-core yellow

VDE 0815

VDE0815
Colour Code for
Industrial Electronic Cables JE-...
Marking:

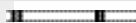
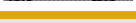
The cores of these pairs are marked by
the basic colours of the insulating sheath,
which are repeated in the same sequence
in each unit:

Basic colours of the pairs:

Pair	1	2	3	4
a-core	blue	grey	green	white
b-core	red	yellow	brown	black

The units are marked in groups with the
colour of the rings on the core insulation
sheaths and the arrangement of the co-
loured rings. The ring groups are spaced
approximately 60 mm apart.

In cables with more than 12 units the 13th
and the subsequent units have coloured
spirals.

Unit	Ring colour	Ring group	Unit spiral
1	pink		-
2	pink		-
3	pink		-
4	pink		-
5	orange		-
6	orange		-
7	orange		-
8	orange		-
9	violet		-
10	violet		-
11	violet		-
12	violet		-
13	pink		blue
14	pink		blue
15	pink		blue
16	pink		blue
17	orange		red
18	orange		red
19	orange		red
20	orange		red

T7: Conductor Resistances and Conductor Make-up (metric)

Conductor Resistances and Conductor Make-up (metric)

Conductor Resistances: for annealed-copper-conductors in single- and multicore cables $\geq 0.5 \text{ mm}^2$ acc. to DIN EN 60228 (VDE 0295)

Nominal cross-section in mm^2	Conductor resistance for 20 °C for 1 km in Ω (maximum value)			
	of metal coated copper wire		of bare copper wire	
	Class 2	Class 5 + 6	Class 2	Class 5 + 6
0.08		250.0		243.0
0.14		142.0		138.0
0.25		82.0		79.0
0.34		59.0		57.0
0.5	36.7	40.1	36.0	39.0
0.75	24.8	26.7	24.5	26.0
1	18.2	20.0	18.1	19.5
1.5	12.2	13.7	12.1	13.3
2.5	7.56	8.21	7.41	7.98
4	4.70	5.09	4.61	4.95
6	3.11	3.39	3.08	3.30
10	1.84	1.95	1.83	1.91
16	1.16	1.24	1.15	1.21
25	0.734	0.795	0.727	0.780
35	0.529	0.565	0.524	0.554
50	0.391	0.393	0.387	0.386
70	0.270	0.277	0.268	0.272
95	0.195	0.210	0.193	0.206
120	0.154	0.164	0.153	0.161
150	0.126	0.132	0.124	0.129
185	0.100	0.108	0.0991	0.106
240	0.0762	0.0817	0.0754	0.0801
300	0.0607	0.0654	0.0601	0.0641
400	0.0475		0.0470	
500	0.0369		0.0366	
630	0.0286		0.0283	
800	0.0224		0.0221	
1000	0.0177		0.0176	

Examples of Conductor Make-up (metric)

Cross section in mm^2	Multi-Wire Strands	Multi-Wire Strands	Fine-Wire Strands	Super-Fine-Wire Strands			
				~ 18 x 0.10	~ 18 x 0.1	~ 36 x 0.07	~ 72 x 0.05
0.14				~ 32 x 0.10	~ 32 x 0.1	~ 65 x 0.07	~ 128 x 0.05
0.25			~ 14 x 0.15	~ 42 x 0.10	~ 42 x 0.1	~ 88 x 0.07	~ 174 x 0.05
0.34		7 x 0.25	~ 19 x 0.15	~ 21 x 0.15	~ 48 x 0.1	~ 100 x 0.07	~ 194 x 0.05
0.38		7 x 0.27	~ 12 x 0.20	~ 28 x 0.15	~ 64 x 0.1	~ 131 x 0.07	~ 256 x 0.05
0.5	7 x 0.30	7 x 0.30	~ 16 x 0.20	~ 42 x 0.15	~ 96 x 0.1	~ 195 x 0.07	~ 384 x 0.05
0.75	7 x 0.37	7 x 0.37	~ 24 x 0.20	~ 56 x 0.15	~ 128 x 0.1	~ 260 x 0.07	~ 512 x 0.05
1.0	7 x 0.43	7 x 0.43	~ 32 x 0.20	~ 84 x 0.15	~ 192 x 0.1	~ 392 x 0.07	~ 768 x 0.05
1.5	7 x 0.52	7 x 0.52	~ 30 x 0.25	~ 140 x 0.15	~ 320 x 0.1	~ 651 x 0.07	~ 1280 x 0.05
2.5	7 x 0.67	~ 19 x 0.41	~ 50 x 0.25	~ 224 x 0.15	~ 512 x 0.1	~ 1040 x 0.07	
4	7 x 0.85	~ 19 x 0.52	~ 56 x 0.30	~ 192 x 0.20	~ 768 x 0.1	~ 1560 x 0.07	
6	7 x 1.05	~ 19 x 0.64	~ 84 x 0.30	~ 320 x 0.20	~ 1280 x 0.1	~ 2600 x 0.07	
10	7 x 1.35	~ 49 x 0.51	~ 80 x 0.40	~ 512 x 0.20	~ 2048 x 0.1		
16	7 x 1.70	~ 49 x 0.65	~ 128 x 0.40	~ 800 x 0.20	~ 3200 x 0.1		
25	7 x 2.13	~ 84 x 0.62	~ 200 x 0.40	~ 1120 x 0.20			
35	7 x 2.52	~ 133 x 0.58	~ 280 x 0.40				
50	~ 19 x 1.83	~ 133 x 0.69	~ 400 x 0.40				
70	~ 19 x 2.17	~ 189 x 0.69	~ 356 x 0.50				
95	~ 19 x 2.52	~ 259 x 0.69	~ 485 x 0.50				
120	~ 37 x 2.03	~ 336 x 0.67	~ 614 x 0.50				
150	~ 37 x 2.27	~ 392 x 0.69	~ 765 x 0.50				
185	~ 37 x 2.52	~ 494 x 0.69	~ 944 x 0.50				
240	~ 37 x 2.87	~ 627 x 0.70	~ 1225 x 0.50				
300	~ 61 x 2.50	~ 790 x 0.70	~ 1530 x 0.50				
400	~ 61 x 2.89		~ 2035 x 0.50				
500	~ 61 x 3.23		~ 1768 x 0.60				
630	~ 91 x 2.97		~ 2286 x 0.60				

Visualisation:



Multi-Wire Strands



Fine-Wire Strands



Super-Fine-Wire Strands



Table 8-1: Power rating

Of wires & cables having nominal voltage up to 1000 V and heat resistant wire & cables, ambient temperature 30 °C

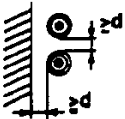
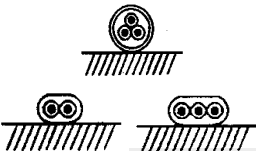
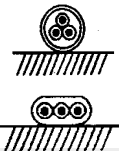
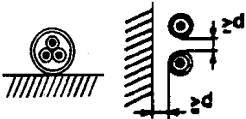
Cable or lead category					
	A Single core cable • rubber insulated • PVC insulated • TPE insulated • heat resistant	B Multi core cables and cords for home- and portable apparatus • rubber insulated • PVC insulated • TPE insulated		C Multicore cables + cords, excl. home- + portable apparatus • rubber insulated • PVC insulated • TPE- insulated • heat resistant	D Multicore heavy duty rubber cables $\leq 0.6/1\text{kV}$ Single core special rubber cables $0.6/1\text{kV}$ or $1.8/3\text{kV}$
Method of installation					
Number of current carrying conductors	1 ³⁾	2	3	2 or 3	3 1 ³⁾
Nominal cross section in mm ²	Current rating in A	Current rating in A		Current rating in A	Current rating in A
0.08 ¹⁾	1.5	-	-	1	- -
0.14 ¹⁾	3	-	-	2	- -
0.25 ¹⁾	5	-	-	4	- -
0.34 ¹⁾	8	-	-	6	- -
0.5	12 ²⁾	3	3	9 ²⁾	- -
0.75	15	6	6	12	- -
1.0	19	10	10	15	- -
1.5	24	16	16	18	23 30
2.5	32	25	20	26	30 41
4	42	32	25	34	41 55
6	54	40	-	44	53 70
10	73	63	-	61	74 98
16	98	-	-	82	99 132
25	129	-	-	108	131 176
35	158	-	-	135	162 218
50	198	-	-	168	202 276
70	245	-	-	207	250 347
95	292	-	-	250	301 416
120	344	-	-	292	- 488
150	391	-	-	335	- 566
185	448	-	-	382	- 644
240	528	-	-	453	- 775
300	608	-	-	523	- 898
400	726	-	-	-	- -
500	830	-	-	-	- -
Sources of current ratings of table 8-1:	DIN VDE 0298-4, 2003-08 Table 11 Column 2	DIN VDE 0298-4, 2003-08 Table 11 Column 3 + 4		DIN VDE 0298-4, 2003-08 Table 11 Column 5	DIN VDE 0298-4, 2003-08 Table 15 Column 4 + 2

Table 8-2: Correction Factors

For ambient temperatures different to 30 °C. (in accordance to DIN VDE 0298-4, 2003-08, Table 17).

Rated temperature of the conductor of wire or cable. (See product page of the catalogue, Technical Data, Temperature range: upper value for static and/or flexing)					
	60 °C	70 °C	80 °C	85 °C	90 °C
Ambient temperature in °C	Correction factor, applicable to current value of T12-1				
10	1.29	1.22	1.18	1.17	1.15
15	1.22	1.17	1.14	1.13	1.12
20	1.15	1.12	1.10	1.09	1.08
25	1.08	1.06	1.05	1.04	1.04
30	1.00	1.00	1.00	1.00	1.00
35	0.91	0.94	0.95	0.95	0.96
40	0.82	0.87	0.89	0.90	0.91
45	0.71	0.79	0.84	0.85	0.87
50	0.58	0.71	0.77	-	0.82
55	0.41	0.61	0.71	-	0.76
60	-	0.50	0.63	-	0.71
65	-	0.35	0.55	-	0.65
70	-	-	0.45	-	0.58
75	-	-	0.32	-	0.50
80	-	-	-	-	0.41
85	-	-	-	-	0.29

Table 8-3: Correction Factors

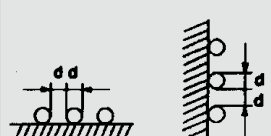
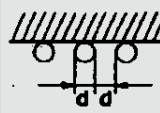
for multiconductor cables and cords, having conductor size up to 10 mm² (DIN VDE 0298-4, 2003-08, Table 26)

Number of current carrying conductors	Correction factors for cables in free air	Correction factors for cables in earth (burial)
5	0.75	0.70
7	0.65	0.60
10	0.55	0.50
14	0.50	0.45
19	0.45	0.40
24	0.40	0.35
40	0.35	0.30
61	0.30	0.25



Table 8-4: Correction factors

Grouping on the wall, floor, ceiling in conduits or closed wire ways (in accordance to DIN VDE 0298-4, 2003-08, Table 21).

Number of current-carrying multicore cables or number of groups of 2- or 3-phase A.C. circuits single core cables.																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	
Type of installation (method)	Correction factor, applicable to the current value of Table 12-1															
On floors or walls with contact between each other bunched directly as well as in conduits or in wireways	1.00	0.80	0.70	0.65	0.60	0.57	0.54	0.52	0.50	0.48	0.45	0.43	0.41	0.39	0.38	
																
In touch between each other, directly attached to walls or floors in one layer.	1.00	0.85	0.79	0.75	0.73	0.72	0.72	0.71	0.70	0.70	0.70	0.70	0.70	0.70	0.70	
																
With clearance of "d" between each other, directly attached to walls or floors in one layer.	1.00	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
																
In touch between each other, directly attached to ceilings.	0.95	0.81	0.72	0.68	0.66	0.64	0.63	0.62	0.61	0.61	0.61	0.61	0.61	0.61	0.61	
																
With clearance of "d" between each other, directly attached to ceilings in one layer.	0.95	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	
																

○ = Symbol of one single core or one multicore cable.

Notice: Correction factors can be applied only to similar loaded cables of a similar type of installation (wiring methode) and nominal cross sections differ one step only.

T9: Properties of insulating and sheathing materials

Only for the basic materials. Variations are possible depending on application/design. See the relevant catalogue page.

Material	Parameter											
	Abbreviation	VDE symbol	working temperature	dielectric constant (10^{-3})	volume resistivity ($\Omega \times \text{cm}$)	tensile strength N/mm ² MPa	Elongation %	Water absorption (20 °C) %	Weather resistance	Fuel resistance	Oil resistance	Flammability
Bio-oil resistant material	Lapp type: P4/11	—	-40 +120	2.4	10^{15}	10 – 20	450 – 550	1 – 2	very good	good	Bio-oil resistant very good	flammable
Polyvinylchloride	PVC	Y	-30 +70	4.0	$10^{12} - 10^{15}$	10 – 25	150 – 300	0.4	moderate	moderate	good	self-extinguishing
Polyvinylchloride heat resistant	PVC	Y	-20 +90	3.5	$10^{12} - 10^{15}$	10 – 25	150 – 300	0.4	moderate	moderate	good	self-extinguishing
High pressure Polyethylene	LDPE	2Y	-50 +70	2.3	10^{17}	20 – 30	500	0.1	good	poor	moderate	flammable
Low Pressure Polyethylene	HDPE	2Y	-50 +100	2.3	10^{17}	30	800	0.1	moderate	poor	moderate	flammable
Polyurethane	PUR	11Y	-40 +90/100	4.0 – 6.0	10^{12}	30 – 45	300 – 600	1.5	very good	good	good	self-extinguishing*
Polyamide	PA	4Y	-40 +80	3.5 – 7.0	10^{14}	50 – 180	200 – 300	1 – 2	good	moderate	good	flammable
Polybutylene terephthalate	PBTP	—	-60 +110	3.0 – 4.0	10^{16}	50 – 100	50 – 300	0.5	good	good	good	flammable
Polytetrafluorethylene	PTFE	5Y	-190 +260	2.1	10^{18}	14 – 40	240 – 400	0.01	very good	very good	very good	non-flammable
Tetrafluorethylene Hexafluorpropylene Copolymer	FEP	6Y	-100 +200	2.1	10^{18}	20 – 25	250 – 350	0.01	very good	very good	very good	non-flammable
Ethylene-tetrafluorethylene	ETFE	7Y	-100 +150	2.6	10^{16}	40 – 50	100 – 300	0.01	very good	very good	very good	non-flammable
Perfluoralkoxy-polymer	PFA	—	-190 +260	2.1	10^{15}	30	300	0.01	very good	very good	good	non-flammable
Chloropren rubber	CR	5G	-40 +100	6.0 – 8.0	10^{13}	25	450	1	very good	poor	good	self-extinguishing
Silicone rubber	SI	2G	-60 +180	2.8 – 3.2	10^{15}	5 – 10	200 – 350	1.0	very good	poor	moderate	less flammable
Ethylene vinyl acetate	EVA	4G	-30 +125	5 – 7	10^{13}	5	200	0.01	good	poor	poor	flammable
Ethylene propylen rubber	EPM/EPDM	3G	-30 +120	3.2	10^{14}	5 – 25	200 – 450	0.02	good	poor	poor	flammable
Thermoplastic polyolefin elastomer	TPE-O	—	-40 +120	2.7 – 3.6	5×10^{14}	≥ 6	≥ 400	1.5	very good	moderate	moderate	flammable
Thermoplastic polyester elastomer	TPE-E	12Y	-70 +125	3.7 – 5.1	10^{12}	3 – 25	280 – 650	0.3 – 0.6	very good	good	very good	flammable
Styrene triple block copolymer	TPE-S	—	-75 +105/140	2.2 – 2.6	10^{16}	9 – 25	500 – 700	1 – 2	moderate	good	poor	flammable

* only with additional flame retardener



Example 'Copper'

The copper price

In Germany and some other countries, copper cables, -leads and piece-goods containing copper may sold at daily copper prices (DEL). The DEL is the Stock Exchange Quotation for German electrolytic copper conducting purpose, i.e. 99.5% pure copper. The DEL is expressed in Euro per 100 kg. It appears in the commercial section of the daily papers under the heading "Commodity Markets". Example: DEL 598.89 means: 100 kg copper (Cu) cost 598.89 Euro. A 1% procurement surcharge is added to the daily quotation for cables, leads and piece-goods.

The copper basis

In the list price of many cables, almost all leads and piece-goods, a proportion of the copper price is already included. It is also expressed in Euro per kg.

- Euro 150.-/100 kg for almost every flexible cable and leads (e.g. ÖLFLEX® CLASSIC 100) and piece-goods (e.g. ÖLFLEX® SPIRAL 540 P)
- Euro 100.-/100 kg for telephone cables and -cords (e.g. J-Y(St)Y)
- Euro 0.-/100 kg for cables (e.g. NYY, NYCY, NYCWY), an exclusive copper cost pricing.

Copper basis is indicated at each relevant page of this catalogue, below the article table.

The copper index

The copper index (copper number) is the calculated copper weight (kg) of a cable per lengths (km) of a cable or lead, for piece-goods per (1000) piece(s) and is indicated for each catalogue article.

Example I. How to calculate the copper price supplement for cables:

Flexible cable ÖLFLEX® CLASSIC 100, 3G1.5mm². U. I. Lapp P.N. 0010 064

Copper index per catalogue: 43 kg/km, Copper base per catalogue: 150.- Euro/100 kg
Therefore the calculated copper weight is 43 kg per 1 km.

$$\text{Copper index (kg/km)} \times \frac{(\text{DEL} + 1 \% \text{ procurement surcharge}) - \text{copper basis}}{1000} = \text{copper supplement cost in Euro/100 m}$$

ÖLFLEX® CLASSIC 110, 3G1.5mm².

DEL: 598.89 Euro/100 kg. Cu base 150.- Euro/100 kg.

Cu index: 43 kg/km

$$43 \text{ kg/km} \times \frac{(598.89 + 5.99) - 150.00}{1000} = 19.56 \text{ Euro/100 m}$$

In the case of a DEL-quotation of 598.89 Euro/100 kg. the additional copper price supplement is 19.56 Euro/100 m for ÖLFLEX® CLASSIC 110 3G1.5 mm².

Example II. How to calculate the copper price supplement for piece-goods:

ÖLFLEX® SPIRAL cables 540P 3G1.5 mm². Spiral lengths (extended): 5000 mm;

U. I. Lapp P.N. 7322 0150

Copper index per catalogue: 605.5 kg/1000 pcs.

Copper base per catalogue: 150.- Euro/100 kg

Therefore the calculated copper weight is 605.5 kg/1000 pcs. = 0.605 kg/piece.

$$\text{Copper index (kg/1000 pcs.)} \times \frac{(\text{DEL} + 1 \% \text{ procurement surcharge}) - \text{copper basis}}{1000} = \text{copper supplement in Euro/100 pcs.}$$

$$605.5 \text{ kg/1000 pcs.} \times \frac{(598.89 + 5.99) - 150.00}{1000} = 275.43 \text{ Euro/100 pcs.}$$

Price including copper:

Copper price supplement is accounted separately at the invoice.

Your net price (without tax) is calculated as follows:

Catalogue/(gross-) price minus your discount (%) + copper supplement.

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ELEKTROTECHNIKER

eingetragen
im Musterregister beim
Amtsgericht Stuttgart



SCHWEIZERISCHER
ELEKTROTECHNISCHER VEREIN



GGVS
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220500 ff.



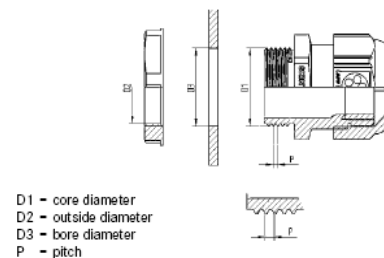
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Thread dimensions and bore dimensions – Technical data for assembly

Metric thread EN 60423 (for cable glands EN 50 262)

Metric thread	ø D1	P	ø D2	Nominal Thread ø D3
M12 x 1.5	12	1.5	10.6	12.3 – 0.2
M16 x 1.5	16	1.5	14.6	16.3 – 0.2
M20 x 1.5	20	1.5	18.6	20.3 – 0.2
M25 x 1.5	25	1.5	23.6	25.3 – 0.2
M32 x 1.5	32	1.5	30.6	32.3 – 0.2
M40 x 1.5	40	1.5	38.6	40.4 – 0.3
M50 x 1.5	50	1.5	48.6	50.4 – 0.3
M63 x 1.5	63	1.5	61.6	63.4 – 0.3



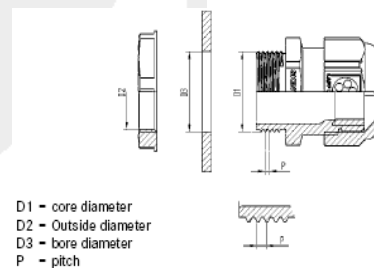
D1 = core diameter
 D2 = outside diameter
 D3 = bore diameter
 P = pitch

Metric thread DIN 13 part 6 and 7 (for cable glands according to DIN 89 280)

Metric thread	ø D1	P	ø D2	Nominal Thread ø D3
M18 x 1.5	18	1.5	16.4	18.3 – 0.2
M24 x 1.5	24	1.5	22.4	24.3 – 0.2
M30 x 2	30	2	27.8	30.3 – 0.2
M36 x 2	36	2	33.8	36.3 – 0.2
M45 x 2	45	2	42.8	45.4 – 0.3
M56 x 2	56	2	53.8	56.4 – 0.3
M72 x 2	72	2	69.8	72.5 – 0.4
M80 x 2	80	2	77.8	80.5 – 0.4
M105 x 2	105	2	102.8	105.5 – 0.4

Technical data for assembly DIN 40430

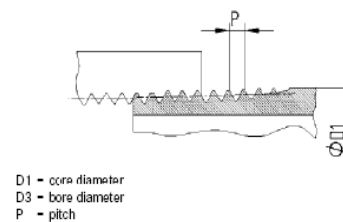
PG thread	ø D1	P	ø D2	Nominal Thread ø D3
PG 7	12.5	1.27	11.3	13.0 ± 0.2
PG 9	15.2	1.41	13.9	15.7 ± 0.2
PG 11	18.6	1.41	17.3	19.0 ± 0.2
PG 13.5	20.4	1.41	19.1	21.0 ± 0.2
PG 16	22.5	1.41	21.2	23.0 ± 0.2
PG 21	28.3	1.588	26.8	28.8 ± 0.2
PG 29	37.0	1.588	35.5	37.5 ± 0.3
PG 36	47.0	1.588	45.5	47.5 ± 0.3
PG 42	54.0	1.588	52.5	54.5 ± 0.3
PG 48	59.3	1.588	57.8	59.8 ± 0.3



D1 = core diameter
 D2 = Outside diameter
 D3 = bore diameter
 P = pitch

Technical data for assembly ASA B2.1-1945

NPT thread	ø D1	P	Nominal Thread ø D3
NPT 1/4"	13.7	1.41	14.1 – 0.2
NPT 3/8"	17.1	1.41	17.4 – 0.2
NPT 1/2"	21.3	1.81	21.6 – 0.2
NPT 3/4"	26.7	1.81	27.0 – 0.2
NPT 1"	33.4	2.21	33.7 – 0.2
NPT 1 1/4"	42.2	2.21	42.5 – 0.2
NPT 1 1/2"	48.3	2.21	48.7 – 0.2
NPT 2"	60.3	2.21	60.7 – 0.2



D1 = core diameter
 D3 = bore diameter
 P = pitch

Tightening torque* for SKINTOP® glands metric

Table of the recommended tightening torque (cap nut, connection thread) for SKINTOP® metric version for attainment of protection category IP 68-5 bar and strain relief of category A acc. to EN 50262

Thread	Tightening torque in Nm	
	Polymer	Metal
M12 x 1.5	1.5	8
M16 x 1.5	3.0	10
M20 x 1.5	6.0	12
M25 x 1.5	8.0	12
M32 x 1.5	10.0	18
M40 x 1.5	13.0	18
M50 x 1.5	15.0	20
M63 x 1.5	16.0	20
M63 Plus	-	25

* **Note:** For ATEX cable glands please find the tightening torques in the corresponding operation manuals. (Operation manual attached to the delivery bag)

Tightening torque values* according to DIN/VDE 0619, Point 7 for SKINTOP® glands PG

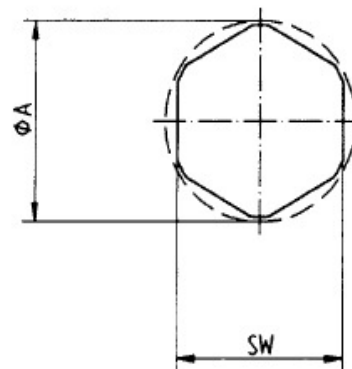
Thread	Torque for the intermediary in Nm		Torque for the cap nut in Nm
	Polymer	Metal	Polymer
PG 7	2.5	6.25	1.7
PG 9	3.75	6.25	2.5
PG 11	3.75	6.25	2.5
PG 13.5	3.75	6.25	2.5
PG 16	5.0	7.5	3.3
PG 21	7.5	10.0	5.0
PG 21	7.5	10.0	5.0
PG 29	7.5	10.0	5.0
PG 36	7.5	10.0	5.0
PG 42	7.5	10.0	5.0
PG 48	7.5	10.0	5.0

* **Reference:** Above values obtain as tightening torques for the intermediary, as well as maximal tightening torques for the cap nuts. To prevent damages of the outer sheath please note that the different cable materials require various torques.

Fitting dimensions and widths across flats

The diameter A indicates the assembly space required for the relevant hexagon. This diameter corresponds to the width across corner of the hexagon, plus an assembly tolerance.

SW	ø A	SW	ø A	SW	ø A
9	10.4	26	29.5	46	52.5
11	12.5	27	30.6	47	52.5
13	14.9	28	31.8	50	58.3
14	16.0	29	32.5	53	60.0
15	17.1	30	34.0	54	61.0
16	18.2	32	36.2	55	62.0
17	19.4	33	37.2	57	64.4
18	20.4	36	40.5	60	67.5
19	22.0	37	41.5	64	72.3
20	22.7	39	44.0	65	73.1
21	23.9	40	45.2	66	74.5
22	25.0	41	46.1	67	74.5
24	27.3	42	47.0		
25	28.3	45	51.2		



Definition of the protection category acc. to EN 60529 (DIN 0470)

The protection category is mentioned as a short mark which consists of two unvarying letters IP and ratios for the protection level, for example IP 54.

Protection Classes for protection against foreign bodies

First figure	Designation	Scope of protection – explanation
0	No protection	
1	Protection against large foreign bodies > 50 mm Ø	Protection against accidental, large-surface contact with active or internal moving parts, e.g. with the hand, but no protection against deliberate access to these parts. Protection against penetration of solid foreign bodies with a diameter larger than 50 mm.
2	Protection against medium-sized foreign bodies > 12.5 mm Ø	Protection against contact by the fingers with active or internal moving parts. Protection against penetration of solid foreign bodies with a diameter larger than 12 mm.
3	Protection against small foreign bodies > 2.5 mm Ø	Protection against contact with active or internal moving parts with tools, wires, etc. of a thickness greater than 2.5 mm. Protection against penetration of solid foreign bodies with a diameter larger than 2.5 mm.
4	Protection against granula foreign bodies > 1.0 mm Ø	Protection against contact with active or internal moving parts with tools, wires, etc. of a thickness greater than 1 mm.
5	Protection against accumulation of dust	Complete protection against contact with live or internal moving parts, protection against harmful dust accumulations. The penetration of dust is not completely prevented, but the dust may not penetrate in such quantities that the mode of operation is restricted.
6	Protection against ingress of dust	Complete protection against contact with live or internal moving parts. Protection against the ingress of dust.

Protection Classes for water protection

Second figure	Designation	Scope of protection – explanation
0	No protection	
1	Protection against dripping water falling vertically	Water drops which fall vertically must not have any harmful effect.
2	Protection against dripping water falling at an angle	Water drops which fall at any angle from 15° to the vertical, may not have any harmful effect.
3	Protection against sprayed water	Water which falls at any angle up to 60° to the vertical, must not have any harmful effect
4	Protection against splashed water	Water which splashes from all directions onto the equipment must not have any harmful effect.
5	Protection against water jet	A water jet from a nozzle, which is directed from any direction against the equipment, must not have any harmful effect.
6	Protection against flooding	In the event of temporary flooding, e.g. in heavy seas, water may not penetrate into the equipment in harmful quantities.
7	Protection against immersion	Water may not penetrate in harmful quantities when the equipment is immersed in water under the prescribed pressure and time conditions.
8	Protection against submersion	Water may not penetrate in harmful quantities if the equipment is submerged under water.

Example: Identifying letters IP **65**

Second figure: Protection against liquids.

First figure: Protection against contact penetration of foreign bodies.

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Table of corresponding symbols to the product application fields



Mining Industry



Pharmaceutical Industry



Oil & Gas Refineries



Off-shore Exploration



Petro-Chemical Industry



Chemical Industry



Energy Industry



Civil Engineering



Industry & Dockyards



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