

THE WORLD OF LAPP

Innovations 2018/19



Legend for icons

INDUSTRIES

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

PRODUCT CHARACTERISTICS

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

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

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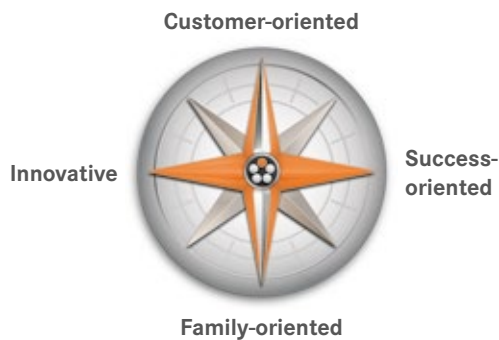
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Andreas Lapp,
Matthias Lapp,
Ursula Ida Lapp,
Alexander Lapp,
Siegbert Lapp.

family

On course for success



Family business and global player

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

Success built on family values

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

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

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Yemen

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

Various applications • PVC outer sheath and coloured cores



ÖLFLEX® DC 100

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



Info

- Designed for DC applications in industrial environment with color code acc. EN 60445

Benefits

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

Application range

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

Product features

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

Product Make-up

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

Technical data



Core identification code
red, white, green-yellow



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



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



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



Test voltage
4000 V



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



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

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® DC 100				
11101106	3 G 1.5	8.7	43	134.2
11101107	3 G 2.5	10	72	188.2
11101108	3 G 4	11.4	115	263.4
11101109	3 G 6	12.6	173	346.2
11101110	3 G 10	15.9	288	584.4
11101111	3 G 16	18.3	461	823.8
11101113	3 G 25	23	720	1071
11101114	3 G 35	25.6	1008	1684

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

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

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

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

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



ÖLFLEX® CLASSIC 115 CY BK

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



i Info

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

Benefits

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

Application range

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

Product features

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

Norm references / Approvals

- Based on EN 50525-2-51

Product Make-up

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

Technical data

- Core identification code**
Black with white numbers according to VDE 0293-1
- Conductor stranding**
Fine wire according to VDE 0295, class 5/IEC 60228 class 5
- Minimum bending radius**
Occasional flexing: 20 × outer diameter
Fixed installation: 6 × outer diameter
- Nominal voltage**
U0/U: 300/500 V
- Test voltage**
Core/core: 4000 V
Core/screen: 2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 115 CY BK				
1136510	2 X 0.5	5.8	36	54
1136511	3 G 0.5	6.1	43	63
1136512	3 X 0.5	6.1	43	63
1136513	4 G 0.5	6.5	49	71
1136514	4 X 0.5	6.5	49	71
1136515	5 G 0.5	7	57	86
1136516	5 X 0.5	7	57	86
1136517	7 G 0.5	7.5	69	105
1136518	7 X 0.5	7.5	69	105
1136519	12 G 0.5	9.9	104	152
1136520	12 X 0.5	9.9	104	163
1136521	18 G 0.5	11.5	141	226
1136522	25 G 0.5	13.4	211	350
1136523	2 X 0.75	6.2	43	59
1136110	3 G 0.75	6.5	52	76
1136525	3 X 0.75	6.5	52	76
1136111	4 G 0.75	7	61	91
1136527	4 X 0.75	7	61	91
1136113	5 G 0.75	7.7	72	100
1136529	5 X 0.75	7.7	72	100
1136114	7 G 0.75	8.3	89	127
1136531	7 X 0.75	8.3	89	127
1136115	12 G 0.75	10.9	138	232
1136533	18 G 0.75	12.7	211	292
1136534	25 G 0.75	14.8	280	435
1136535	2 X 1	6.5	51	71
1136536	3 G 1	6.8	62	86
1136537	3 X 1	6.8	62	86
1136538	4 G 1	7.3	74	98
1136539	4 X 1	7.3	74	98
1136540	5 G 1	8.1	88	121
1136541	5 X 1	8.1	88	121

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1136542	7 G 1	8.8	112	147
1136543	7 X 1	8.8	112	147
1136544	12 G 1	11.5	185	249
1136545	18 G 1	13.9	268	364
1136546	25 G 1	15.9	354	486
1136547	2 X 1.5	7.1	65	86
1136548	3 G 1.5	7.5	82	112
1136549	3 X 1.5	7.5	82	112
1136550	4 G 1.5	8.2	100	135
1136551	4 X 1.5	8.2	100	135
1136552	5 G 1.5	8.9	119	148
1136553	5 X 1.5	8.9	119	148
1136554	7 G 1.5	9.9	154	192
1136555	7 X 1.5	9.9	154	192
1136556	12 G 1.5	13	268	332
1136557	18 G 1.5	15.6	373	484
1136558	25 G 1.5	17.9	530	734
1136559	34 G 1.5	20.8	683	944
1136560	3 G 2.5	8.9	118	151
1136561	4 G 2.5	9.9	147	188
1136562	5 G 2.5	11	176	224
1136563	7 G 2.5	11.9	253	294
1136564	12 G 2.5	16	355	521
1136565	18 G 2.5	19	569	740
1136566	4 G 4	11.6	248	287
1136567	4 G 6	14.2	343	424
1136568	4 G 10	17.2	495	637
1136569	5 G 10	19.5	592	824
1136570	4 G 16	20.2	800	1050
1136571	5 G 16	22.6	895	1285
1136572	4 G 25	25.1	1075	1413
1136573	4 G 35	28	1576	1867

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



ÖLFLEX® CLASSIC 110 H SF

Halogen-free control cable, EN 45545-2 certified, oil resistant and very flexible



Info

- EN 45545-2 HL 1, HL2, HL3
- High flexibility and oil-resistance
- Other sizes on request

Benefits

- Easy handling and installation due to very flexible cable type
- Wide application range due to excellent product features
- EN 45545-2 certified for rolling stock applications

Application range

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

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)

- Halogen-free according to IEC 60754-1 (amount of halogen acid gas) Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)
- Low smoke density according to IEC 61034-2
- Oil-resistant according to EN 50363-4-1 (TM5) and UL OIL RES I and UL OIL RES II
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396

Norm references / Approvals

- EN 45545-2 HL 1, HL2, HL3
- Based on EN 50525-3-11
- Based on EN 50525-2-51

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: Halogen-free
- Cores twisted in layers
- Outer sheath: Special halogen-free compound, black

Technical data



Core identification code

Black with white numbers according to VDE 0293-1



Conductor stranding

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



Minimum bending radius

Occasional flexing: 10 × outer diameter
Fixed installation: 4 × outer diameter



Nominal voltage

U0/U: 300/500 V



Test voltage

4000 V



Protective conductor

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



Temperature range

Occasional flexing: -30°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 H SF				
1002140	5 G 0.5	6.3	24	83
1002141	3 G 1	6.1	28.8	75
1002142	5 G 1	7.3	48	123
1002143	7 G 1	8.1	67	159
1002144	13 G 1	11.4	124.8	295
1002145	25 G 1	15	240	515
1002146	43 G 1	19.8	412.8	899
1002147	73 G 1	25.3	700.8	1402
1002148	3 G 1.5	6.8	43.2	96
1002149	5 G 1.5	8.3	72	163
1002150	7 G 1.5	9	100.8	208
1002151	13 G 1.5	13	187.2	394
1002152	25 G 1.5	17.2	360	704
1002153	43 G 1.5	22.6	619.2	1198
1002154	61 G 1.5	25.6	878.4	1637
1002155	3 G 2.5	8.3	72	147
1002156	5 G 2.5	10.1	120	255
1002157	7 G 2.5	11.2	168	333
1002158	3 G 6	11.7	172.8	321
1002159	5 G 6	14.5	288	541
1002160	7 G 6	16	403.2	712
1002161	5 G 10	18.4	480	915
1002162	5 G 16	22.3	768	1344
1002163	5 G 35	31.1	1680	2778

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

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

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

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

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



ÖLFLEX® CLASSIC 115 CH SF

Screened halogen-free control cable, oil resistant and very flexible

i Info

- EN 45545-2 HL1, HL2, HL3
- High flexibility and oil-resistance
- Other sizes on request



Benefits

- Easy handling and installation due to very flexible cable type
- Wide application range due to excellent product features
- EN 45545-2 certified for rolling stock applications
- Copper screening complies with EMC requirements and protects against electromagnetic interference

Application range

- Railway applications
- Public buildings like airports or railway stations
- Plant engineering, Industrial machinery Heating and air-conditioning systems Stage applications
- Particularly where human and animal life as well as valuable property are exposed to high risk of fire hazards
- In EMC-sensitive environments

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)

- Halogen-free according to IEC 60754-1 (amount of halogen acid gas) Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)
- Low smoke density according to IEC 61034-2
- Oil-resistant according to EN 50363-4-1 (TM5) and UL OIL RES I and UL OIL RES II
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396

Norm references / Approvals

- EN 45545-2 HL1, HL2, HL3
- Based on EN 50525-3-11
- Based on EN 50525-2-51

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: Halogen-free
- Cores twisted in layers
- Wrapping: Halogen-free plastic foil
- Tinned-copper braiding
- Outer sheath: Special halogen-free compound, black

Technical data

- Core identification code**
Black with white numbers according to VDE 0293-1
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6
- Minimum bending radius**
Occasional flexing: 15 × outer diameter
Fixed installation: 6 × outer diameter
- Nominal voltage**
U0/U: 300/500 V
- Test voltage**
Core/core: 4000 V
Core/screen: 2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -30°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 115 CH SF				
1002164	5 G 0.5	7.1	43.3	97
1002165	36 X 0.5	16.1	267.1	538
1002166	3 G 0.75	6.6	40.9	86
1002167	5 G 0.75	7.9	58.1	122
1002168	7 G 0.75	8.5	85.8	160
1002169	25 G 0.75	15.1	248.4	485
1002170	7 G 1	8.9	92.3	172
1002171	13 G 1	12.4	162	318
1002172	25 G 1	16.2	306	600
1002173	2 X 1.5	7.2	56.5	103
1002174	3 G 1.5	7.6	65.3	119
1002175	5 G 1.5	9.1	108.9	186
1002176	4 G 2.5	10	124.9	217
1002177	4 G 4	11.9	188.2	303
1002178	4 G 6	14.2	271.7	443
1002179	4 G 10	17.5	453.8	725

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



ÖLFLEX® CLASSIC 115 CH SF (TP)

Screened halogen-free control cable, EN 45545-2 certified, oil resistant, very flexible with twisted pairs



Info

- EN 45545-2 HL1, HL2, HL3
- High flexibility and oil-resistance
- Other sizes on request

Benefits

- Easy handling and installation due to very flexible cable type
- Wide application range due to excellent product features
- EN 45545-2 certified for rolling stock applications
- Copper screening complies with EMC requirements and protects against electromagnetic interference

Application range

- Railway applications
- Public buildings like airports or railway stations
- Plant engineering, Industrial machinery Heating and air-conditioning systems Stage applications
- Particularly where human and animal life as well as valuable property are exposed to high risk of fire hazards
- In EMC-sensitive environments

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)

- Halogen-free according to IEC 60754-1 (amount of halogen acid gas) Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)
- Low smoke density according to IEC 61034-2
- Oil-resistant according to EN 50363-4-1 (TM5) and UL OIL RES I and UL OIL RES II
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396

Norm references / Approvals

- EN 45545-2 HL1, HL2, HL3
- Based on EN 50525-3-11
- Based on EN 50525-2-51

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: Halogen-free
- TP structure
- Wrapping: Halogen-free plastic foil
- Tinned-copper braiding
- Outer sheath: Special halogen-free compound, black

Technical data

- Core identification code**
Coloured according to DIN 47100, refer to Appendix T9
- Conductor stranding**
Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6
- Minimum bending radius**
Occasional flexing: 15 × outer diameter
Fixed installation: 6 × outer diameter
- Nominal voltage**
U0/U: 300/500 V
- Test voltage**
Core/core: 4000 V
Core/screen: 2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -30°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 115 CH SF (TP)				
1002180	3 X (2 × 0.75)	9.6	69	171
1002181	4 X (2 × 0.75)	10.9	90.4	202
1002182	6 X (2 × 0.75)	12.3	130	287
1002183	12 X (2 × 0.75)	16.4	271.8	530
1002184	2 X (2 × 1)	9.2	72.1	174
1002185	4 X (2 × 1)	11.5	126.2	244
1002186	12 X (2 × 1)	17.4	336.5	615
1002187	3 X (2 × 1.5)	11.7	139.5	259

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

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

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

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

Single lengths for sizes: ≥ 4G50 max. 500 m

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



ÖLFLEX® CLASSIC 128 H BK 0.6/1 kV

Cost-effective halogen-free control cable with improved fire characteristics, 0.6/1kV

i Info

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



Benefits

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

Application range

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

Product features

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

Norm references / Approvals

- Based on EN 50525-3-11

Product Make-up

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

Technical data

- Core identification code**
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/IEC 60228 Class 5
- Minimum bending radius**
Occasional flexing: 15 × outer diameter
Fixed installation: 4 × outer diameter
- Nominal voltage**
U0/U: 600/1000 V
- Test voltage**
4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 128 H BK 0,6/1 kV				
1123520	2 X 1	7.4	19.2	76
1123521	3 G 1	7.8	28.8	101
1123522	4 G 1	8.4	38.4	120
1123523	5 G 1	9.2	48	143
1123524	7 G 1	9.9	67.2	179
1123525	12 G 1	12.8	115.2	283
1123526	18 G 1	15.1	172.8	406
1123527	25 G 1	17.8	240	554
1123528	2 X 1.5	8.4	28.8	112
1123529	3 G 1.5	8.9	43.2	135
1123530	4 G 1.5	9.6	57.6	163
1123531	5 G 1.5	10.5	72	196
1123532	7 G 1.5	11.4	100.8	253
1123533	12 G 1.5	15.1	172.8	396

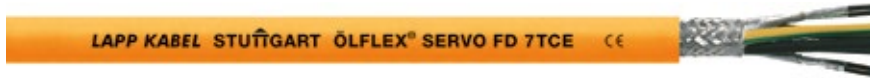
Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1123534	18 G 1.5	18	259.2	589
1123535	25 G 1.5	21.1	360	801
1123537	3 G 2.5	10.1	72	189
1123538	4 G 2.5	11	96	232
1123539	5 G 2.5	12.1	120	279
1123541	12 G 2.5	17.9	288	603
1123544	3 G 4	11.4	115.2	260
1123545	4 G 4	12.5	153.6	322
1123546	5 G 4	13.7	192	387
1123547	3 G 6	12.7	172.8	346
1123548	4 G 6	13.9	230.4	431
1123549	5 G 6	15.8	288	533
1123550	4 G 10	17.9	384	734
1123552	5 G 16	23	768	1303
1123553	4 G 25	25.2	960	1617

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



ÖLFLEX® SERVO FD 7TCE

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



Info

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

Benefits

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

Application range

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

Product features

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

Norm references / Approvals

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

Product Make-up

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

Technical data

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

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

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

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

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

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

Protective conductor
G = with GN-YE protective conductor

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

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

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO FD 7TCE				
700750	4 G 1.5	10.2	90.8	174
700751	4 G 2.5	11.4	141.4	230
700752	4 G 4	13.1	200.9	319
700753	4 G 6	15	282.8	431
700754	4 G 1.5 + (2 × 1.5)	12.7	144.4	259
700755	4 G 2.5 + (2 × 1.5)	13.8	199.4	356
700756	4 G 4 + (2 × 1.5)	16.1	273.8	447
700757	4 G 6 + (2 × 1.5)	17.1	345.3	537
700758	4 G 1 + 2 × (2 × 1)	13.3	151.8	280
700759	4 G 1.5 + 2 × (2 × 1)	14.8	190.5	355
700760	4 G 2.5 + 2 × (2 × 1)	15.9	277.7	410
700761	4 G 4 + (2 × 1) + (2 × 1.5)	17.9	318.5	525
700762	4 G 6 + (2 × 1) + (2 × 1.5)	18.8	389.9	613

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Photographs and graphics are not to scale and do not represent detailed images of the respective products.



ÖLFLEX® SERVO FD 796 CP

Screened servo cable with PUR outer sheath for highly dynamic power chain application - certified

i Info

- Extended Line Performance - Long travel lengths or high acceleration
- Product range extension



Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Suitable for use with servomotor product lines from leading drive manufacturers
- Longer cable connection possible between frequency converter and motor due to low capacitance design
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- Copper braiding screens the cable against electromagnetic interference

Application range

- Connecting cable between servo controller and motor
- In power chains or moving machine parts
- For use in assembling & pick-and-place machinery
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines
- For indoor and outdoor use

Product features

- Flammability: UL/CSA: VW-1, FT1 IEC/EN: 60332-1-2
- Halogen-free materials
- Abrasion and notch-resistant
- Oil-resistant

Norm references / Approvals

- VDE - Reg. - No. 8591 (0027925,...926,...927,...930 pending)
- UL AWM Style 20234 cULus AWM I/II A/B, 1000V 80° FT1 CSA AWM I/II A, 1000V 80° FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

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

Technical data

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

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

Minimum bending radius
Flexing: up from 7.5 × outer diameter (up to 16mm²) up from 10 × outer diameter (from 25mm²)
Fixed installation: 4 × outer diameter

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

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

Protective conductor
G = with GN-YE protective conductor

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

Temperature range
Flexing: -40°C to +90°C (UL/CSA: +80°C)
Fixed installation: -50°C to +90°C (UL/CSA: +80°C)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm) approx.	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO FD 796 CP				
0027950	4 G 1.5	9.1	79	140
0027951	4 G 2.5	10.6	129	197
0027952	4 G 4	11.9	186	268
0027953	4 G 6	14.5	296	397
0027954	4 G 10	17.5	449	591
0027955	4 G 16	21.6	716	955
0027956	4 G 25	25.2	1073	1337
0027957	4 G 35	28.6	1480	1769
0027958	4 G 50	33.4	2115	2468
0027930	4 G 0.75 + (2 × 0.5)	11	85.5	155
0027925	4 G 1 + (2 × 0.5)	11.5	97.4	164
0027931	4 G 1 + (2 × 1)	11.7	106.7	174
0027926	4 G 1.5 + (2 × 0.5)	12	117.2	187
0027948	4 G 1.5 + (2 × 1)	12.2	129.9	202
0027932	4 G 1.5 + (3 × 1)	12	143.8	220
0027959	4 G 1.5 + (2 × 1.5)	11.6	135	261
0027927	4 G 2.5 + (2 × 0.5)	12.6	161.2	243
0027978	4 G 2.5 + (2 × 1)	13.5	169.2	253
0027933	4 G 2.5 + (3 × 1)	13.5	204.3	294
0027960	4 G 2.5 + (2 × 1.5)	13.4	188	318
0027981	4 G 4 + (2 × 1)	14.8	238.9	359
0027934	4 G 4 + (3 × 1)	14.7	250	361
0027961	4 G 4 + (2 × 1.5)	14.8	235	385

Article number	Number of cores and mm ² per conductor	Outer diameter (mm) approx.	Copper index (kg/km)	Weight (kg/km)
0027982	4 G 6 + (2 × 1)	16.8	339.5	469
0027962	4 G 6 + (2 × 1.5)	16.8	329	486
0027935	4 G 6 + (3 × 1.5)	16.5	381.4	505
0027983	4 G 10 + (2 × 1)	18.8	530.1	689
0027963	4 G 10 + (2 × 1.5)	19.4	515	701
0027936	4 G 10 + (3 × 1.5)	19.7	568.9	722
0027984	4 G 16 + (2 × 1)	22.8	786.7	985
0027964	4 G 16 + (2 × 1.5)	23.1	757	1048
0027937	4 G 16 + (3 × 1.5)	23.3	824.6	1030
0027965	4 G 25 + (2 × 1.5)	26.6	1147	1532
0027966	4 G 35 + (2 × 1.5)	30.9	1538	2097
0027967	4 G 50 + (2 × 1.5)	34	2181	2721
0027969	4 G 1.5 + 2 × (2 × 0.75)	12.2	159	313
0027970	4 G 2.5 + 2 × (2 × 1)	14.6	207	395
0027980	4 G 4 + 2 × (2 × 1)	16.1	274	466
0027971	4 G 4 + (2 × 1) + (2 × 1.5)	16.3	344	485
0027972	4 G 6 + (2 × 1) + (2 × 1.5)	18.1	436	588
0027973	4 G 10 + (2 × 1) + (2 × 1.5)	21.8	610	819
0027974	4 G 16 + 2 × (2 × 1.5)	25.5	801	1135
0027975	4 G 25 + 2 × (2 × 1.5)	28.8	1187	1559
0027976	4 G 35 + 2 × (2 × 1.5)	30.9	1588	2093

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Photographs and graphics are not to scale and do not represent detailed images of the respective products.



ÖLFLEX® CHAIN PN

Highly flexible, PROFIBUS-compliant power cable - certified for North America



Info

- PROFIBUS-compliant design
- Basic Line for light & ordinary duty in power chain applications
- AWM certification for USA and Canada

Benefits

- Compact design
- Multi-standard certification reduces part varieties and saves costs
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers

Application range

- In power chains or moving machine parts
- In dry, damp or wet interiors
- Suitable for use in measuring, control and regulating circuits
- Wiring of machines, tools, devices, appliances and control cabinets
- Only for outdoor use within the indicated operating temperature range, with UV-protection

Product features

- Designed for 2 million alternating bending cycles and travel distances up to 10 meter
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)
- Flammability:
UL/CSA: VW-1, FT1
IEC/EN: 60332-1-2
- Oil-resistant according to DIN EN 50290-2-22 (TM54)
- Low-adhesive surface

Norm references / Approvals

- UL AWM Style 20886
- CUL AWM II A/B FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Fine-wire, bare copper strand
- Core insulation: PVC
- Cores twisted in layers
- Non-woven wrapping
- Outer sheath: PVC, heat-resistant
- Sheath colour:
4 cores: black (RAL 9005)
5 cores: grey (RAL 7001)

Technical data



Core identification code
brown (L1), blue (N1), black (L2), white (N2)
5 cores: additionally grey (PE)



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



Torsion movement in WTG
TW-0 & TW-1, refer to Appendix T0



Minimum bending radius
For flexible use:
Chains in self-supporting non-gliding arrangements: 10 × outer diameter
In chains in gliding arrangements: 12 × outer diameter
Fixed installation: 4 × outer diameter



Nominal voltage
VDE: U0/U: 300 V
UL & CSA: 1000 V



Test voltage
1500 V



Protective conductor
G = with protective conductor grey
X = without protective conductor



Bending cycles & operation parameters
2 mio. cycles



Temperature range
Flexible: VDE 0°C to +90°C;
UL: up to +90°C
Fixed installation: VDE -40°C to +90°C;
UL/CSA: up to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN PN				
1026791	4 X 0.75	6.5	29	73
1026792	5 G 0.75	7.1	37	86
1026793	4 X 1.5	7.6	58	114
1026794	5 G 1.5	8.5	72	139
1026795	4 X 2.5	9.3	96	179
1026796	5 G 2.5	10.4	120	214

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

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

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

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

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



ÖLFLEX® CHAIN 819 P

Highly flexible control cable with PVC core insulation and robust, oil resistant outer sheath - certified

i Info

- Basic Line Performance - Moderate travel lengths or acceleration
- High oil resistance
- UL/cUL certified for North America



Benefits

- Good combination of quality and price
- Durable thanks to robust sheath material
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Multi-standard certification reduces part varieties and saves costs
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers

Application range

- In power chains or moving machine parts
- Very suitable for oily wet areas within machinery and production lines
- Suitable for use in measuring, control and regulating circuits
- Assembly lines, production lines, in all kinds of machines
- Indoor applications

Product features

- High oil-resistance
- Flammability: IEC/EN: 60332-1-2 UL/CSA: Horizontal Flame, FT2
- Mechanically robust
- Low-adhesive surface

Norm references / Approvals

- USA: UL AWM Style 21576 Canada: cUL AWM Style I/II A FT2
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Fine-wire, bare copper conductor
- Core insulation: PVC
- Cores twisted in layers
- Non-woven wrapping
- Outer sheath of Lapp-PU-Special Blend, black (similar RAL 9005)

Technical data

- Core identification code**
Black with white numbers according to VDE 0293-1
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/IEC 60228 Class 5
- Torsion movement in WTG**
TW-0 & TW-1, refer to Appendix T0
- Minimum bending radius**
Flexing: up from 10 × outer diameter
Fixed installation: 4 × outer diameter
- Nominal voltage**
IEC U0/U: 300/500 V
UL: 1000 V
- Bending cycles & operation parameters**
See Selection Table A2-1 in the appendix of our online catalogue
- Test voltage**
Core/core: 4000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -5°C to +70°C (UL: +80°C)
Fixed installation: -40°C to +70°C (UL: +80°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN 819 P				
1027800	2 X 0.5	5.2	9.6	30.7
1027801	3 G 0.5	5.5	14.4	39.2
1027802	4 G 0.5	6	19.2	48.5
1027803	5 G 0.5	6.5	24	58
1027804	7 G 0.5	7.7	33.6	79
1027805	12 G 0.5	9.2	57.6	121.1
1027806	18 G 0.5	11	86.4	177.9
1027807	25 G 0.5	13.3	120	250
1027810	2 X 0.75	5.6	14.4	37.9
1027811	3 G 0.75	6	21.6	49.4
1027812	4 G 0.75	6.5	28.8	61.5
1027813	5 G 0.75	7.1	36	74.5
1027814	7 G 0.75	8.5	50.4	105.6
1027815	12 G 0.75	10.3	86.4	163.3
1027816	18 G 0.75	12.2	129.6	239
1027817	25 G 0.75	14.8	180	334.8
1027820	2 X 1	5.9	19.2	43.1
1027821	3 G 1	6.3	28.8	56.5
1027822	4 G 1	6.9	39	71.3
1027823	5 G 1	7.5	48	86.2

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1027824	7 G 1	9	67	122.3
1027825	12 G 1	10.9	115.2	190.3
1027826	18 G 1	13.2	172.8	285.4
1027827	25 G 1	15.7	240	391.2
1027830	2 X 1.5	6.5	28.8	55.6
1027831	3 G 1.5	6.9	43.2	74.5
1027832	4 G 1.5	7.6	58	94.7
1027833	5 G 1.5	8.5	72	119.3
1027834	7 G 1.5	10.3	100.8	169.5
1027835	12 G 1.5	12.3	172.8	263.9
1027836	18 G 1.5	14.9	259.2	395.1
1027837	25 G 1.5	17.9	360	549.4
1027840	3 G 2.5	8.4	72	115.6
1027841	4 G 2.5	9.3	96	148.2
1027844	5 G 2.5	10.4	120	186
1027842	7 G 2.5	12.7	168	268.9
1027843	12 G 2.5	15.2	288	420.2
1027850	4 G 4	11.1	153.6	222.1
1027852	4 G 10	17.2	384	541
1027855	4 G 16	20.1	614.4	804.6
1027857	4 G 25	24.9	960	1259.5

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



ÖLFLEX® CHAIN 819 CP

Highly flexible, screened control cable with PVC core insulation and robust, oil resistant outer sheath - certified



Info

- Basic Line Performance - Moderate travel lengths or acceleration
- High oil resistance
- UL/cUL certified for North America

Benefits

- Good combination of quality and price
- Durable thanks to robust sheath material
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Multi-standard certification reduces part varieties and saves costs
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers
- Copper braiding screens the cable against electromagnetic interference

Application range

- In power chains or moving machine parts
- In EMC-sensitive environments
- Very suitable for oily wet areas within machinery and production lines
- Assembly lines, production lines, in all kinds of machines
- Suitable for use in measuring, control and regulating circuits
- Indoor applications

Product features

- High oil-resistance
- Flammability: IEC/EN: 60332-1-2
UL/CSA: Horizontal Flame, FT2
- Mechanically robust
- Low-adhesive surface
- EMC-compliant

Norm references / Approvals

- USA: UL AWM Style 21576
Canada: cUL AWM Style I/II A FT2
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Fine-wire, bare copper conductor
- Core insulation: PVC
- Cores twisted in layers
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath of Lapp-PU-Special Blend, black (similar RAL 9005)

Technical data

- Core identification code**
Black with white numbers acc. to VDE 0293-1
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/IEC 60228 Class 5
- Torsion movement in WTG**
TW-0 & TW-1, refer to Appendix T0
- Minimum bending radius**
Flexing: up from 10 × outer diameter
Fixed installation: 4 × outer diameter
- Nominal voltage**
IEC U0/U: 300/500 V
UL: 1000 V
- Bending cycles & operation parameters**
See Selection Table A2-1 in the appendix of our online catalogue
- Test voltage**
Core/core: 4000 V
Core/screen: 2000 V
- Protective conductor**
G = with GN-YE protective conductor
X = without protective conductor
- Temperature range**
Flexing: -5 °C to +70 °C (UL: +80 °C)
Fixed installation: -40 °C to +70 °C (UL: +80 °C)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN 819 CP				
1027900	2 X 0.5	5.8	22.5	42.9
1027901	3 G 0.5	6.1	27.1	50.6
1027902	4 G 0.5	6.6	35.1	62.6
1027903	5 G 0.5	7.1	43.1	74.7
1027904	7 G 0.5	8.5	55.8	101
1027905	12 G 0.5	10	83.1	144.5
1027906	18 G 0.5	11.8	120	207.1
1027907	25 G 0.5	14.1	171	288.6
1027910	2 X 0.75	6.2	30.4	52.7
1027911	3 G 0.75	6.6	37.5	63.4
1027912	4 G 0.75	7.1	47.9	78
1027913	5 G 0.75	7.7	55.2	90.4
1027914	7 G 0.75	9.1	75.9	126.1
1027915	12 G 0.75	10.9	115.3	183.6
1027916	18 G 0.75	13	168	269.8
1027917	25 G 0.75	15.6	239.6	377
1027920	2 X 1	6.5	35.3	58.5
1027921	3 G 1	6.9	44.7	71.6
1027922	4 G 1	7.5	57.7	89.4
1027923	5 G 1	8.3	70.3	110.2

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1027924	7 G 1	9.8	92.7	149.2
1027925	12 G 1	11.7	148.7	224.4
1027926	18 G 1	14	224.1	331.3
1027927	25 G 1	16.7	299.5	449.2
1027930	2 X 1.5	7.1	47.9	73.8
1027931	3 G 1.5	7.5	62.5	92.6
1027932	4 G 1.5	8.4	80	118.9
1027933	5 G 1.5	9.1	97.5	142.7
1027934	7 G 1.5	10.9	129.7	194.9
1027935	12 G 1.5	13.3	211	301.9
1027936	18 G 1.5	15.7	319	447.8
1027937	25 G 1.5	18.7	428.1	606.5
1027940	3 G 2.5	9	97.4	138.9
1027941	4 G 2.5	10.1	124.8	178.2
1027944	5 G 2.5	11.2	148.7	215.4
1027942	7 G 2.5	13.5	206.5	301.6
1027943	12 G 2.5	16.2	347.5	478.5
1027950	4 G 4	11.9	187	256.1
1027952	4 G 10	18.2	452.1	606.5
1027955	4 G 16	21.3	699.5	884.2
1027957	4 G 25	26.3	1062.1	1349.7

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

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

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

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

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

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UNITRONIC® FD Li2YCY (TP) A BE

Shielded, low-capacitance, twisted-pair PE/PVC data cable for power chain/cable carrier, UL AWM for USA+CAN

i Info

- Better priced than UNITRONIC® FD CP (TP) plus
- Low capacitance, AWM by UL for USA+CAN
- UNITRONIC® FD Li2YCY (TP) A BE: DIN 47100, refer to Appendix T9



Benefits

- Improved transmission characteristics thanks to low-capacitance core insulation and twisted pairs
- Cable specification optimized for use in power chain/cable carrier in the USA, on the basis of NFPA 79, Section 12.9.2

Application range

- Suitable for use in measuring, control and regulating circuits
- Linear robots, automated handling equipment
- Use in drag chain/cable carrier/power track - in case of horizontal installation travel distances up to 50 m
- For use in chain/carrier: Please respect the assembly guidelines listed in Appendix T3

Product features

- Low capacitance
- EMC optimized thanks to overall copper braid shielding
- Flexibility for use inside power chain/cable carrier
- Oil-resistant according to DIN EN 50290-2-22 (TM54)
- Flame-retardant acc. to IEC 60332-1-2, UL VW-1, Cable Flame Test, CSA FT 1

Norm references / Approvals

- Based on VDE 0812
- UL AWM Style 2570 80°C 1000V (external interconnection) for USA (UL File No.: E63634) and in line with NFPA 79, Section 12.9.2
- AWM I/II A/B 80°C 1000V acc. to CSA C22.2 No. 210-15 and certified by UL (cRU) for Canada
- EU conformity and mark with regard to the European RoHS Directive

Product Make-up

- Flexible conductor made of bare copper strands
- Low-capacitance PE core insulation
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: black (similar to RAL 9005)

Technical data

- Core identification code**
UNITRONIC® FD Li2YCY (TP) A BE:
DIN 47100, refer to Appendix T9
- Mutual capacitance**
Up to 0.5 mm²: 60 nF/km
Up to 1 mm²: 70 nF/km
- Inductivity**
approx. 0.65 mH/km
- Conductor stranding**
Fine wire
From 0.5 mm²: Finest wire/
Conductor class 6 acc. to IEC 60228
- Minimum bending radius**
Flexing: 7.5 × outer diameter
Fixed installation: 4 × outer diameter
- Loop resistance**
Ohmic (DC) and loop/bidirectional @ 20 °C
0.14 mm² (26 AWG): 276 Ω/km;
0.25 mm² (24 AWG): 158 Ω/km;
0.34 mm² (22 AWG): 110.8 Ω/km;
0.5 mm² (21 AWG): 78 Ω/km;
0.75 mm² (19 AWG): 52 Ω/km;
1 mm² (18 AWG): 39 Ω/km
- Temperature range**
Flexing:
VDE: -5 °C to 70 °C
UL AWM: -5 °C to 80 °C
Stationary use:
VDE: -40 °C to 70 °C
UL AWM: -5 °C to 80 °C

Article number	Dimension and cross section in mm ²	Outer diameter (mm)	Weight (kg/km)
UNITRONIC® FD Li2YCY (TP) A BE			
0031377	1 × 2 × 0.14	4.3	23
0031378	2 × 2 × 0.14	5.9	42
0031379	3 × 2 × 0.14	6.2	47
0031380	4 × 2 × 0.14	6.7	57
0031381	5 × 2 × 0.14	7.3	68
0031382	6 × 2 × 0.14	7.5	86
0031383	8 × 2 × 0.14	8.8	109
0031384	10 × 2 × 0.14	10.1	120
0031385	12 × 2 × 0.14	9.8	150
0031386	1 × 2 × 0.25	4.7	27
0031387	2 × 2 × 0.25	6.6	57
0031388	3 × 2 × 0.25	7	72
0031389	4 × 2 × 0.25	7.6	85
0031390	5 × 2 × 0.25	8.5	92
0031391	6 × 2 × 0.25	8.8	114
0031392	8 × 2 × 0.25	10.3	145
0031393	10 × 2 × 0.25	11.8	182
0031394	14 × 2 × 0.25	12	213
0031395	25 × 2 × 0.25	16.3	310
0031396	1 × 2 × 0.34	5.1	36
0031397	2 × 2 × 0.34	7.3	69
0031398	3 × 2 × 0.34	8	93
0031399	4 × 2 × 0.34	8.7	106
0031400	5 × 2 × 0.34	9.7	136
0031401	6 × 2 × 0.34	10	165

Article number	Dimension and cross section in mm ²	Outer diameter (mm)	Weight (kg/km)
0031402	8 × 2 × 0.34	11.8	221
0031403	10 × 2 × 0.34	13.7	274
0031404	1 × 2 × 0.5	5.5	47
0031405	2 × 2 × 0.5	8.3	99
0031406	3 × 2 × 0.5	8.8	120
0031407	4 × 2 × 0.5	9.8	130
0031408	5 × 2 × 0.5	10.7	164
0031409	6 × 2 × 0.5	11.3	182
0031410	8 × 2 × 0.5	13.2	278
0031411	10 × 2 × 0.5	15.2	325
0031412	14 × 2 × 0.5	15.5	401
0031413	1 × 2 × 0.75	5.9	61
0031414	2 × 2 × 0.75	9	104
0031415	3 × 2 × 0.75	9.8	148
0031416	4 × 2 × 0.75	10.7	167
0031417	5 × 2 × 0.75	11.9	202
0031418	6 × 2 × 0.75	12.3	233
0031419	8 × 2 × 0.75	14.7	330
0031420	10 × 2 × 0.75	16.7	390
0031421	14 × 2 × 0.75	17	515
0031422	1 × 2 × 1	6.3	71
0031423	2 × 2 × 1	9.9	126
0031424	3 × 2 × 1	10.5	167
0031425	4 × 2 × 1	11.8	213
0031426	5 × 2 × 1	13.1	247

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

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

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

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

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

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



UNITRONIC® FD Li2YCY (TP) A BA

Shielded, low-capacitance, twisted-pair PE/PVC data cable for power chain/cable carrier, UL AWM for USA+CAN



Info

- Better priced than UNITRONIC® FD CP (TP) plus
- Low capacitance, AWM by UL for USA+CAN
- UNITRONIC® FD Li2YCY (TP) A BA: North-American Core Identification Colors

Benefits

- Improved transmission characteristics thanks to low-capacitance core insulation and twisted pairs
- Cable specification optimized for use in power chain/cable carrier in the USA, on the basis of NFPA 79, Section 12.9.2

Application range

- Suitable for use in measuring, control and regulating circuits
- Linear robots, automated handling equipment
- Use in drag chain/cable carrier/power track – in case of horizontal installation travel distances up to 50 m
- For use in chain/carrier: Please respect the assembly guidelines listed in Appendix T3

Product features

- Low capacitance
- EMC optimized thanks to overall copper braid shielding
- Flexibility for use inside power chain/cable carrier
- Oil-resistant according to DIN EN 50290-2-22 (TM54)
- Flame-retardant acc. to IEC 60332-1-2, UL VW-1, Cable Flame Test, CSA FT 1

Norm references / Approvals

- Based on VDE 0812
- UL AWM Style 2570 80°C 1000 V (external interconnection) for USA (UL File No.: E63634) and in line with NFPA 79, Section 12.9.2
- AWM I/II A/B 80°C 1000V acc. to CSA C22.2 No. 210-15 and certified by UL (cRU) for Canada
- EU conformity and mark with regard to the European RoHS Directive

Product Make-up

- Flexible conductor made of bare copper strands
- Low-capacitance PE core insulation
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: black (similar to RAL 9005)

Technical data



Core identification code

UNITRONIC® FD Li2YCY (TP) A BA:

- Pair 01: Black, Red;
- Pair 02: Black, White;
- Pair 03: Black, Green;
- Pair 04: Black, Blue;
- Pair 05: Black, Yellow;
- Pair 06: Black, Brown;
- Pair 07: Black, Orange;
- Pair 08: Red, White;
- Pair 09: Red, Green;
- Pair 10: Red, Blue;
- Pair 11: Red, Yellow;
- Pair 12: Red, Brown;
- Pair 13: Red, Orange;
- Pair 14: Green, White;
- Pair 15: Green, Blue;
- Pair 16: Green, Yellow;
- Pair 17: Green, Brown;
- Pair 18: Green, Orange;

- Pair 19: White, Blue;
- Pair 20: White, Yellow;
- Pair 21: White, Brown;
- Pair 22: White, Orange;
- Pair 23: Blue, Yellow;
- Pair 24: Blue, Brown;
- Pair 25: Blue, Orange;
- Exception Single-paired/24 - 22 AWG: Black, White



Mutual capacitance

Up to 0.5 mm²: 60 nF/km
Up to 1.0 mm²: 70 nF/km



Inductivity

approx. 0.65 mH/km



Conductor stranding

Fine wire
From 0.5 mm²: Finest wire/Conductor class 6 acc. to IEC 60228



Minimum bending radius

Flexing: 7.5 × outer diameter
Fixed installation: 4 × outer diameter



Loop resistance

Ohmic (DC) and loop/bidirectional @ 20 °C
0.14 mm² (26 AWG): 276 Ω/km;
0.25 mm² (24 AWG): 158 Ω/km;
0.34 mm² (22 AWG): 110.8 Ω/km;
0.5 mm² (21 AWG): 78 Ω/km;
0.75 mm² (19 AWG): 52 Ω/km;
1 mm² (18 AWG): 39 Ω/km



Temperature range

Flexing:
VDE: -5 °C to 70 °C
UL AWM: -5 °C to 80 °C
Stationary use:
VDE: -40 °C to 70 °C
UL AWM: -5 °C to 80 °C

Article number	Dimension and cross section in mm ²	Outer diameter (mm)	Weight (kg/km)
UNITRONIC® FD Li2YCY (TP) A BA			
0031427	1 × 2 × 0.14	4.3	23
0031428	2 × 2 × 0.14	5.9	42
0031429	3 × 2 × 0.14	6.2	47
0031430	4 × 2 × 0.14	6.7	57
0031431	5 × 2 × 0.14	7.3	68
0031432	6 × 2 × 0.14	7.5	86
0031433	8 × 2 × 0.14	8.8	109
0031434	10 × 2 × 0.14	10.1	120
0031435	12 × 2 × 0.14	9.8	150
0031436	1 × 2 × 0.25	4.7	27
0031437	2 × 2 × 0.25	6.6	57
0031438	3 × 2 × 0.25	7	72
0031439	4 × 2 × 0.25	7.6	85
0031440	5 × 2 × 0.25	8.5	92
0031441	6 × 2 × 0.25	8.8	114
0031442	8 × 2 × 0.25	10.3	145
0031443	10 × 2 × 0.25	11.8	182
0031444	14 × 2 × 0.25	12	213
0031445	25 × 2 × 0.25	16.3	310
0031446	1 × 2 × 0.34	5.1	36
0031447	2 × 2 × 0.34	7.3	69
0031448	3 × 2 × 0.34	8	93
0031449	4 × 2 × 0.34	8.7	106
0031450	5 × 2 × 0.34	9.7	136
0031451	6 × 2 × 0.34	10	165
0031452	8 × 2 × 0.34	11.8	221
0031453	10 × 2 × 0.34	13.7	274
0031454	1 × 2 × 0.5	5.5	47
0031455	2 × 2 × 0.5	8.3	99
0031456	3 × 2 × 0.5	8.8	120
0031457	4 × 2 × 0.5	9.8	130
0031458	5 × 2 × 0.5	10.7	164
0031459	6 × 2 × 0.5	11.3	182
0031460	8 × 2 × 0.5	13.2	278
0031461	10 × 2 × 0.5	15.2	325
0031462	14 × 2 × 0.5	15.5	401
0031463	1 × 2 × 0.75	5.9	61
0031464	2 × 2 × 0.75	9	104
0031465	3 × 2 × 0.75	9.8	148
0031466	4 × 2 × 0.75	10.7	167
0031467	5 × 2 × 0.75	11.9	202
0031468	6 × 2 × 0.75	12.3	233
0031469	8 × 2 × 0.75	14.7	330
0031470	10 × 2 × 0.75	16.7	390
0031471	14 × 2 × 0.75	17	515
0031472	1 × 2 × 1	6.3	71
0031473	2 × 2 × 1	9.9	126
0031474	3 × 2 × 1	10.5	167
0031475	4 × 2 × 1	11.8	213
0031476	5 × 2 × 1	13.1	247

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



ETHERLINE® PN Cat.6_A FC

Ethernet cable Category 6_A, Class E_A for fixed installation with FC inner sheath – verified up to 500 MHz



Info

- Fast and easy cable preparation by FC inner sheath
- For PROFINET applications with 4 pairs
- CAT.6_A qualified for 10 Gbit/s

Benefits

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

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

Application range

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

Norm references / Approvals

- PVC version with PLTC approval and UL CMG listing
- FRNC version with UL CM listing
- PUR version with UL AWM Style 21576
- Flame retardant acc. to IEC 60332-1-2

Product features

- The oil-resistant PVC sheath enables usage in industrial environments
- Robust, halogen-free FRNC outer sheath

Product Make-up

- Solid bare copper wire AWG23
- Core insulation made of polyethylene (PE)
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening, 2 cores stranded to pair, 4 pairs stranded to bundle with central cross
- Inner sheath: halogen-free compound
- Colour: green (based on RAL 6018)

Technical data

- Peak operating voltage** (not for power applications) 125 V
- Minimum bending radius**
Fixed installation: 8 × outer diameter
- Test voltage**
Core/Core: 1500 V AC
Core/Screen: 1000 V AC
- Characteristic impedance**
nom. 100 Ω acc. to IEC 61156-5
- Temperature range**
cable with PUR jacket
Fixed installation: VDE -30°C to +80°C;
UL/CSA -30°C to +80°C
flexing: VDE -5°C to +50°C;
UL/CSA -5°C to +80°C
cable halogenfree compound
Fixed installation: -25°C to +80°C
cable with PVC jacket
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Core diameter (mm)	Outer diameter (mm)	Copper index (kg/km)
PVC jacket					
2170583	ETHERLINE® PN CAT.6 _A Y FC	4 × 2 × AWG23/1	1.1	8.7	53
Halogen-free jacket					
2170584	ETHERLINE® PN CAT.6 _A FRNC FC	4 × 2 × AWG23/1	1.1	8.7	53
PUR outer sheath, halogen-free					
2170585	ETHERLINE® PN CAT.6 _A P FC	4 × 2 × AWG23/1	1.1	8.7	53

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



ETHERLINE® PN Cat.6_A FLEX FC

Ethernet cable Category 6_A, Class E_A for flexible use with FC inner sheath – verified up to 500 MHz

Info

- Fast and easy cable preparation by FC inner sheath
- For PROFINET applications with 4 pairs
- CAT.6_A qualified for 10Gbit/s



Benefits

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

Application range

- For industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702
- Max. cable length for 100 Mbit/s up to 10 Gbit/s is 100 m
- Wiring of machines, tools, devices, appliances and control cabinets
- Suitable for EtherCAT and EtherNet/IP applications
- For flexible applications (7-wire stranded conductor)

Product features

- CAT.6_A for flexible application, qualified for 10 Gbit/s

- Meets the requirements according to CAT.6_A, ISO/IEC 11801 and EN 50173
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference
- The oil-resistant PVC sheath enables usage in industrial environments
- Robust, halogen-free FRNC outer sheath

Norm references / Approvals

- PVC version with UL CMG listing and AWM Style 21694
- FRNC version with UL CM listing
- Flame retardant acc. to IEC 60332-1-2

Product Make-up

- 7-wire bare stranded copper conductor
- Core insulation: PE
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening, 2 cores stranded to pair, 4 pairs stranded to bundle with central cross
- Inner sheath: halogen-free compound
- PVC or FRNC jacket material
- Colour: green (based on RAL 6018)

Technical data

- Peak operating voltage** (not for power applications) 125 V
- Minimum bending radius**
Flexing: 8 × outer diameter
Fixed installation: 4 × outer diameter
- Test voltage**
Core/Core: 1500 V AC
Core/Screen: 1000 V AC
- Characteristic impedance**
nom. 100 Ω acc. to IEC 61156-5
- Temperature range**
PVC: fixed: -30 °C up to +80 °C
moving: -25 °C up to +70 °C
FRNC: fixed: -25 °C up to +80 °C
moved: -25 up to +80 °C

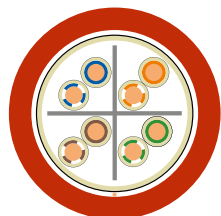
Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)
PVC jacket				
2170586	ETHERLINE® PN CAT.6 _A Y FLEX FC	4 × 2 × AWG23/7	8.9	57
Halogen-free jacket				
2170587	ETHERLINE® PN CAT.6 _A FRNC FLEX FC	4 × 2 × AWG23/7	8.9	57

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)
 Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
 Photographs and graphics are not to scale and do not represent detailed images of the respective products.



ETHERLINE® FIRE CAT.6

Industrial Ethernet cable with insulation integrity



Info

- Insulation integrity for at least 120 minutes in the event of fire

Benefits

- Ensures that the cable can still transmit data during and after a fire for 120 min (according to EN50200)
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference

Application range

- In industrial areas that use fire as a tool
- Highly combustible or fire-prone areas
- For fixed installation
- For indoor use

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1 & EN50267-2-1)
 - Flame-retardant (IEC 60332-1)
 - Fire retardant (IEC 60332-3-24)
 - Low smoke density (IEC 61034-2)
 - Circuit integrity (EN50200); 120 min

Product Make-up

- Solid bare copper conductor
- Core insulation: Based on Polyolefin
- Each insulation will be wrapped with a special tape (anti-fire barrier)
- Twisting: 2 twisted-pair cores, stranding from 4 pairs
- Halogen-free and flame-retardant FRNC outer sheath, colour: red (similar to RAL3000)

Technical data

- Peak operating voltage** (not for power applications) 125 V
- Minimum bending radius** Fixed installation: 20 × outer diameter
- Characteristic impedance** 100 Ω ± 15%
- Temperature range** Operation: -20 °C to +70 °C

Article number	Number of pairs and AWG per conductor	Core diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® FIRE CAT.6					
2170913	4 × 2 × AWG22/1	1.5	10.2	71	145

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable. Photographs and graphics are not to scale and do not represent detailed images of the respective products.



ETHERLINE® Cat.6_A Flex Patch cables



Info

- Additional variants are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Only for patch cable applications (max. 60 m)
- Plug & Play for flexible connection solutions

Application range

- Cat.6_A qualified for 10 Gbit/s
- M12 X-coded connectors, comp. with IEC 61076-2-109
- RJ45 connectors, comp. with IEC 60603-7-51

Product features

- Meets the requirements according to Cat.6_A and Class E_A

Product Make-up

- Braided conductor, 4 × 2 × AWG26/7
- Twisted pair construction permits largely interference-free operation (decoupling)
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference
- Outer sheath: PUR compound, halogenfree, 6.4 mm in diameter
- Colour: green (based on RAL 6018)




Technical data

Minimum bending radius
 Fixed installation: 4 × outer diameter
 Flexing: up from 10 × outer diameter

Protection rating
 M12: IP 67
 RJ45: IP 20

Temperature range
 Flexing: -30°C to +80°C (M12)
 Flexing: -40°C to +70°C (RJ45)

Coding
 M12: X-Standard

		RJ45	M12, plug, straight	M12, socket, straight	Open end
	Length	Article number			
RJ45 	0.5 m	2172362	2172380	2172389	2172371
	1.0 m	2172363	2172381	2172390	2172372
	2.0 m	2172364	2172382	2172391	2172373
	3.0 m	2172365	2172383	2172392	2172374
	5.0 m	2172366	2172384	2172393	2172375
	10.0 m	2172368	2172386	2172395	2172377
	20.0 m	2172370	2172388	2172397	2172379
M12, plug, straight 	0.5 m	2172380	2172326	2172335	2172317
	1.0 m	2172381	2172327	2172336	2172318
	2.0 m	2172382	2172328	2172337	2172319
	3.0 m	2172383	2172329	2172338	2172320
	5.0 m	2172384	2172330	2172339	2172321
	10.0 m	2172386	2172332	2172341	2172323
	20.0 m	2172388	2172334	2172343	2172325
M12, socket, straight 	0.5 m	2172389	2172335	2172344	2172353
	1.0 m	2172390	2172336	2172345	2172354
	2.0 m	2172391	2172337	2172346	2172355
	3.0 m	2172392	2172338	2172347	2172356
	5.0 m	2172393	2172339	2172348	2172357
	10.0 m	2172395	2172341	2172350	2172359
	20.0 m	2172397	2172343	2172352	2172361

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



EPIC® DATA RJ45



Info

- CAT.6_A acc. to ISO/IEC 11801
- Colour-coded assembly aid
- Installation without tools

Product features

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- Suitable for 10BASE-T/ 100BASE-T/ 1000BASE-T/10GBASE-T
- Housing: zinc die-casting, grey
- Suitable for stranded cores and solid conductors
- Suitable for use in industrial applications

Norm references / Approvals

- RJ45 up to 500 MHz, acc. to IEC 60603-7-51
- UL-listed (E-File E353543)

Technical data

IP Protection rating
IP 20

0+ Ambient temperature (operation)
-40°C to +85°C

Article number	Design	Min. outer diameter (mm)	Max. outer diameter (mm)	Min. Core diameter (mm)	Core diameter	PU	AWG solid	AWG 7-wire	AWG 19-wire
PROFINET colour-coding (2-pairs)									
21700605	Straight, latched	5	9	1	1.6	10	24 - 22	27 - 22	22*
21700651	Straight, screwed	5.5	10	1	1.6	1	24 - 22	27 - 22	22*
21700638	Angled, screwed	5.5	10	1	1.6	1	24 - 22	27 - 22	22*
colour-coded acc. to EIA/TIA 568A									
21700600	Straight, latched	5	9	1	1.6	10	24 - 22	27 - 22	
21700652	Straight, screwed	5.5	10	1	1.6	1	24 - 22	27 - 22	
21700636	Angled, screwed	5.5	10	1	1.6	1	24 - 22	27 - 22	
colour-coded acc. to EIA/TIA 568B									
21700601	Straight, latched	5	9	1	1.6	10	24 - 22	27 - 22	
21700653	Straight, screwed	5.5	10	1	1.6	1	24 - 22	27 - 22	
21700637	Angled, screwed	5.5	10	1	1.6	1	24 - 22	27 - 22	
colour-coded acc. to EIA/TIA 568A for small wire diameters									
21700615	Straight, latched	5	9	0.85	1.1	10	26 - 24	27 - 24	26*
21700654	Straight, screwed	5.5	10	0.85	1.1	1	26 - 24	27 - 24	26*
21700639	Angled, screwed	5.5	10	0.85	1.1	1	26 - 24	27 - 24	26*
colour-coded acc. to EIA/TIA 568B for small wire diameters									
21700616	Straight, latched	5	9	0.85	1.1	10	26 - 24	27 - 24	26*
21700655	Straight, screwed	5.5	10	0.85	1.1	1	26 - 24	27 - 24	26*
21700640	Angled, screwed	5.5	10	0.85	1.1	1	26 - 24	27 - 24	26*

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

An approval is necessary for 19-wire cables by Lapp Group

Approved cables: 2170289 & 2170489 ETHERLINE® Cat.5e FD; CE217489 ETHERLINE® Cat.5 FD BK; 2170488 ETHERLINE® Cat.6 FD



EPIC® ULTRA KIT H-B 6

Benefits

- EMC protection
- Corrosion-resistant
- Push-In inserts – fast and easy tool free connection technology

Technical data

	Rated voltage (V) IEC: 500 V UL: 600 V CSA: 600 V
	Rated current (A) IEC: 16 A UL: 13 A CSA: 13 A
	Number of contacts 6 + PE

Info

- Complete connectors – easy to order

EPIC ULTRA Kit H-B 6 SP TG LB 9-17



- Male insert EPIC® H-BE 6 Push-In termination
- EMC hood EPIC® ULTRA H-B 6
- Integrated SKINTOP® cable gland

Article number	Pieces/PU
75009734	1

Article numbers for single components

- 70250202
- 44423200



EPIC ULTRA Kit H-B 6 SP TS LB 9-17



- Male insert EPIC® H-BE 6 Push-In termination
- EMC hood EPIC® ULTRA H-B 6
- Integrated SKINTOP® cable gland

Article number	Pieces/PU
75009735	1

Article numbers for single components

- 70250205
- 44423200



EPIC ULTRA Kit H-B 6 BP AG LB



- Female insert EPIC® H-BE 6 Push-In termination
- EMC panel-mount base EPIC® ULTRA H-B 6

Article number	Pieces/PU
75009736	1

Article numbers for single components

- 70250206
- 44423201



EPIC ULTRA Kit H-B 6 BP SGR LB 9-17



- Female insert EPIC® H-BE 6 Push-In termination
- EMC surface-mount base EPIC® ULTRA H-B 6
- Integrated SKINTOP® cable gland

Article number	Pieces/PU
75009737	1

Article numbers for single components

- 70250209
- 44423201





EPIC® ULTRA KIT H-B 10

Benefits

- EMC protection
- Corrosion-resistant
- Push-In inserts - fast and easy tool free connection technology

Technical data

	Rated voltage (V) IEC: 500 V UL: 600 V CSA: 600 V
	Rated current (A) IEC: 16 A UL: 13 A CSA: 13 A
	Number of contacts 10 + PE

Info

- Complete connectors – easy to order



Article number	Pieces/PU
75009738	1

Article numbers for single components

- 70250212
- 44423202

EPIC® ULTRA Kit H-B 10 SP TS QB 11-21



- Male insert EPIC® H-BE 10 Push-In termination
- EMC hood EPIC® ULTRA H-B 10
- Integrated SKINTOP® cable gland



Article number	Pieces/PU
75009739	1

Article numbers for single components

- 70250213
- 44423203

EPIC ULTRA Kit H-B 10 BP AG QB



- Female insert EPIC® H-BE 10 Push-In termination
- EMC panel-mount base EPIC® ULTRA H-B 10



EPIC® ULTRA KIT H-B 16

Benefits

- EMC protection
- Corrosion-resistant
- Push-In inserts - fast and easy tool free connection technology

Technical data

	Rated voltage (V) IEC: 500 V UL: 600 V CSA: 600 V
	Rated current (A) IEC: 16 A UL: 13 A CSA: 13 A
	Number of contacts 16 + PE

Info

- Complete connectors – easy to order

EPIC ULTRA Kit H-B 16 SP TS QB 11-21



- Male insert EPIC® H-BE 16 Push-In termination
- EMC hood EPIC® ULTRA H-B 16
- Integrated SKINTOP® cable gland

Article number	Pieces/PU
75009740	1

Article numbers for single components

- 70250216
- 44423204



EPIC ULTRA Kit H-B 16 BP AG QB



- Female insert EPIC® H-BE 16 Push-In termination
- EMC panel-mount base EPIC® ULTRA H-B 16

Article number	Pieces/PU
75009741	1

Article numbers for single components

- 70250217
- 44423205





EPIC® ULTRA KIT H-B 24

Benefits

- EMC protection
- Corrosion-resistant
- Push-In inserts - fast and easy tool free connection technology

Technical data

	Rated voltage (V) IEC: 500 V UL: 600 V CSA: 600 V
	Rated current (A) IEC: 16 A UL: 13 A CSA: 13 A
	Number of contacts 24 + PE

Info

- Complete connectors - easy to order



Article number	Pieces/PU
75009742	1

Article numbers for single components

- 70250221
- 44423206

EPIC ULTRA Kit H-B 24 SP TS QB 11-21



- Male insert EPIC® H-BE 24 Push-In termination
- EMC hood EPIC® ULTRA H-B 24
- Integrated SKINTOP® cable gland



Article number	Pieces/PU
75009743	1

Article numbers for single components

- 70250222
- 44423207

EPIC ULTRA Kit H-B 24 BP AG QB



- Female insert EPIC® H-BE 24 Push-In termination
- EMC panel mount base EPIC® ULTRA H-B 24



EPIC® ULTRA H-B 16 TGH QB

The robust and reliable industry connector housing as EMC version

i Info

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland



Benefits

- Optimum, low-resistance 360° screening
- All-purpose due to high corrosion resistance and high environmental protection
- High mechanical resistance
- Pluggable with standard housings

Application range

- Construction machinery
- In EMC-sensitive environments
- For fixed and flexible applications (e.g. machinery building, wind turbines)
- Electric motor manufacturing

Technical data

	Material		Protection rating
	Housing: nickel-plated zinc die-casting Lever and bolts: stainless steel Sealing: NBR Cable gland Body: nickel-plated brass Insert: PA Seal: special elastomer		IP 67 NEMA 250, UL50E: 12, 4, 4X (latched)
			Temperature range
			-40°C to +100°C

Product features

- Corrosion-resistant according to DIN EN 6988
- Resistance to cyclic salt spray is tested according to IEC 68-2-52, severity level 2
- Salt spray testing according to DIN EN ISO 9227, method NSS, period of test 480 hours

Article number	Article description	Clamping range (in mm)	Minimum Ø above braiding (mm)	Pieces/PU
H-B housing: hood (straight cable entry, bolts for double lever, high version)				
70250274	EPIC ULTRA H-B 16 TGH QB 15 - 23	15 - 23		1
70250275	EPIC ULTRA H-B 16 TGH QB 15 - 23 BRUSH	15 - 23	6	1
70250276	EPIC ULTRA H-B 16 TGH QB 19 - 28	19 - 28		1
70250261	EPIC ULTRA H-B 16 TGH QB 19 - 28 BRUSH	19 - 28	6	1

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



EPIC® ULTRA H-B 16 TGH QB 2x

The robust and reliable industry connector housing as EMC version



i Info

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland

Benefits

- Optimum, low-resistance 360° screening
- All-purpose due to high corrosion resistance and high environmental protection
- High mechanical resistance
- Pluggable with standard housings

Application range

- Construction machinery
- In EMC-sensitive environments
- For fixed and flexible applications (e.g. machinery building, wind turbines)
- Electric motor manufacturing

Technical data

Material
 Housing: nickel-plated zinc die-casting
 Lever and bolts: stainless steel
 Sealing: NBR
 Cable gland
 Body: nickel-plated brass
 Insert: PA
 Seal: special elastomer

IP Protection rating
 IP 67
 NEMA 250, UL50E: 12, 4, 4X (latched)

Temperature range
 -40°C to +100°C

Product features

- Corrosion-resistant according to DIN EN 6988
- Resistance to cyclic salt spray is tested according to IEC 68-2-52, severity level 2
- Salt spray testing according to DIN EN ISO 9227, method NSS, period of test 480 hours

Article number	Article description	Clamping range (in mm)	Minimum Ø above braiding (mm)	Pieces/PU
H-B housing: hood (straight cable entry, bolts for double lever, high version)				
70250271	EPIC ULTRA H-B 16 TGH QB 2 X 7 - 15	7 - 15		1
70250272	EPIC ULTRA H-B 16 TGH QB 2 X 7 - 15 BRUSH	7 - 15	5	1
70250273	EPIC ULTRA H-B 16 TGH QB 2 X 11 - 21	11 - 21		1
70250262	EPIC ULTRA H-B 16 TGH QB 2 X 11 - 21 BRUSH	11 - 21	5	1

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



EPIC® ULTRA H-A 3 AGSV

The robust and reliable industry connector housing as EMC version



Info

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



Benefits

- Optimum, low-resistance 360° screening
- All-purpose due to high corrosion resistance and high environmental protection
- Space-saving due to compact dimensions
- High mechanical and chemical resistance
- Pluggable with standard housings

Application range

- In EMC-sensitive environments
- For fixed and flexible applications (e.g. machinery building, wind turbines)
- Construction machinery
- Electric motor manufacturing

Technical data



Material

Housing: nickel-plated zinc diecasting
Lever: stainless steel
Sealing: NBR



Protection rating

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



Temperature range

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

Product features

- Surface-mount base with 1 cable entry
- Resistance to cyclic salt spray is tested according to IEC 68-2-52, severity level 2
- Salt spray testing according to DIN EN ISO 9227, method NSS, period of test 480 hours
- Corrosion-resistant according to DIN EN 6988
- Delivery including stainless steel screw for the inserts

Article number	Article description	Thread	Pieces/PU
Surface-mount base			
19512702	ULTRA H-A 3 AGSV	M20	10

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EPIC® POWER LS1 D6 TWIST

Circular connectors for servomotors and power supply



Info

- TWIST quick-lock technology
- Connector with 1/4 turn safely locked
- Pluggable with the market standard

Suitable contacts:

- EPIC® POWER LS1 Contacts female
- PU = 5 pieces: the contacts are included. 2 mm contact crimp range is 0.5 – 2.5 mm².
- PU = 20 pieces: the contacts must be ordered separately

Benefits

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

Application range

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

Product features

- UL pending

Technical data

	Rated voltage (V) 630 V (2 mm contacts) 250 V (1 mm contacts)		Termination methods Crimp termination: 0.5 – 4 mm ² (2 mm contacts) Crimp termination: 0.14 – 1 mm ² (1 mm contacts)
	Rated impulse voltage 6 kV (2 mm contacts) 4 kV (1 mm contacts)		Material Housing: nickel-plated zinc die-casting, nickel-plated brass Insert: PA, Seal: FPM
	Rated current (A) 26A/3+PE+4, 25A/5+PE (2 mm contacts) 7 A (1 mm contacts)		Protection rating IP68 (10h/1m)
	Pollution degree 3		Cycle of mechanical operation 500
	Contact resistance < 4 mOhm		Temperature range -25°C up to +125°C
	Contacts Gold-plated brass		
	Number of contacts 3+PE+4 (2 mm/1 mm) 5+PE (2 mm)		

Article number	Article description	Contacts included	Clamping range in mm	Pin configuration	Pieces/PU
Type LS1 D6, cable connector, 6-pin, for female contacts					
24441263	LS1 D6	6	8.5 – 11	5+PE	5
24441264	LS1 D6		8.5 – 11	5+PE	20
24441265	LS1 D6	6	10.5 – 15.5	5+PE	5
24441266	LS1 D6		10.5 – 15.5	5+PE	20
24441267	LS1 D6	6	7.5 – 15.5	5+PE	5
24441268	LS1 D6		7.5 – 15.5	5+PE	20
24441269	LS1 D6	6	14 – 17	5+PE	5
24441270	LS1 D6		14 – 17	5+PE	20
24441293	LS1 D6	6	7.5 – 15.5	5+PE	1
Type LS1 D6, cable connector, 8-pin, for female contacts					
24441271	LS1 D6	8	8.5 – 11	3+PE+4	5
24441272	LS1 D6		8.5 – 11	3+PE+4	20
24441273	LS1 D6	8	10.5 – 15.5	3+PE+4	5
24441274	LS1 D6		10.5 – 15.5	3+PE+4	20
24441275	LS1 D6	8	7.5 – 15.5	3+PE+4	5
24441276	LS1 D6		7.5 – 15.5	3+PE+4	20
24441277	LS1 D6	8	14 – 17	3+PE+4	5
24441278	LS1 D6		14 – 17	3+PE+4	20
24441294	LS1 D6	8	7.5 – 15.5	3+PE+4	1

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



EPIC® POWER LS1 D6 TWIST short

Circular connectors for servomotors and power supply



Info

- TWIST quick-lock technology
- Connector with 1/4 turn safely locked
- Pluggable with the market standard

Suitable contacts:

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

Benefits

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

Application range

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

Product features

- UL pending

Technical data

	Rated voltage (V) 630 V (2 mm contacts) 250 V (1 mm contacts)		Termination methods Crimp termination: 0.5 - 4 mm ² (2 mm contacts) Crimp termination: 0.14 - 1 mm ² (1 mm contacts)
	Rated impulse voltage 6 kV (2 mm contacts) 4 kV (1 mm contacts)		Material Housing: nickel-plated zinc die-casting, nickel-plated brass Insert: PA, Seal: FPM
	Rated current (A) 26A/3+PE+4, 25A/5+PE (2 mm contacts) 7 A (1 mm contacts)		Protection rating IP68 (10h/1m)
	Pollution degree 3		Cycle of mechanical operation 500
	Contact resistance < 4 mOhm		Temperature range -25°C up to +125°C
	Contacts Gold-plated brass		
	Number of contacts 3+PE+4 (2 mm/1 mm) 5+PE (2 mm)		

Article number	Article description	Contacts included	Clamping range in mm	Pin configuration	Pieces/PU
Type LS1 D6 short, cable connector, 6-pin, for female contacts					
24441279	LS1 D6	6	8.5 - 11	5+PE	5
24441280	LS1 D6		8.5 - 11	5+PE	20
24441281	LS1 D6	6	10.5 - 15.5	5+PE	5
24441282	LS1 D6		10.5 - 15.5	5+PE	20
24441283	LS1 D6	6	7.5 - 15.5	5+PE	5
24441284	LS1 D6		7.5 - 15.5	5+PE	20
Type LS1 D6 short, cable connector, 8-pin, for female contacts					
24441285	LS1 D6	8	8.5 - 11	3+PE+4	5
24441288	LS1 D6		10.5 - 15.5	3+PE+4	20
24441286	LS1 D6	8	8.5 - 11	3+PE+4	5
24441287	LS1 D6		10.5 - 15.5	3+PE+4	20
24441289	LS1 D6	8	7.5 - 15.5	3+PE+4	5
24441290	LS1 D6		8.5 - 11	3+PE+4	5

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EPIC® POWER LS1 A6 TWIST

Circular connectors for servomotors and power supply



Info

- TWIST quick-lock technology
- Connector with 1/4 turn safely locked
- Pluggable with the market standard

Suitable contacts:

- PU = 5 pieces: the contacts are included. 2 mm contact crimp range is 0.5 - 2.5 mm².
- PU = 20 pieces: the contacts must be ordered separately

Benefits

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

Application range

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

Product features

- UL pending

Technical data



Rated voltage (V)

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

Rated impulse voltage

6 kV (2 mm contacts)
4 kV (1 mm contacts)



Rated current (A)

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



Pollution degree

3

Contact resistance

< 4 mOhm



Contacts

Gold-plated brass



Number of contacts

3+PE+4(2mm/1mm)
5+PE(2mm)



Termination methods

Crimp termination:
0.5 - 4 mm² (2 mm contacts)
Crimp termination:
0.14 - 1 mm² (1 mm contacts)



Material

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



Protection rating

IP68 (10h/1m)



Cycle of mechanical operation

500



Temperature range

-25 °C up to +125 °C

Article number	Article description	Contacts included	Clamping range in mm	Fastening type	Pin configuration	Pieces/PU
Type LS1 A6, front wall mounting, 6-pin, for female contacts						
24441291	LS1 A6	6	-	Ø 2.7 mm (4×)	5+PE	5
Type LS1 A6, front wall mounting, 8-pin, for female contacts						
24441292	LS1 A6	8	-	Ø 2.7 mm (4×)	3+PE+4	5

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SKINTOP® GRIP-M



i Info

- New: now also available with long connection thread

Benefits

- Protection against kinking and rip out of cables
- High strain relief
- For high mechanical stress
- Reliable bending and anti-kink protection

Application range

- Saddle clamp strain relief gland for harsh application conditions
- Portable equipment
- Machines and systems on building sites
- Crane and conveying machinery
- Charging infrastructure for EV's

Norm references / Approvals

- Metric connection thread acc. to DIN EN 60423
- Basis for technical information DIN IEC 62444
- Tested according to IEC 62196-1: Conductive charging of electric vehicles

Technical data

- Caution**
Refer to the instruction leaflet for the installation dimensions and torques
- Material**
Body: Nickel-plated brass
Sealing: CR/NBR
O-Ring - NBR
- Protection rating**
IP 68 - 10 bar
IP 69
- Temperature range**
-40°C to +100°C

Article number	Article designation/size	Clamping range ØF (mm)	SW wrench size (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces/PU
SKINTOP® GRIP-M						
53113180	M 16 × 1.5	4.5 – 10	20	41	7	25
53113200	M 20 × 1.5	7 – 13	24	46	8.5	25
53113210	M 25 × 1.5	9 – 17	29	48.5	8	25
53113220	M 32 × 1.5	11 – 21	36	56.6	9	25
SKINTOP® GRIP-M-XL						
53113185	M 16 × 1.5	4.5 – 10	20	46	12	25
53113205	M 20 × 1.5	7 – 13	24	49.5	12	25
53113215	M 25 × 1.5	9 – 17	29	52.5	12	25
53113225	M 32 × 1.5	11 – 21	36	62.6	15	25

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



SKINTOP® MS-M BRUSH



Info

- NEW: now also available in M 20

Benefits

- Optimum, low-resistance 360° screen contact
- Faster than any other comparable system
- Uncomplicated and reliable
- Maximum assembly freedom during adjustment

Application range

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath
- Automation systems
- High-power drives
- Frequency converters
- Conveyor and transport systems

Norm references / Approvals

- UL File Nr. E79903
- *Size M 20: UL pending

Product Make-up

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

Note

- SKINDICHT® SM-PE-M counter nut should be used to ensure optimum contact with painted, anodised or powder-coated housings

Technical data

- Caution**
Refer to Appendix T21 for the installation dimensions and torques
- Material**
Body: nickel-plated brass
Cap nut: nickel-plated brass
Insert: polyamide
EMC brush: brass wire
Sealing ring: elastomer
O-ring: elastomer
- Protection rating**
IP 68 - 10 bar (M12 - M110)
IP 69 (M12 - M63)
- Temperature range**
dynamic -25°C up to +100°C
Fixed: -40°C to +100°C

Article number	Article designation/size	Outer Ø (mm), from - to	Minimum Ø above braiding (mm)	SW wrench size (mm)	Thread length, D (mm)	Pieces /PU
SKINTOP® MS-M BRUSH						
53112507	M 20 × 1.5*	7 - 13	3	24	8	25
53112676	M 25 × 1.5	9 - 17	6	29	8	10
53112677	M 32 × 1.5	11 - 21	8	36	9	5
53112678	M 40 × 1.5	19 - 28	10	45	9	5
53112679	M 50 × 1.5	27 - 35	14	54	10	5
53112680	M 63 × 1.5	34 - 45	20	67	15	1
53112681	M 63 × 1.5 plus	44 - 55	25	75	15	1
53112501	M 75 × 1.5	53 - 63	25	95	15	1
53112500	M 75 × 1.5 plus	58 - 68	25	95	15	1
53112503	M 90 × 2	66 - 78	40	115	20	1
53112505	M 110 × 2	76 - 88	50	135	25	1
53112504	M 110 × 2 plus	86 - 98	50	135	25	1

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





SKINTOP® MULTI VENT



Info

- Compact multi cable bushing system with innovative gel technology
- Breathable pressure compensation element with membrane technology



Benefits

- Large clamping range of 4 mm and AS-I BUS entry system by elastic gel technology with innovative membrane technology
- Easy installation, high packing density
- Optimum strain relief at the entire cable bundle
- Error reduction through clear assignment of cable to be installed by a clear marker of implementing points
- Not used holes remain securely sealed

Application range

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

Product features

- Special integrated membrane equalize the pressure balance (0,65l/min) and enables humidity to stay out of the junction box
- Integrated seal for the cable & housing (captive)
- Halogen-free
- UV-, Ozon and oil resistant
- The adhesive gel provides a very easy positioning at the enclosure during the assembling

Norm references / Approvals

- UL pending

Product Make-up

- For cut-outs for 24-pin industrial connectors (36 × 112 mm)

Included

- SKINTOP® MULTI VENT including mounting material

Technical data



Certifications

UL pending



Note

Individual hole configuration on request



Material

Frame: Polycarbonat

Sealing: Gel

Pressure compensation unit: PBT, PTFE, NBR



Protection rating

IP 68



Temperature range

-30°C to +100°C

Article number	Article designation/size	Max. number of executions	Number of cables × clamping range	Pieces / PU
SKINTOP® MULTI VENT				
52220092	SKINTOP® MULTI VENT Version 1	21	6 × 8 - 12 mm, 15 × 3 - 7 mm	1
52220093	SKINTOP® MULTI VENT Version 2	20	4 × 2 - 6 mm, 8 × 4 - 8 mm, 3 × 5 - 9 mm, 2 × 8 - 12 mm, 1 × 12 - 16 mm, 2 × AS-I BUS / 2 × 2 - 4 mm	1
52220094	SKINTOP® MULTI VENT Version 3	29	29 × 2 - 6 mm	1
52220095	SKINTOP® MULTI VENT Version 4	11	8 × 8 - 12 mm, 2 × 12 - 16 mm, 1 × 16 - 20 mm	1

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





SKINDICHT® HYGIENIC BL-M



Info

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

Benefits

- For closing pre-threaded holes
- Assembling with a wrench

Application range

- Food machinery, equipment and components
- For use in product zone
- Pharmaceutical industry

Norm references / Approvals

- **NSF/ANSI 169**
Hygienic design for machinery and components
- **ECOLAB®**
Industry standard in the field of professional cleaning and disinfection in the food and beverage industry

FDA 21 CFR 177.2600

Special sealing element for food and beverage industry in North America

DIN EN 1672-2

Guideline for the design of machinery

DIN EN ISO 14 159

Security of machinery Hygienic requirements for the design of machinery

Product Make-up

- Material and shape provide an easy and safe cleaning
- By the blue coloring of the sealing material clearly distinguishable from foodstuffs
- Metric connection thread acc. to DIN EN 60423
- Basis for technical information DIN IEC 62444

Technical data



Material

Body: stainless steel – V4A (1.4404 / 316L)
Sealing: special elastomer (FKM)



Protection rating

IP 68 – 10 bar



Temperature range

-20°C to +100°C

Article number	Article designation / size	SW wrench size (mm)	Overall length (mm)	Thread length (mm)	Outer Ø (mm)	Pieces / PU
SKINDICHT® HYGIENIC BL-M						
52103490	M 12 × 1.5	16	16.9	6.5	18.8	5
52103491	M 16 × 1.5	20	17.9	7	22.8	5
52103492	M 20 × 1.5	24	19.9	8	26.8	5
52103493	M 25 × 1.5	29	20.7	8	31.8	5

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



SKINDICHT® HYGIENIC BL-NPT



i Info

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

Benefits

- For closing pre-threaded holes
- Assembling with a wrench

Application range

- Food machinery, equipment and components
- For use in product zone
- Pharmaceutical industry

Norm references / Approvals

- **NSF/ANSI 169**
Hygienic design for machinery and components
- **ECOLAB®**
Industry standard in the field of professional cleaning and disinfection in the food and beverage industry

- **FDA 21 CFR 177.2600**
Special sealing element for food and beverage industry in North America
- **DIN EN 1672-2**
Guideline for the design of machinery
- **DIN EN ISO 14 159**
Security of machinery Hygienic requirements for the design of machinery

Product Make-up

- Material and shape provide an easy and safe cleaning
- By the blue coloring of the sealing material clearly distinguishable from foodstuffs
- NPT connection thread acc. to ASME B1.20.1 - 2013

Technical data

- Body: stainless steel - V4A (1.4404 / 316L)
Sealing: special elastomer (FKM)
- Protection rating**
IP 68 - 10 bar
- Temperature range**
-20°C to +100°C

Article number	Article designation / size	SW wrench size (mm)	Overall length (mm)	Thread length (mm)	Outer Ø (mm)	Pieces / PU
SKINDICHT® HYGIENIC BL-NPT						
52103494	NPT 1/4"	16	17.4	7	18.8	5
52103495	NPT 3/8"	20	18.7	7.8	22.8	5
52103496	NPT 1/2"	24	20.3	8.4	26.8	5
52103497	NPT 3/4"	29	21.5	8.8	31.8	5

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FC STRIP PLUS stripping tool



Info

- Dismantling tool with 3 adjustable blades

Benefits

- 1-, 2- and 3-level stripping in one operation
- Time-saving
- Prevents cable damage
- Higher Flexibility

Application range

- Coaxial and round data cables (e.g. UNITRONIC, ETHERLINE, ...)
- from 2.5 – 8 mm diameter
- Fast-Connect cables

Product features

- Blade distances and cutting depth can be set individually

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000163

ETIM 5.0/6.0 Class-Description:
Cable stripping tool

Article number	Article designation	For outer diameter (mm)	Suitable for	Pieces / PU
FC STRIP PLUS stripping tool				
21124045	FC STRIP PLUS	2.5 – 8.0	Fast Connect cables	1
21124092	FC STRIP PLUS spare blades 3 pcs	–	–	3

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ALLROUNDER STRIP dismantling tool

i Info

- The “Allrounder”



Benefits

- No adjustment of cutting depth required
- Also suitable for asymmetric cable design (ÖLFLEX Heat, etc.)
- Higher Flexibility
- Multifunctional: with shielded cables the different layers can be easily removed with the tool

Application range

- Asymmetric cable design (ÖLFLEX HEAT, HITRONIC DUPLEX, ...)
- Stripping of cable sheathing and conductor insulation of round and flat cables with two parallel blades (4–15 mm Ø (round cables), max. 15 mm width (flat cables))

Product features

- Extra blade for longitudinal cut
- 2 stripping notches with length stop for stripping conductors
- Locator Box for limiting cutting depth

Technical data

Classification ETIM 5/6
 ETIM 5.0/6.0 Class-ID: EC000163
 ETIM 5.0/6.0 Class-Description:
 Cable stripping tool

Article number	Article designation	Pieces / PU
ALLROUNDER STRIP dismantling tool		
61735835	ALLROUNDER STRIP	1
61735836	ALLROUNDER Locator Box	1

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FIBRE STRIP dismantling tool



Benefits

- No adjustment of cutting depth required
- Also suitable for asymmetric cable design (ÖLFLEX Heat, etc.)

Application range

- Fibre optic cables with reinforcement elements inside sheathing

Product features

- Specially coated paralalled blades for removing harder jacketing materials of fibre optic cables (diameter <5.9mm)

Technical data

Classification ETIM 5/6
 ETIM 5.0/6.0 Class-ID: EC000163
 ETIM 5.0/6.0 Class-Description:
 Cable stripping tool

Article number	Article designation	Pieces / PU
FIBRE STRIP dismantling tool		
61735834	FIBRE STRIP	1

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Flex Tie cable tie

i Info

- Hook and loop ties for flexible use



Benefits

- For easy and quick bundling
- Cable friendly: Prevent injuries of cable outer sheathing
- Could be reused again
- No corrosion, as hook and loop ties are made of organic textiles
- No sharp edges, reduce the risk of injury

Application range

- Bundling of cables and conduits
- Vibration resistant (e.g. robotics)
- Where frequently changes or constant access is required (e.g. event technology, laboratories)
- Bundling of sensitive cables (e.g. fiber optic cables, data cables)

Design

- Tie: with slotted head
- Roll: Endless roll à 25m to cut individually
- Strap: made of hook and separate loop, with buckle

Norm references / Approvals

- Fire behaviour according to UL 94 V2, see table

Technical data

ETIM **Classification ETIM 5/6**
 ETIM 5.0/6.0 Class-ID: EC000046
 ETIM 5.0/6.0 Class-Description: Cable tie

RAL **Colour delivered**
 Black

Material
 Tie + Roll: PP and Velour PA
 Strap: PA 6, PA 6.6., PU coating

Article number	Article description	Fire behaviour according to UL 94 V2	Length (mm)	Width (mm)	Pieces / PU
Flex Tie cable tie					
61823711	Flex Tie 150 × 20	yes	150	20	100
61823712	Flex Tie 200 × 20	yes	200	20	100
61823713	Flex Tie 330 × 20	yes	330	20	100
61823717	Flex Tie Roll 10 (25 m)	yes	–	10	1
61823718	Flex Tie Roll 20 (25 m)	yes	–	20	1
61823719	Flex Tie Roll 30 (25 m)	yes	–	30	1
61823714	Flex Strap 300 × 25	no	330	25	10
61823715	Flex Strap 360 × 25	no	360	25	10
61823716	Flex Strap 480 × 25	no	480	25	10

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SKINTOP®
SILVYN®
FLEXIMARK®
ACCESSORIES
APPENDIX

Drum cardboard



i Info

- The cardboard can also be ordered filled with a cable. In this case, please contact our customer service.

Benefits

- Simple unwinding directly from the box
- Can be stacked at the Location
- Dispenser solution (reusable)
- Cardboard provides protection against damage and contamination

Application range

- Transporting, storing and unwinding of cable drums

Product features

- Folding and tilting system allows easy insertion of the drum
- Suitable for drums with a flange diameter of 40 cm
- Manual transport by means of carrier handles
- For unwinding, the cable is simply pulled through the opening in the cardboard

Technical data

	Max. load 30 kg
	Metrics Drum width: up to 40 cm Dimensions: L=480 mm, W=430 mm, H=450 mm

Article number	Article description
85008061	Drum cardboard

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Spooling pallet



Info

- The pallet can also be ordered filled with a cable. In this case, please contact our customer service.

Benefits

- By using the rolls, the unwinding of the cable directly from the pallet is possible in a simple way
- No need to move the drum thus reducing any risk of damage
- Reusable

Application range

- Transporting, storing and unwinding of cable drums

Product features

- Pallet frame with two integrated rolls
- Suitable for drums with a flange diameter of 90 cm
- Pallet can be picked up from all four sides by the forklift
- Suitable for export as IPPC treated

Technical data



Weight
16 kg

Max. load
500 kg



Metrics
Drum width: up to 90 cm
Dimensions: L=800 mm, W=800 mm

Article number	Article description
85008062	Spooling pallet 800 × 800

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TRONIC Single core cart



Benefits

- Easy removal of single core cables
- Simple placement of the coils (short set-up times)
- More flexible storage capacity
- Kanban capable

Application range

- Storage of single cores
- Mobile solution “article to man / machine”

Product features

- TRONIC module consists of 2 TRONIC mounted on a holder

Suitable cables

- H05V-K
- H07V-K
- MULTI-STANDARD SC 1, 2.1, 2.2

Technical data



Material
Lacquered steel



Max. load per TRONIC
7 kg



Metrics
Suitable for cable coils:
Cable outer diameter: max. 10 mm
Coil diameter: max. 295 mm
Inner diameter: 80 – 180 mm
Height: max. 80 mm

Article number	Article designation	Contains	Capacity rings	Dimensions	Weight
Single modules					
85001632	TRONIC	–	1	D=310, H=103	0.7 kg
85001625	TRONIC Module	–	2	L=W=335, H=280	2.6 kg
Carts incl. modules					
85001621	TRONIC Module single core cart 6×2	6 TRONIC modules	12	L=610, W=580, H=1160	29 kg
85001624	TRONIC Single core cart 12	12 TRONIC	12	L=670, W=610, H=950	19 kg
85001622	TRONIC Module single core cart 18×2	18 TRONIC modules	36	L=840, W=820, H=1400	93 kg
85001629	TRONIC Single core cart 48	48 TRONIC	48	L=865, W=770, H=1460	106 kg

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TRONIC is a brand name of the company Meccanica Nicoletti S.R.L.

Notes

A series of horizontal dotted lines spanning the width of the page, intended for taking notes.

Notes

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The following applies for the use of our products

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

The safety of our products is closely associated with how they are used. A knowledge of and adherence to the respective international/national standards of use (e.g. DIN VDE 0100; 0298) are

mandatory. There are particular risks if installed improperly. This applies to all our products/items:

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

Safety

Without exception, our products are tested for application safety in accordance with defined standards and our own regulations, which complement the standards. Relevant legal requirements and safety regulations are also observed. Provided due care and attention is paid, the possibility of product-specific danger to the user may thus reasonably be excluded. Where products are used carelessly or incorrectly, however, considerable danger to persons and the

environment may arise. For this reason, our cables must only be processed and/or used responsibly by trained electricians or specialists. This catalogue contains general information for the application of each product. Independent of such information, the application standards DIN VDE 0298 and DIN VDE 0891 for cables will apply. Excerpts from these standards, as well as complementary selection and application tables, design and installation

guidelines, are contained in the tables in the appendix to this catalogue. Our machines and installation tools are - where necessary - designed in accordance with the machine guidelines and display the CE identification mark. It must be noted, however, that our machines and installation tools must only be used by trained specialist personnel and for the purpose for which they were designed.

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