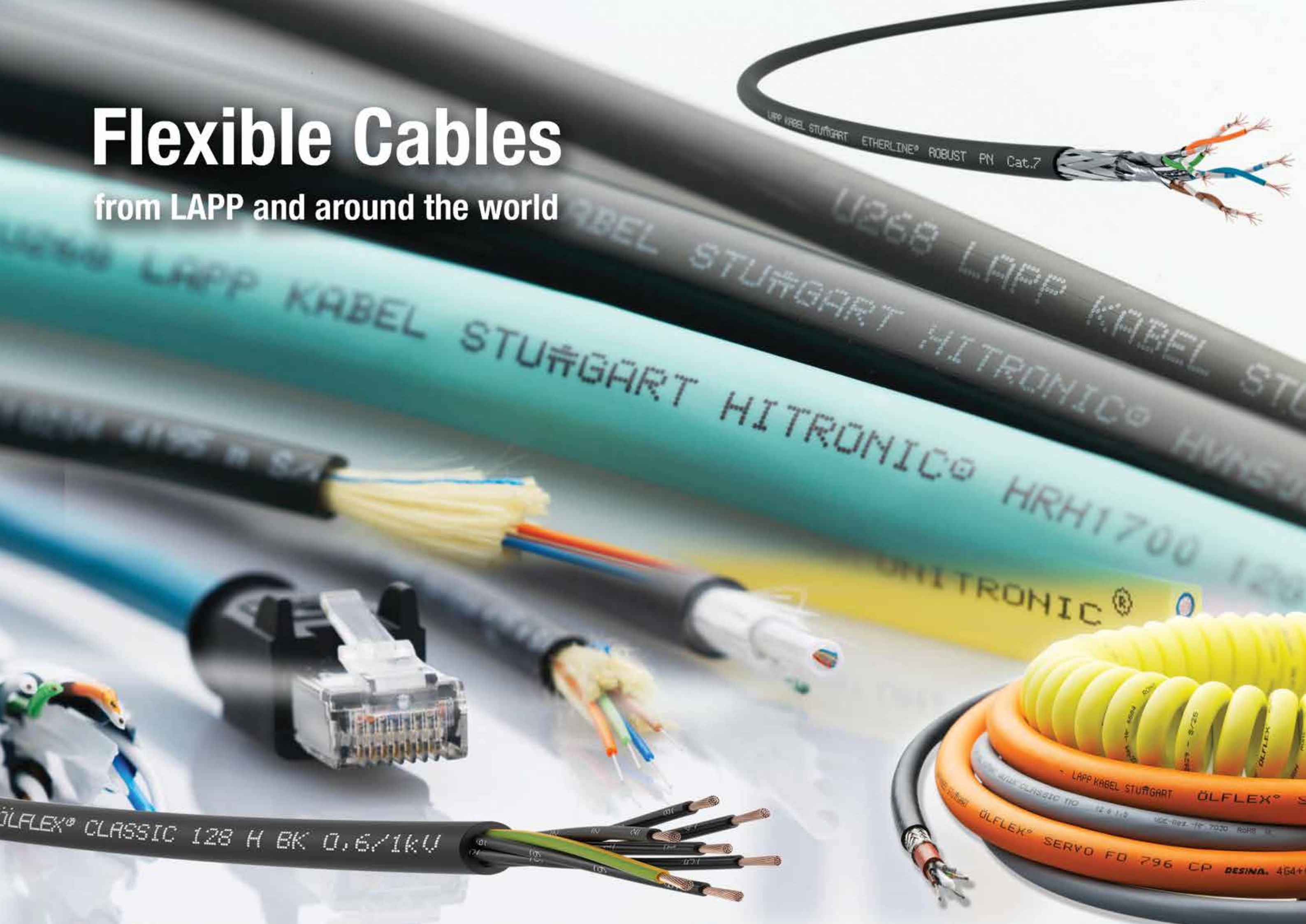


Flexible Cables

from LAPP and around the world



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

Various applications • PVC outer sheath and numbered cores



ÖLFLEX® CLASSIC 110

VDE-registered oil-resistant PVC control cable for a wide range of applications



Benefits

- Wide choice of standardised lengths and individual cuts
- Very broad range, items with up to 100 conductors

Application range

- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Dry or damp rooms that are subject to medium mechanical loads
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)
- In power chains for a travelling distance up to 5 m and 0.2 ... 1 million bending cycles, for following dimensions: 0.5 to 2.5mm² and 2 to 7 conductors

Product features

- Flame-retardant according IEC 60332-1-2
- Good chemical resistance
- Oil-resistant according to DIN EN 50290-2-22 (TM54)

Norm references / Approvals

- VDE reg. no. 7030 for the following sizes: up to 2.5 mm²: 2 - 65 cores from 4 mm²: 2 - 7 cores from 25 mm²: 2 - 5 cores

Product Make-up

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



info

- VDE certificate of conformity with factory surveillance
- More than 140 items with up to 100 conductors

Technical data

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

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

**Conductor stranding**
Fine wire according to DIN EN 60228 (VDE 0295), class 5 / IEC 60228 class 5

**Torsion movement in WTG**
TW-0 & TW-1

**Minimum bending radius**
Occasional flexing: 10 x outer diameter
In power chains: 15 x outer diameter
Fixed installation: 4 x 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: -15°C to +70°C
In power chains: -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 110				
1119752	2 X0.5	4.8	9.6	35
1119003	3 G0.5	5.1	14.4	42
1119753	3 X0.5	5.1	14.4	42
1119004	4 G0.5	5.7	19.2	54
1119754	4 X0.5	5.7	19.2	54
1119005	5 G0.5	6.2	24	63
1119755	5 X0.5	6.2	24	63
1119007	7 G0.5	6.7	33.6	81
1119757	7 X0.5	6.7	33.6	81
1119010	10 G0.5	8.6	48	116
1119012	12 G0.5	8.9	58	131
1119014	14 G0.5	9.5	67	153
1119018	18 G0.5	10.5	86.4	188
1119021	21 G0.5	11.7	101	221
1119025	25 G 0.5	12.4	120	261
1119030	30 G0.5	13.3	144	304
1119040	40 G0.5	15.4	192	400
1119052	52 G0.5	17.3	250	517
1119065	65 G0.5	19.6	312	644
1119080	80 G0.5	21.1	384	780
1119100	100 G0.5	23.6	480	975
1119802	2 X0.75	5.4	14.4	45
1119103	3 G0.75	5.7	21.6	55
1119803	3 X0.75	5.7	21.6	55
1119104	4 G0.75	6.2	28.8	66
1119804	4 X0.75	6.2	28.8	66
1119105	5 G0.75	6.7	36	79
1119805	5 X0.75	6.7	36	79
1119107	7 G0.75	7.3	50	101
1119807	7 X0.75	7.3	50	101
1119109	9 G0.75	9.4	65	137
1119112	12 G0.75	9.9	86	171
1119812	12 X0.75	9.9	86	171
1119115	15 G0.75	10.9	108	209
1119116	16 G0.75	11.7	130	244
1119118	18 G0.75	11.7	130	244
1119121	21 G0.75	13.0	151	286
1119125	25 G0.75	13.8	180	337
1119134	34 G0.75	15.9	245	448
1119141	41 G0.75	17.4	296	538

Various applications • PVC outer sheath and numbered cores

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1119150	50 G0.75	19.2	360	648
1119165	65 G0.75	21.8	468	832
1119180	80 G0.75	23.6	576	1019
1119200	100 G0.75	26.4	718	1271
1119852	2 X1.0	5.7	19.2	53
1119203	3 G1.0	6.0	28.8	65
1119853	3 X1.0	6.0	28.8	65
1119204	4 G1.0	6.5	38.4	79
1119854	4 X1.0	6.5	38.4	79
1119205	5 G1.0	7.1	48	94
1119855	5 X1.0	7.1	48	94
1119206	6 G1.0	8.0	58	113
1119207	7 G1.0	8.0	67	126
1119857	7 X1.0	8.0	67	126
1119208	8 G1.0	9.5	77	149
1119209	9 G1.0	10.0	86	164
1119210	10 G1.0	10.2	96	180
1119212	12 G1.0	10.5	115	205
1119862	12 X1.0	10.5	115	205
1119214	14 G1.0	11.2	134	238
1119216	16 G1.0	11.8	153.6	266
1119218	18 G1.0	12.7	173	320
1119868	18 X1.0	12.7	173	320
1119220	20 G1.0	13.4	192	330
1119870	20 X1.0	13.4	192	330
1119225	25 G1.0	14.7	240	408
1119234	34 G1.0	17.1	326	551
1119236	36 G1.0	17.4	346	578
1119241	41 G1.0	18.8	394	661
1119250	50 G1.0	20.6	480	797
1119265	65 G1.0	23.6	624	1033
1119280	80 G1.0	25.3	768	1251
1119300	100 G1.0	28.3	960	1560
1119902	2 X1.5	6.3	29	68
1119303	3 G1.5	6.7	43	84
1119903	3 X1.5	6.7	43	84
1119304	4 G1.5	7.2	58	104
1119904	4 X1.5	7.2	58	104
1119305	5 G1.5	8.1	72	128
1119905	5 X1.5	8.1	72	128
1119306	6 G1.5	8.4	86.4	157
1119307	7 G1.5	8.9	101	166
1119907	7 X1.5	8.9	101	166
1119309	9 G1.5	11.4	130	221
1119310	10 G1.5	11.6	143	243
1119312	12 G1.5	12.0	173	279
1119912	12 X1.5	12.0	173	279
1119314	14 G1.5	12.7	202	323
1119318	18 G1.5	14.4	259	407
1119321	21 G1.5	15.7	302	469
1119325	25 G1.5	16.9	360	560
1119334	34 G1.5	19.4	490	746
1119341	41 G1.5	21.3	591	895
1119350	50 G1.5	23.5	720	1089
1119361	61 G1.5	25.2	878	1309
1119365	65 G1.5	26.7	936	1398
1119952	2 X2.5	7.5	48	101
1119403	3 G2.5	8.1	72	132
1119404	4 G2.5	8.9	96	163
1119405	5 G2.5	10.0	120	200
1119407	7 G2.5	11.1	168	267
1119412	12 G2.5	14.8	288	445
1119414	14 G2.5	15.8	336	515
1119418	18 G2.5	17.8	432	648
1119425	25 G2.5	20.8	600	890
1119434	34 G2.5	24.4	816	1208
1119450	50 G2.5	29.4	1200	1754
1119503	3 G4	9.9	115	201
1119504	4 G4	10.8	154	249
1119505	5 G4	12.1	192	294
1119507	7 G4	13.4	269	407
1119511	11 G4	17.6	422	634
1119512	12 G4	18.1	461	660
1119603	3 G6	11.7	172.8	289
1119604	4 G6	13.0	230	365
1119605	5 G6	14.5	288	447
1119607	7 G6	16.0	403	600
1119613	3 G10	14.6	288	466
1119614	4 G10	16.2	384	590
1119615	5 G10	18.1	480	722
1119617	7 G10	20.0	672	968
1119624	4 G16	18.8	614	1087
1119625	5 G16	21.2	768	1370
1119627	7 G16	23.4	1075	1779
1119634	4 G25	23.5	960	1582
1119635	5 G25	26.4	1200	1998
1119636	7 G25	29.1	1680	2825
1119644	4 G35	26.4	1344	2106
1119645	5 G35	29.6	1680	2635

Control cables

Various applications • PVC outer sheath and numbered cores



ÖLFLEX® CLASSIC 110 BLACK

VDE-registered oil-resistant PVC control cable with black outer sheath for a wide range of applications



Benefits

- Suitable for outdoor applications
- Wide choice of standardised lengths and individual cuts

Application range

- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Dry or damp rooms that are subject to medium mechanical loads
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)
- In power chains for a travelling distance up to 5 m and 0.2 ... 1 million bending cycles, for following dimensions: 0.5 to 2.5mm² and 2 to 7 conductors
- Suitable for outdoor applications

Product features

- Flame-retardant according IEC 60332-1-2
- Good chemical resistance
- Oil-resistant according to DIN EN 50290-2-22 (TM54)
- UV and weather-resistant according to ISO 4892-2

Norm references / Approvals

- VDE reg. no. 7030 for the following sizes: up to 2.5 mm²: 2 - 65 cores from 4 mm²: 2 - 7 cores from 25 mm²: 2 - 5 cores

Product Make-up

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8 / 1
- Cores twisted in layers
- PVC outer sheath, black (RAL 9005)



info

- With black outer sheath, UV-resistant
- VDE certificate of conformity with factory surveillance

Technical data

	Classification ETIM 5.0 Class-ID: EC000104 ETIM 5.0 Class-Description: Control cable
	Core identification code Black with white numbers acc. to VDE 0293-1
	Conductor stranding Fine wire according to DIN EN 60228 (VDE 0295), class 5 / IEC 60228 class 5
	Torsion movement in WTG TW-0 & TW-1
	Minimum bending radius Occasional flexing: 10 x outer diameter In power chains: 15 x outer diameter Fixed installation: 4 x outer diameter
	Nominal voltage U ₀ /U: 300/500 V
	Test voltage 4000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Temperature range Occasional flexing: -15°C to +70°C In power chains: -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 110 BLACK				
1119809	2 X0.75	5.4	14.4	45
1119871	3 G0.75	5.7	21.6	55
1119892	3 X0.75	5.7	21.6	55
1119872	4 G0.75	6.2	28.8	66
1119893	4 X0.75	6.2	28.8	66
1119873	5 G0.75	6.7	36	79
1119874	7 G0.75	7.3	50.4	101
1119875	12 G0.75	9.9	86.4	171
1119876	18 G0.75	11.7	130	244
1119877	25 G0.75	13.8	180	337
1119878	34 G0.75	15.9	245	448
1119894	2 X1.0	5.7	19.2	53
1119244	3 G1.0	6.0	28.8	65
1119895	3 X1.0	6.0	28.8	65
1119245	4 G1.0	6.5	38.4	79
1119896	4 X1.0	6.5	38.4	79
1119246	5 G1.0	7.1	48	94
1119897	5 X1.0	7.1	48	94
1119247	7 G1.0	8.0	67.2	126
1119248	12 G1.0	10.5	115	205
1119249	18 G1.0	12.7	173	290
1119251	25 G1.0	14.7	240	390
1119252	34 G1.0	17.1	326	551

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1119898	2 X1.5	6.3	28.8	68
1119020	3 G1.5	6.7	43.2	84
1119899	3 X1.5	6.7	43.2	84
1119879	4 G1.5	7.2	57.6	104
1119900	4 X1.5	7.2	57.6	104
1119880	5 G1.5	8.1	72	128
1119911	5 X1.5	8.1	72	128
1119881	7 G1.5	8.9	101	166
1119913	7 X1.5	8.9	101	166
1119882	12 G1.5	12.0	173	279
1119883	18 G1.5	14.4	259	407
1119884	25 G1.5	16.9	360	560
1119914	2 X2.5	7.5	48	100
1119885	3 G2.5	8.1	72	132
1119886	4 G2.5	8.9	96	163
1119887	5 G2.5	10.0	120	200
1119888	7 G2.5	11.1	168	267
1119889	12 G2.5	14.8	288	444
1119890	18 G2.5	17.8	432	648
1119891	25 G2.5	20.8	600	890
1119915	3 G4	9.9	115.2	201
1119916	4 G4	10.8	154	249
1119917	5 G4	12.1	192	315
1119918	4 G6	13.0	230	365
1119919	5 G6	14.5	288	447
1119920	4 G10	16.2	384	590
1119921	5 G10	18.1	480	722
1119922	4 G16	18.8	614	1087
1119923	5 G16	21.2	768	1370



info

- Good outdoor performance

Technical data

	Classification ETIM 5.0 Class-ID: EC000104 ETIM 5.0 Class-Description: Control cable
	Core identification code Black with white numbers acc. to VDE 0293-1
	Conductor stranding Fine wire according to VDE 0295, class 5 / IEC 60228 class 5
	Torsion movement in WTG TW-0 & TW-1
	Minimum bending radius Static/Occ. moved: 4/ 15x outer diameter*
	Nominal voltage U ₀ /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

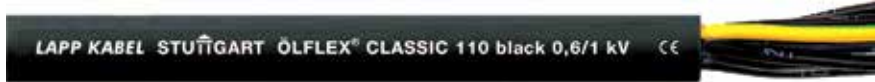
Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 BLACK 0.6/1 kV				
1120232	2 X0.75	8.3	14.4	81
1120233	3 G0.75	8.7	21.6	93
1120234	3 X0.75	8.7	21.6	93
1120235	4 G0.75	9.2	29	108
1120237	5 G0.75	9.9	36	126
1120241	7 G0.75	10.7	51	162
1120248	12 G0.75	13.4	86	236
1120251	18 G0.75	15.4	130	334
1120259	41 G0.75	21.6	296	713
1120266	2 X1.0	8.6	19.2	98
1120267	3 G1.0	9.0	29	112
1120268	3 X1.0	9.0	29	112
1120269	4 G1.0	9.6	38.4	131
1120270	4 X1.0	9.6	38.4	131
1120271	5 G1.0	10.4	48	152
1120274	7 G1.0	11.1	67	196
1120280	12 G1.0	14.0	116	286
1120284	18 G1.0	16.1	173	419
1120290	25 G1.0	18.6	240	572
1120294	34 G1.0	21.3	326	764
1120298	41 G1.0	23.2	394	891
1120306	2 X1.5	9.6	29	123
1120307	3 G1.5	10.1	43	144
1120308	3 X1.5	10.1	43	144
1120309	4 G1.5	10.8	58	170
1120311	5 G1.5	11.7	72	199
1120314	7 G1.5	12.6	101	261
1120320	12 G1.5	16.1	173	399
1120322	14 G1.5	17.0	202	448
1120324	18 G1.5	18.8	259	547
1120328	25 G1.5	21.7	360	770
1120330	34 G1.5	24.9	490	996
1120333	50 G1.5	29.8	720	1427

Various applications • PVC outer sheath and numbered cores



ÖLFLEX® CLASSIC 110 BLACK 0.6/1 kV

Control cable 0.6/1kV



Application range

- Plant engineering
- Industrial machinery
- Heating and air-conditioning systems
- Power stations
- Stage applications
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Enhanced suitability for direct burial in ground
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

- Product features
- Flame-retardant according IEC 60332-1-2
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396
- Norm references / Approvals
- Based on VDE 0250-1 and HD 627-1 S1
- Product Make-up
- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8 / 1
- PVC outer sheath, black (RAL 9005)

Control cables

Various applications • PVC outer sheath and coloured cores



ÖLFLEX® CLASSIC 100 300/500V

Colour-coded PVC control cable



Benefits

- Space-saving installation due to small cable diameters
- High electrical performance due to 4 kV test voltage
- High flexibility due to short-twisted conductor layers
- Now available with conductor cross-section from 2.5mm² as 300/500V version

Application range

- Plant engineering
- Industrial machinery
- Heating and air-conditioning systems
- Power stations
- Dry or damp rooms that are subject to medium mechanical loads
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

Product features

- Flame-retardant according IEC 60332-1-2
- Good chemical resistance
- Norm references / Approvals
- Based on IEC 60227-5 and EN 50525-2-51

Product Make-up

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

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 100 300/500 V				
00100004	2 X 0.5	4.8	9.6	35
00100014	3 G 0.5	5.1	14.4	42
00101224	3 X 0.5	5.1	14.4	42
00100024	4 G 0.5	5.7	19.2	54
00101234	4 X 0.5	5.7	19.2	54
00100034	5 G 0.5	6.2	24	63
00101244	5 X 0.5	6.2	24	63
0010005	7 G 0.5	6.7	33.6	81
0010007	10 G 0.5	8.6	48	116
0010008	12 G 0.5	8.9	58	133
0010011	21 G 0.5	11.7	99	223
0010012	24 G 0.5	12.4	114	254
0010016	40 G 0.5	15.4	192	404
00100214	2 X 0.75	5.4	14.4	45
00100224	3 G 0.75	5.7	21.6	55
00101254	3 X 0.75	5.7	21.6	55
00100234	4 G 0.75	6.2	28.8	66
00101264	4 X 0.75	6.2	28.8	66
00100244	5 G 0.75	6.7	36	79
00101274	5 X 0.75	6.7	36	79
0010025	6 G 0.75	7.3	43.3	104
0010026	7 G 0.75	7.3	50.4	109
0010027	8 G 0.75	8.8	56	123
0010028	9 G 0.75	9.4	63	144
0010029	10 G 0.75	9.6	72	153
0010030	12 G 0.75	9.9	86.4	176
0010031	15 G 0.75	10.9	108	211
0010032	18 G 0.75	11.7	129.6	268
0010033	21 G 0.75	13.0	151	293
0010034	25 G 0.75	13.8	180	374
0010036	40 G 0.75	17.3	288	571
0010037	50 G 0.75	19.2	360	698
00100414	2 X 1.0	5.7	19.2	53
00100424	3 G 1.0	6.0	28.8	65
00102034	3 X 1.0	6.0	28.8	65
00100434	4 G 1.0	6.5	38.4	79
00102044	4 X 1.0	6.5	38.4	79
00100444	5 G 1.0	7.1	48	94
00102054	5 X 1.0	7.1	48	94
0010046	7 G 1.0	8.0	67	131
0010050	12 G 1.0	10.5	115	215
0010053	18 G 1.0	12.7	173	315
0010056	25 G 1.0	14.7	240	449
00100634	2 X 1.5	6.3	28.8	68
00100644	3 G 1.5	6.7	43.2	84
00101284	3 X 1.5	6.7	43.2	84
00100654	4 G 1.5	7.2	57.6	104

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
00101294	4 X 1.5	7.2	57.6	104
00100664	5 G 1.5	8.1	72	128
00101304	5 X 1.5	8.1	72	128
0010068	7 G 1.5	8.9	101	166
0010071	12 G 1.5	12.0	173	307
0010074	18 G 1.5	14.4	259	465
0010076	25 G 1.5	16.9	360	655
1120800	2 X 2.5	7.5	48	100
1120801	3 G 2.5	8.1	72	132
1120802	4 G 2.5	8.9	96	163
1120803	5 G 2.5	10.0	120	200
1120804	7 G 2.5	11.1	168	267
1120805	2 X 4	9.2	77	160
1120806	3 G 4	9.9	115.2	201
1120807	4 G 4	10.8	153.6	263
1120808	5 G 4	12.1	192	315
1120809	7 G 4	13.4	269	407
1120810	3 G 6	11.7	174	289
1120811	4 G 6	13.0	230	352
1120812	5 G 6	14.5	288	470
1120813	7 G 6	16.0	403	600
1120814	3 G 10	14.6	288	466
1120815	4 G 10	16.2	384	590
1120816	5 G 10	18.1	480	722
1120817	3 G 16	17.0	460.8	720
1120818	4 G 16	18.8	614.4	1067
1120819	5 G 16	21.2	768	1370
1120820	3 G 25	21.0	720	1250
1120821	4 G 25	23.5	960	1582
1120822	5 G 25	26.4	1200	1998
1120823	3 G 35	23.7	1008	1700
1120824	4 G 35	26.4	1344	2106
1120825	5 G 35	29.6	1680	2635
1120826	3 G 50	29.1	1440	2200
1120827	4 G 50	32.4	1920	2800
1120828	5 G 50	36.5	2400	3600

info

- Nominal voltage U_0/U : 300/500V
- Identical to previous ÖLFLEX CLASSIC 100 up to 1,5mm² but with extended range of cross-section
- For nominal voltage U_0/U : 450/750V or higher conductor cross-sections see ÖLFLEX® CLASSIC 100 450/750V

Technical data

	Classification ETIM 5.0 Class-ID: EC0001578 ETIM 5.0 Class-Description: Flexible cable
	Core identification code Up to 5 cores: colour-coded according to VDE 0293-308, From 6 cores: ÖLFLEX® colour code
	Conductor stranding Fine wire according to VDE 0295, class 5/IEC 60228 class 5
	Torsion movement in WTG TW-0 & TW-1
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 4 x outer diameter
	Nominal voltage U_0/U : 300/500 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



info

- High mechanical strength
- Good oil resistance
- The classic for multi-functional use

Technical data

	Classification ETIM 5.0 Class-ID: EC000104 ETIM 5.0 Class-Description: Control cable
	Core identification code Black with white numbers acc. to VDE 0293-1
	Conductor stranding Fine wire according to VDE 0295, class 5/IEC 60228 class 5
	Minimum bending radius Flexible use: 12.5 x outer diameter Fixed installation: 4 x outer diameter
	Nominal voltage U_0/U : 300/500 V
	Test voltage 4000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Temperature range Occasional flexing: -5°C to +70°C Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 400 P - sheath colour: grey				
1312802	2 X 0.5	4.8	10	32
1312003	3 G 0.5	5.1	15	43
1312803	3 X 0.5	5.1	15	43
1312004	4 G 0.5	5.7	19.2	50
1312804	4 X 0.5	5.7	19.2	50
1312005	5 G 0.5	6.2	24	59
1312805	5 X 0.5	6.2	24	59
1312007	7 G 0.5	6.7	34	73
1312012	12 G 0.5	8.9	57.6	125
1312018	18 G 0.5	10.5	87	180
1312025	25 G 0.5	12.4	120	250
1312034	34 G 0.5	14.3	164	333
1312041	41 G 0.5	15.7	197	400
1312852	2 X 0.75	5.4	14.4	41
1312103	3 G 0.75	5.7	21.6	51
1312853	3 X 0.75	5.7	21.6	51
1312104	4 G 0.75	6.2	28.8	62
1312854	4 X 0.75	6.2	28.8	62
1312105	5 G 0.75	6.7	36	74
1312107	7 G 0.75	7.3	50	97
1312112	12 G 0.75	9.9	86.4	163
1312118	18 G 0.75	11.7	129.6	234
1312125	25 G 0.75	13.8	180	324
1312134	34 G 0.75	15.9	244.8	431
1312141	41 G 0.75	17.4	295.2	529
1312902	2 X 1.0	5.7	19.2	48
1312203	3 G 1.0	6.0	28.8	61
1312903	3 X 1.0	6.0	28.8	61
1312204	4 G 1.0	6.5	38.4	74
1312904	4 X 1.0	6.5	38.4	74
1312205	5 G 1.0	7.1	48	89
1312207	7 G 1.0	8.0	67	116
1312212	12 G 1.0	10.5	115	197
1312218	18 G 1.0	12.7	173	289
1312225	25 G 1.0	14.7	240	412
1312234	34 G 1.0	17.1	326.4	532

Harsh conditions • High mechanical and chemical resistance



ÖLFLEX® CLASSIC 400 P

Abrasion and oil-resistant control cable with PUR sheath for increased application requirements



Benefits

- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Compatible with a multitude of acidic cleaning and disinfection solutions
- Also available as DESINA® compliant power cable with black outer sheath colour

Application range

- Industrial machinery and machine tools
- Measurement, control and electrical applications
- Food production and packaging machinery
- Very suitable for oily wet areas within machinery and production lines that are subject to normal mechanical stress
- Outdoor use is possible within the indicated operating temperature range

Product features

- High oil-resistance
- Abrasion and notch-resistant
- Low-adhesive surface
- Resistant to hydrolysis and microbes
- Norm references / Approvals
- Based on VDE 0285
- Certified resistance to disinfection and cleaning solutions used in food and beverage industry

Product Make-up

- Fine-wire, bare copper conductor
- Core insulation: special PVC
- Cores twisted in layers
- Special polyurethane outer sheath (PUR)
- Sheath colour: silver grey (RAL 7001)
- DESINA®-compliant: black (RAL 9005)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1312241	41 G 1.0	18.8	393.6	638
1312952	2 X 1.5	6.3	29	63
1312303	3 G 1.5	6.7	43	79
1312953	3 X 1.5	6.7	43	79
1312304	4 G 1.5	7.2	58	98
1312954	4 X 1.5	7.2	58	98
1312305	5 G 1.5	8.1	72	121
1312307	7 G 1.5	8.9	101	159
1312312	12 G 1.5	12.0	173	268
1312318	18 G 1.5	13.4	259.5	392
1312325	25 G 1.5	16.9	360	531
1312334	34 G 1.5	19.4	489.6	722
1312341	41 G 1.5	21.3	590.4	867
1312403	3 G 2.5	8.1	72	132
1312404	4 G 2.5	8.9	96	163
1312405	5 G 2.5	10.0	120	186
1312407	7 G 2.5	11.1	168	267
1312412	12 G 2.5	14.8	288	445
1312504	4 G 4	10.8	154	237
1312505	5 G 4	12.1	192	291
1312507	7 G 4	13.4	269	391
1312604	4 G 6	13.0	230.4	327
1312605	5 G 6	14.5	288	424
1312607	7 G 6	16.0	403	580
1312614	4 G 10	16.2	384	567
1312615	5 G 10	18.1	480	695
1312617	7 G 10	20.0	672	937
1312624	4 G 16	18.8	614.4	1064
ÖLFLEX® CLASSIC 400 P DESINA - sheath colour: black				
1312970	4 G 1.5	7.2	58	98
1312981	7 G 1.5	8.8	101	159
1312983	11 G 1.5	11.6	158	228
1312973	4 G 2.5	8.9	96	163
1312974	4 G 4	10.8	154	237
1312975	4 G 6	13.0	230.4	350
1312976	4 G 10	16.2	384	567
1312978	4 G 25	23.5	960	1582

Screened Control cables

Various applications • PVC outer sheath and numbered cores



ÖLFLEX® CLASSIC 110 CY

Screened PVC control cable with transparent outer sheath



Benefits

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

Application range

- Plant engineering
- Industrial machinery
- Heating and air-conditioning systems
- Conveyor and transport systems
- In EMC-sensitive environments (electromagnetic compatibility)

Product features

- Flame-retardant according IEC 60332-1-2
- Good chemical resistance
- High degree of screening low transfer impedance (max. 250 Ω/km at 30 MHz)

Norm references / Approvals

- VDE reg. no. 7030

Product Make-up

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- Cores twisted in layers
- PVC inner sheath, grey
- Tinned-copper braiding
- PVC outer sheath, transparent



info

- EMC-compliant
- VDE reg. no. 7030

Technical data



Classification

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



Core identification code

Black with white numbers acc. to VDE 0293-1



Conductor stranding

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



Minimum bending radius

Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter



Nominal voltage

U₀/U: 300/500 V



Test voltage

4000 V



Protective conductor

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

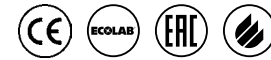


Temperature range

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

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 CY				
1135752	2 X0.5	7.0	41	75
1135003	3 G0.5	7.3	45.5	83
1135753	3 X0.5	7.3	45.5	83
1135004	4 G0.5	7.9	55	99
1135754	4 X0.5	7.9	55	99
1135005	5 G0.5	8.4	66	112
1135755	5 X0.5	8.4	66	112
1135007	7 G0.5	8.9	80.5	132
1135757	7 X0.5	8.9	80.5	132
1135012	12 G0.5	11.3	138.5	202
1135762	12 X0.5	11.3	138.5	202
1135018	18 G0.5	13.3	156.4	289
1135025	25 G0.5	15.2	250	378
1135030	30 G0.5	16.1	297	429
1135040	40 G0.5	18.2	343	542
1135802	2 X0.75	7.4	46	86
1135103	3 G0.75	7.9	57.9	100
1135803	3 X0.75	7.9	57.9	100
1135104	4 G0.75	8.4	64	115
1135804	4 X0.75	8.4	64	115
1135105	5 G0.75	8.9	77.4	130
1135805	5 X0.75	8.9	77.4	130
1135107	7 G0.75	9.7	102	161
1135807	7 X0.75	9.7	102	161
1135112	12 G0.75	12.3	177	247
1135812	12 X0.75	12.3	177	247
1135118	18 G0.75	14.5	243	356
1135818	18 X0.75	14.5	243	356
1135125	25 G0.75	16.6	307.3	465
1135134	34 G0.75	18.9	323.2	601
1135840	40 X0.75	20.5	369.4	734
1135141	41 G0.75	20.6	488	728
1135852	2 X1.0	7.9	56	98
1135203	3 G1.0	8.2	65.3	111
1135853	3 X1.0	8.2	65.3	111
1135204	4 G1.0	8.7	78.1	130
1135854	4 X1.0	8.7	78.1	130
1135205	5 G1.0	9.5	89.4	153
1135207	7 G1.0	10.2	113.3	185
1135212	12 G1.0	13.3	188.1	307
1135216	16 G1.0	14.6	216	390
1135218	18 G1.0	15.5	286	418
1135225	25 G1.0	17.5	388.5	544

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1135234	34 G1.0	20.3	505	738
1135241	41 G1.0	22.0	578	864
1135250	50 G1.0	23.8	688	1011
1135902	2 X1.5	8.5	65	117
1135303	3 G1.5	8.9	83	136
1135903	3 X1.5	8.9	83	136
1135304	4 G1.5	9.6	100	163
1135904	4 X1.5	9.6	100	163
1135305	5 G1.5	10.3	125	188
1135905	5 X1.5	10.3	125	188
1135307	7 G1.5	11.3	149	237
1135907	7 X1.5	11.3	149	237
1135312	12 G1.5	14.8	280	393
1135318	18 G1.5	17.2	389	538
1135325	25 G1.5	20.1	535	745
1135334	34 G1.5	22.8	702	964
1135341	41 G1.5	24.7	844.6	1123
1135350	50 G1.5	27.1	1006	1372
1135402	2 X2.5	9.9	112	165
1135403	3 G2.5	10.3	146	192
1135404	4 G2.5	11.3	167	233
1135405	5 G2.5	12.6	200	283
1135407	7 G2.5	13.9	288	371
1135412	12 G2.5	17.6	477.3	585
1135502	2 X4	11.4	120	247
1135504	4 G4	13.4	237	347
1135505	5 G4	14.7	280	413
1135602	2 X6	13.6	180	353
1135604	4 G6	15.8	318	485
1135605	5 G6	17.3	441	702
1135607	7 G6	18.8	530	950
1135702	2 X10	16.4	256	492
1135615	3 G10	17.4	362.4	507
1135614	4 G10	19.0	518	735
1135616	5 G10	21.3	595	847
1135617	7 G10	23.2	796	1039
1135622	2 X16	18.6	390	698
1135624	4 G16	22.2	804	1395
1135623	5 G16	24.4	935	1440
1135626	4 G25	26.9	1161	1730
1135627	5 G25	30.0	1400	2090
1135625	4 G35	30.2	1543	2210
1135628	5 G35	33.2	1901	2710



info

- EMC-compliant
- Thin and light, without inner sheath

Technical data



Classification

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



Core identification code

Black with white numbers acc. to VDE 0293-1



Conductor stranding

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



Minimum bending radius

Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter



Nominal voltage

U₀/U: 300/500 V



Test voltage

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



Protective conductor

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



Temperature range

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

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 115 CY				
1136752	2 X0.5	5.8	36	45
1136003	3 G0.5	6.1	43	59
1136753	3 X0.5	6.1	43	59
1136004	4 G0.5	6.5	49	71
1136754	4 X0.5	6.5	49	71
1136005	5 G0.5	7.0	57	86
1136755	5 X0.5	7.0	57	86
1136007	7 G0.5	7.5	69	105
1136757	7 X0.5	7.5	69	105
1136012	12 G0.5	9.9	104	200
1136762	12 X0.5	9.9	104	200
1136018	18 G0.5	11.5	141	275
1136768	18 X0.5	11.5	141	275
1136025	25 G0.5	13.4	211	350
1136775	25 X0.5	13.4	211	350
1136802	2 X0.75	6.2	43	56
1136103	3 G0.75	6.5	52	70
1136803	3 X0.75	6.5	52	70
1136104	4 G0.75	7.0	61	95
1136804	4 X0.75	7.0	61	95
1136105	5 G0.75	7.7	72	108
1136805	5 X0.75	7.7	72	108
1136107	7 G0.75	8.3	89	127
1136807	7 X0.75	8.3	89	127
1136112	12 G0.75	10.9	138	232
1136118	18 G0.75	12.7	211	315
1136125	25 G0.75	14.8	280	435
1136825	25 X0.75	14.8	280	435
1136852	2 X1.0	6.5	51	71
1136203	3 G1.0	6.8	62	86
1136853	3 X1.0	6.8	62	86
1136204	4 G1.0	7.3	74	98
1136854	4 X1.0	7.3	74	98
1136205	5 G1.0	8.1	88	121
1136855	5 X1.0	8.1	88	121
1136207	7 G1.0	8.8	112	147

Various applications • PVC outer sheath and numbered cores



ÖLFLEX® CLASSIC 115 CY

Screened PVC control cable with small outer diameter



Benefits

- Space-saving installation due to small cable diameters

Application range

- Measurement and control technology
- Office machines and systems for data processing

Product features

- Flame-retardant according IEC 60332-1-2
- Good chemical resistance
- 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, grey (RAL 7001)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1136857	7 X1.0	8.8	112	147
1136212	12 G1.0	11.5	185	285
1136218	18 G1.0	13.9	268	395
1136225	25 G1.0	15.9	354	486
1136902	2 X1.5	7.1	65	86
1136303	3 G1.5	7.5	82	112
1136903	3 X1.5	7.5	82	112
1136304	4 G1.5	8.2	100	135
1136904	4 X1.5	8.2	100	135
1136305	5 G1.5	8.9	119	148
1136905	5 X1.5	8.9	119	148
1136307	7 G1.5	9.9	154	192
1136907	7 X1.5	9.9	154	192
1136312	12 G1.5	13.0	268	365
1136318	18 G1.5	15.6	373	520
1136325	25 G1.5	17.9	530	734
1136334	34 G1.5	20.8	683	944
1136403	3 G2.5	8.9	118	151
1136404	4 G2.5	9.9	147	188
1136405	5 G2.5	11.0	176	270
1136407	7 G2.5	11.9	253	340
1136412	12 G2.5	16.0	355	540
1136418	18 G2.5	19.0	569	782
1136425	25 G2.5	22.2	827	1358
1136504	4 G4	11.6	248	305
1136507	7 G4	14.4	355	500
1136604	4 G6	14.2	343	440
1136607	7 G6	17.0	505	672
1136614	4 G10	17.2	495	680
1136615	5 G10	19.5	592	824
1136624	4 G16	20.2	800	1050
1136625	5 G16	22.6	895	1285
1136634	4 G25	25.1	1075	1413
1136635	5 G25	28.0	1400	1976
1136638	4 G35	28.0	1576	2070

Screened Control cables

Various applications • PVC outer sheath and numbered cores



ÖLFLEX® CLASSIC 115 CY BK

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



Benefits

- Conductor made of fine bare copper wires
- 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 torsional applications which are typical for the loop in wind turbine generators (WTG)
- Suitable for outdoor applications

Product features

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

Norm references / Approvals

- Based on EN 50525-2-51

Product Make-up

- U0/U: 300/500 V
- 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

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

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



info

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

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code Black with white numbers acc. to VDE 0293-334
	Conductor stranding Fine wire according to VDE 0295, class 5/IEC 60228 class 5
	Minimum bending radius Occasional fl exing: 20 x outer diameter Fixed installation: 6 x outer diameter
	Nominal voltage U0/U: 300/500 V
	Test voltage Core/core: 4000 V Core/screen: 2000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Temperature range Occasional fl exing: -5°C to +70°C Fixed installation: -40°C to +80°C
	Torsion movement in WTG TW-0 & TW-1, refer to Appendix T0



info

- Good outdoor performance
- EMC/Screened

Technical data

	Classification ETIM 5.0 Class-ID: EC000104 ETIM 5.0 Class-Description: Control cable
	Core identification code Black with white numbers acc. to VDE 0293-1
	Conductor stranding Fine wire according to VDE 0295, class 5/IEC 60228 class 5
	Minimum bending radius Static/Occ. moved: 6/20x outer diameter
	Nominal voltage U0/U: 600/1000 V
	Test voltage 4000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Temperature range Occasional flexing: -5°C to +70°C Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 CY BLACK				
1121232	2 X0.75	10.5	46	183
1121233	3 G0.75	10.9	56	210
1121235	4 G0.75	11.4	67	238
1121236	4 X0.75	11.4	67	238
1121237	5 G0.75	12.1	78	272
1121241	7 G0.75	12.9	97	315
1121247	12 G0.75	15.8	168	464
1121251	18 G0.75	18.0	229	616
1121254	25 G0.75	20.7	296	762
1121266	2 X1.0	10.8	52	198
1121267	3 G1.0	11.2	66	228
1121268	3 X1.0	11.2	66	228
1121269	4 G1.0	11.8	79	261
1121270	4 X1.0	11.8	79	261
1121271	5 G1.0	12.6	93	300
1121274	7 G1.0	13.3	117	335
1121280	12 G1.0	16.4	204	522
1121284	18 G1.0	18.7	280	687
1121290	25 G1.0	21.6	369	884
1121306	2 X1.5	11.8	69	243
1121307	3 G1.5	12.3	87	273
1121308	3 X1.5	12.3	87	273
1121309	4 G1.5	13.0	102	290
1121310	4 X1.5	13.0	102	290
1121311	5 G1.5	13.9	125	352
1121314	7 G1.5	15.0	180	448
1121320	12 G1.5	18.7	281	690

Various applications • PVC outer sheath and numbered cores



ÖLFLEX® CLASSIC 110 CY BLACK 0.6/1 kV

Screened control cable 0.6/1kV



Application range

- Plant engineering
- Industrial machinery
- Heating and air-conditioning systems
- Power stations
- For frequency converter-powered 3-phase AC motors
- In EMC-sensitive environments (electromagnetic compatibility)
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Enhanced suitability for direct burial in ground

Product features

- Flame-retardant according IEC 60332-1-2
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396
- High degree of screening low transfer impedance (max. 250 Ω/km at 30 MHz)

Norm references / Approvals

- Based on VDE 0250-1 and HD 627-1 S 1
- Product Make-up
- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- PVC inner sheath, black
- Tinned-copper braiding
- PVC outer sheath, black (RAL 9005)

Screened Control cables

Harsh conditions • High mechanical and chemical resistance



ÖLFLEX® CLASSIC 400 CP

Screened, abrasion- and oil-resistant control cable with PUR sheath for increased application requirements



Benefits

- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Compatible with a multitude of acidic cleaning and disinfection solutions
- Additional robustness thanks to inner sheath
- Copper braiding screens the cable against electromagnetic interference

Application range

- Industrial machinery and machine tools
- Measurement, control and electrical applications
- Food production and packaging machinery
- Very suitable for oily wet areas within machinery and production lines that are subject to normal mechanical stress
- Outdoor use is possible within the indicated operating temperature range

Product features

- High oil-resistance
- Abrasion and notch-resistant
- EMC-compliant
- Low-adhesive surface
- Resistant to hydrolysis and microbes

Norm references / Approvals

- Based on VDE 0285
- Certified resistance to disinfection and cleaning solutions used in food and beverage industry

Product Make-up

- Fine-wire, bare copper conductor
- Core insulation: special PVC
- Cores twisted in layers
- PVC inner sheath, grey
- Tinned-copper braiding
- Special polyurethane outer sheath (PUR)
- Sheath colour: silver grey (RAL 7001)

Technical data

	Classification ETIM 5.0 Class-ID: EC000104 ETIM 5.0 Class-Description: Control cable
	Core identification code Black with white numbers acc. to VDE 0293-1
	Conductor stranding Fine wire according to VDE 0295, class 5/IEC 60228 class 5
	Minimum bending radius Occasional flexing: 20 x outer diameter Fixed installation: 6 x outer diameter
	Nominal voltage U ₀ /U: 300/500 V
	Test voltage 4000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Temperature range Occasional flexing: -5 °C to +70 °C Fixed installation: -40 °C to +80 °C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 400 CP				
1313852	2 X 0.75	7.4	45	85
1313103	3 G 0.75	7.9	52	99
1313853	3 X 0.75	7.9	52	99
1313104	4 G 0.75	8.4	77	114
1313854	4 X 0.75	8.4	77	114
1313105	5 G 0.75	8.9	84	130
1313855	5 X 0.75	8.9	84	130
1313107	7 G 0.75	9.7	92	161
1313857	7 X 0.75	9.7	92	161
1313112	12 G 0.75	12.3	138	245
1313118	18 G 0.75	14.5	219	354
1313125	25 G 0.75	16.6	277	463
1313134	34 G 0.75	18.9	420	598
1313141	41 G 0.75	20.6	500	725
1313902	2 X 1.0	7.9	50	97
1313203	3 G 1.0	8.2	77	111
1313903	3 X 1.0	8.2	77	111
1313204	4 G 1.0	8.7	87	129
1313904	4 X 1.0	8.7	87	129
1313205	5 G 1.0	9.5	90	152
1313207	7 G 1.0	10.2	110	184
1313212	12 G 1.0	13.3	194	306
1313218	18 G 1.0	15.5	267	417
1313225	25 G 1.0	17.5	379	541
1313234	34 G 1.0	20.3	516	735
1313241	41 G 1.0	22.0	610	860

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1313952	2 X 1.5	8.5	77	116
1313303	3 G 1.5	8.9	85	135
1313953	3 X 1.5	8.9	85	135
1313304	4 G 1.5	9.6	100	162
1313954	4 X 1.5	9.6	100	162
1313305	5 G 1.5	10.3	120	187
1313955	5 X 1.5	10.3	120	187
1313307	7 G 1.5	11.3	152	236
1313957	7 X 1.5	11.3	152	236
1313312	12 G 1.5	14.8	267	392
1313318	18 G 1.5	17.2	400	536
1313325	25 G 1.5	20.1	572	742
1313334	34 G 1.5	21.9	754	960
1313341	41 G 1.5	24.7	874	1118
1313403	3 G 2.5	10.3	121	191
1313404	4 G 2.5	11.3	163	232
1313405	5 G 2.5	12.6	199	282
1313407	7 G 2.5	13.9	261	370
1313412	12 G 2.5	17.2	470	580
1313504	4 G 4	13.4	238	345
1313505	5 G 4	14.7	279	412
1313604	4 G 6	15.8	318	483
1313605	5 G 6	17.3	370	576
1313614	4 G 10	19.0	558	733
1313624	4 G 16	22.2	804	1340



info

- VDE reg. no. 7030
- Steel wire braiding for extra mechanical protection



Benefits

- Extra mechanical protection due to braided steel wire
- High electrical performance due to 4 kV test voltage

Application range

- Plant engineering
- Industrial machinery
- Heating and air-conditioning systems
- Areas with high mechanical stress
- 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
- Good chemical resistance, see catalogue appendix T1

Norm references / Approvals

- VDE reg. no. 7030

Product Make-up

- Fine-wire strand made of bare copper wires PVC insulation LAPP P8/1
- Cores twisted in layers
- PVC inner sheath, grey
- Braid of galvanized steel wires
- PVC outer sheath, transparent

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
1125752	2 X 0.5	7.8	10	87
1125003	3 G 0.5	8.1	15	95
1125004	4 G 0.5	8.5	19.2	107
1125005	5 G 0.5	9.2	24	123
1125007	7 G 0.5	9.7	33.6	147
1125010	10 G 0.5	11.6	48	196
1125012	12 G 0.5	11.9	58	213
1125014	14 G 0.5	12.5	67	237
1125018	18 G 0.5	13.9	86.4	291
1125021	21 G 0.5	14.9	101	332
1125025	25 G 0.5	15.6	120	375
1125030	30 G 0.5	16.5	144	422
1125040	40 G 0.5	18.8	192	545
1125061	61 G 0.5	21.9	293	773
1125802	2 X 0.75	8.2	14.4	97
1125103	3 G 0.75	8.5	21.6	108
1125104	4 G 0.75	9.2	28.8	126
1125105	5 G 0.75	9.7	36	146
1125107	7 G 0.75	10.3	50	172
1125109	9 G 0.75	12.4	65	224
1125112	12 G 0.75	12.9	86	260
1125115	15 G 0.75	14.1	108	315
1125118	18 G 0.75	14.9	130	355
1125125	25 G 0.75	17	180	465
1125134	34 G 0.75	19.3	245	596
1125150	50 G 0.75	22.8	360	832
1125852	2 X 1.0	8.5	19.2	106
1125203	3 G 1.0	8.8	28.8	119
1125204	4 G 1.0	9.5	38.4	141
1125205	5 G 1.0	10.1	48	164
1125207	7 G 1.0	11	67	200
1125208	8 G 1.0	12.5	77	234
1125209	9 G 1.0	13.2	86	260
1125212	12 G 1.0	13.9	115	309
1125214	14 G 1.0	14.4	134	345
1125218	18 G 1.0	15.9	173	415
1125220	20 G 1.0	16.8	192	455
1125225	25 G 1.0	18.1	240	548
1125234	34 G 1.0	20.5	326	714
1125241	41 G 1.0	22.2	394	832
1125250	50 G 1.0	24.2	480	987
1125902	2 X 1.5	9.3	29	128
1125303	3 G 1.5	9.7	43	151
1125304	4 G 1.5	10.2	58	173

Steel-wire braided PVC control cable with transparent outer sheath

ÖLFLEX® CLASSIC 110 SY - PVC control cable.

flexible cable for various applications, U0/U: 300/500V

Technical data

	ETIM 5.0 Class-ID: EC000104 ETIM 5.0 Class-Description: Control cable
	ETIM 6.0 Class-ID: EC000104 ETIM 6.0 Class-Description: Control cable
	Core identification code Black with white numbers acc. to VDE 0293-334)
	Conductor stranding Fine wire according to VDE 0295, class 5/IEC 60228 class 5
	Minimum bending radius Occasional flexing: 20 x outer diameter Fixed installation: 6 x outer diameter
	Nominal voltage U0/U: 300/500 V
	Test voltage 4000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Temperature range Occasional flexing: -5 °C to +70 °C Fixed installation: -40 °C to +80 °C

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
1125305	5 G 1.5	11.1	72	202
1125307	7 G 1.5	11.9	101	248
1125308	8 G 1.5	14	115	301
1125312	12 G 1.5	15.4	173	396
1125314	14 G 1.5	15.9	202	438
1125318	18 G 1.5	17.6	259	580
1125325	25 G 1.5	20.3	360	713
1125332	32 G 1.5	22.1	461	876
1125350	50 G 1.5	27.1	720	1305
1125403	3 G 2.5	11.1	72	206
1125404	4 G 2.5	12.1	96	249
1125405	5 G 2.5	13.2	120	295
1125407	7 G 2.5	14.3	168	373
1125412	12 G 2.5	18.2	288	586
1125418	18 G 2.5	21.4	432	823
1125425	25 G 2.5	24.4	600	1093
1125503	3 G 4.0	12.7	115	285
1125504	4 G 4.0	14	154	348
1125505	5 G 4.0	15.1	192	410
1125507	7 G 4.0	16.4	269	519
1125604	4 G 6.0	16.2	230	482
1125605	5 G 6.0	17.7	288	579
1125607	7 G 6.0	19.2	403	740
1125614	4 G 10.0	19.4	384	731
1125615	5 G 10.0	21.5	480	889
1125617	7 G 10.0	23.4	672	1146
1125624	4 G 16.0	22.4	614	1384
1125625	5 G 16.0	24.6	768	1740
1125626	4 G 25.0	26.9	960	1680
1125630	5 G 25.0	30	1200	2050
1125629	4 G 35.0	30.2	1344	2170

EMC/VSD cables

Various applications • PVC outer sheath and coloured cores



ÖLFLEX® CLASSIC 100 CY
Colour-coded and screened PVC control cable



Benefits

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

Application range

- Plant engineering
- Industrial machinery
- Heating and air-conditioning systems
- Conveyor and transport systems
- Servo drives
- In EMC-sensitive environments (electromagnetic compatibility)

Product features

- Flame-retardant according IEC 60332-1-2
- Good chemical resistance
- High degree of screening low transfer impedance (max. 250 Ω/km at 30 MHz)

Norm references / Approvals

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

Product Make-up

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- Cores twisted in layers
- PVC inner sheath, grey
- Tinned-copper braiding
- PVC outer sheath, transparent



info

- EMC-compliant

Technical data



Classification

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



Core identification code

Up to 5 cores: colour-coded according to VDE 0293-308
From 6 cores: ÖLFLEX® colour code



Conductor stranding

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



Minimum bending radius

Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter



Nominal voltage

Up to 1.0 mm²: U₀/U: 300/500 V
From 1.5 mm²: U₀/U: 450/750 V
Fixed, protected installation:
U₀/U: 600/1000 V



Test voltage

4000 V



Protective conductor

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



Temperature range

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

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 100 CY; U ₀ /U: 300/500 V				
0035001	2 X 0.5	7.0	41	75
0035002	3 G 0.5	7.3	46	83
00350033	4 G 0.5	7.9	55	99
00352013	5 G 0.5	8.4	66	112
0035202	7 G 0.5	8.9	80	132
0035004	2 X 0.75	7.4	46	86
0035005	3 G 0.75	7.9	57	100
00350063	4 G 0.75	8.4	64	115
00350163	5 G 0.75	8.9	77	130
0035203	7 G 0.75	9.7	102	161
0035220	2 X 1.0	7.9	56	98
0035221	3 G 1.0	8.2	65	111
00352223	4 G 1.0	8.7	78	130
00352233	5 G 1.0	9.5	89	153
0035204	7 G 1.0	10.2	113	185
ÖLFLEX® CLASSIC 100 CY; U ₀ /U: 450/750 V				
0035000	2 X 1.5	9.9	65	132
0035458	3 G 1.5	10.3	79	170
00354593	4 G 1.5	11.3	97	204
00354603	5 G 1.5	12.6	116	246
0035461	7 G 1.5	13.9	149	320
0035011	3 G 2.5	11.8	146	211
00350173	4 G 2.5	13.5	167	310
00350123	5 G 2.5	14.6	200	326
0035289	7 G 2.5	15.9	288	444

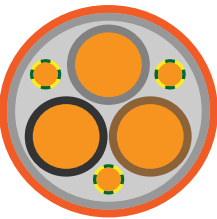
Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
00350183	4 G 4	15.1	237	403
00350133	5 G 4	16.5	328	478
00350193	4 G 6	16.6	318	521
00350143	5 G 6	18.2	441	624
0034953	3 G 10	18.9	414	690
00350213	4 G 10	21.1	558	843
00352903	5 G 10	23.1	714	1004
0034954	3 G 16	21.7	607	910
00350223	4 G 16	23.9	804	1164
00350153	5 G 16	26.8	1050	1812
0034955	3 G 25	26.6	936	1330
00350233	4 G 25	29.4	1289	1903
00350243	5 G 25	32.6	1446	2374
0034956	3 G 35	29.4	1258	1370
00350253	4 G 35	32.4	1693	2489
00350263	5 G 35	36.0	1975	2771
0034952	3 G 50	35.1	1748	2590
00350273	4 G 50	38.8	2342	3362
00350283	4 G 70	43.7	3035	3719
00350293	4 G 95	50.4	4055	5849
00354303	4 G 120	56.8	5225	7509
00354313	4 G 150	62.2	6300	7800
00354323	4 G 185	67.8	7753	9866



EMC/VSD cables

UV stabilised VSD Cable 0.6/1kV

Treoflex EMC-UV
UV stabilised VSD Cable 0.6/1kV



Technical Data

- Flexible cable with multi-stranded conductors, with a cross-linked XLPE polyethylene insulation, double stranding element screen, with UV resistant outer sheath made of a special type of PVC.
- Symmetric conductor construction (3+3PE, conductors arranged symmetrically every 120°)

Operating temperature:

- -40°C to 90°C

Operating voltage:

- U/U = 0.6/1 kV

Test voltage:

- 2500V

Insulation resistance:

- > 200 MOhm x km

Capacitance:

- conductor/conductor = 70 to 250 nF/km
- conductor/screen = 110 to 410 nF/km

Max. operating conductor temp:

- 90°C

Min. bending radius:

- Ø<12 mm - 5 x Ø
- Ø=12+20 mm - 7,5 x Ø
- Ø>20 mm - 10 x Ø

Cable Structure

Conductors:

- flexible copper wire, class 5 as per PN-EN 60228 or PN-HD 383 S2

Conductor insulation:

- XLPE cross-linked polyethylene

Conductor marking:

- black, brown, grey, yellow-green (3 + 3PE). Cores twisted together without fillers

Screens:

- an electrostatic screen in the form of polyester tape covered with a layer of aluminium, and a second screen in the form of a tinned copper wire braid

Sheath:

- special PVC, self-extinguishing and flame retardant (as per PN-N60332-1), UV resistant

Sheath colour:

- transparent/orange

Properties

- Low capacitance
- Self-extinguishing sheath
- UV resistant
- Fulfilment of electromagnetic compatibility (EMC) requirements* *Note: in order to ensure optimal screen earthing and the fulfilment of electromagnetic compatibility (EMC) requirements by the connection.

Standards

- AS/NZS 5000.1
- AS/NZS 1125
- AS/NZS 3808

Application

Cables with a special construction, used to supply power to motors from frequency converters while maintaining full electromagnetic compatibility (EMC). The cross-linked XLPE polyethylene insulation improves current-carrying capacity, while at the same time maintaining low cable capacitance in comparison with cables with a PVC insulation. The cables are suitable for both fixed installation and movable connections in industrial equipment, process lines, and machines operating in dry and damp rooms. The symmetric construction of the cable (3+3PE) ensures the symmetry of supply voltages on the motor terminals.

Part Number	No of cores x cross section mm²	Outer Ø c.a mm	Current capacity amps un-enclosed touching	Cop weight kg/km	Weight ca. Kg	Gland part no.
TA6.0015.04	4G1.5	10.6	19	86	140	53112635
TA6.0025.04	4G2.5	12.3	26	143	219	53112635
TA6.0040.04	4G4	14.6	34	224	323	53112645
TA6.0060.03.3E	3x6 + 3G1	16.1	43	298	429	53112645
TA6.0100.03.3E	3x10 + 3G1.5	18.8	61	491	615	53112655
TA6.0160.03.3E	3x16 + 3G 2.5	20.5	81	723	819	53112655
TA6.0250.03.3E	3x25 + 3G4	24.8	108	1137	1324	53112665
TA6.0350.03.3E	3x35 + 3G6	27.3	135	1535	1718	53112665
TA6.0500.03.3E	3x50 + 3G10	31.3	170	2207	2398	53112675
TA6.0700.03.3E	3x70 + 3G10	36.0	214	2871	3055	53112680
TA6.0950.03.3E	3x95 + 3G16	40.2	256	3953	4161	53112680
TA6.1200.03.3E	3x120 + 3G16	43.3	303	4836	5073	53112680
TA6.1500.03.3E	3x150 + 3G25	49.8	348	5411	6127	53112681
TA6.1850.03.3E	3x185 + 3G35	55.0	396	6968	7189	53112501
TA6.2400.03.3E	3x240 + 3G50	61.0	472	8540	9540.0	53112501
TA6.3000.03.3E	3x300 + 3G50	67.8	621	10380	11550	53112500

Treotham Automation has a full range of EMC Cable Glands please see page 396-397



ÖLFLEX® ULTRA SCREEN VSD BLACK

Double Screened Cable with 100% Screen Coverage



Benefits

- Symmetrical 3 + 3 design
- 100% screen coverage
- Suitable for outdoor use

Application range

- Enhanced temperature is used for fixed installation and occasional flexing having an EMC performance due to double screened design. The cable has a special concentric array cable design, where protective conductor is split into 3 individuals with reduced overall cross sections. The cables are for use in dry, damp and wet rooms and can also be used outdoors under direct exposure to sunlight. Suitable for frequency converters operated for three phase motors of small, medium and large sizes.
- Power stations

Product Make-up

- Fine wire bar copper conductor
- Core insulation PVC
- 100% copper wrap screen
- Tinned copper braid screen
- UV resistant outer sheath

Norm references / Approvals

- Copper wire acc. to IEC 60228 resp. VDE 0295, Class 5
- Flame retardant in acc. to IEC 60332-1-2

Technical data

Core identification code
Red, White, Blue, Green/Yellow

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

Minimum bending radius
Static: 4x 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
-20°C to +90°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ULTRA SCREEN VSD BLACK				
3804244E	4G1mm	11.8	88.8	191
3804245E	4G 1.5mm	12.5	112.4	223
3804246E	4G 2.5mm	13.6	157.6	282
3804247E	4G 4mm	14.9	224.3	363
3804260E	3x6 + 3G1mm	16.9	282.8	511
3804269E	3x6 + 3G1.5mm	16.9	296.3	526
3804261E	3x10 + 3G1.5mm	20.3	448.9	727

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
3804262E	3x16 + 3G1.5mm	23.2	645.1	968
3804270E	3x16 + 3G2.5mm	23.2	673.4	999
3804263E	3x25 + 3G4mm	27.6	1004.9	1450
3804264E	3x35 + 3G6mm	31.2	1404.2	1898
3804265E	3x50 + 3G10mm	36.4	1999.0	2665
3804266E	3x70 + 3G10mm	41.1	2533.2	3295
3804267E	3x95 + 3G16mm	47.1	3447.5	4391
3804268E	3x120 + 3G16	51.7	4246.0	5287

ÖLFLEX® SERVO 2YSLCYK-JB

Double EMC Screened 3+3 Core Version with Black Outer Sheath



Construction

- Fine-wire, bare copper conductor
- Core insulation: PE
- Outer sheath: PVC black - cold flexible
- Symmetrical 3+3 core version
- Screening: wrapping of laminated aluminium foil in combination with tinned copper braiding

Minimum Bending Radius

- Occasional flexing: 15 x OD
- Fixed installation: 4 x OD

Temperature Rating

- Flexing: -15°C to 70°C
- Test Voltage
- C/C: 4000 V
- C/S: 4000 V

Nominal Voltage

- U₀/U: 600/1000 V

Part No.	Conductor	OD (mm)	Suitable Gland
0036448	3x70 + 3G10mm	36.4	M63 Brush
0036449	3x95 + 3G16mm	42	M63 Brush
0036450	3x120 + 3G16mm	47.8	M63 Plus Brush

ÖLFLEX® SERVO 719 CY

Screened, low capacitive servo cable for fixed installation or occasional flexing with UL/cUL AWM certification.



Benefits

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

Application range

- Connecting cable between servo controller and motor
- For static and occasionally flexible use
- Plant engineering
- Industrial machinery and machine tools
- Printing machines

Product features

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

Norm references / Approvals

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

Product Make-up

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

ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description: Control cable
ETIM 6.0 Class-ID: EC000104
ETIM 6.0 Class-Description: Control cable

Core identification code
lack 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
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5

Minimum bending radius
Occasional flexing: 15 x outer diameter
Fixed installation: 6 x outer diameter

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

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

Protective conductor
G = with GN-YE protective conductor

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

Product Number	Number of cores and mm² per conductor	Outer diameter (mm) approx.	Copper index (kg/km)	Weight (kg/km)
1020010	4 G 1.5	8.4	83	130
1020011	4 G 2.5	9.9	125	190
1020012	4 G 4	11.7	191	273
1020013	4 G 6	13.7	290	394
1020014	4 G 10	16.7	452	581
1020015	4 G 16	20.1	721	884
1020016	4 G 25	24.3	1100	1348
1020017	4 G 35	27.7	1548	1840
1020018	4 G 50	33.7	2151	2645
1020040	4 G 0.75 + (2 x 0.5)	8.9	78	159
1020041	4 G 1 + (2 x 0.5)	9.3	88	147
1020044	4 G 1 + (2 x 1.0)	10.2	107	204
1020042	4 G 1.5 + (2 x 0.5)	10.3	111	180
1020045	4 G 1.5 + (2 x 1.0)	10.8	130	230
1020053	4 G 1.5 + (3 x 1.0)	11.5	145	225
1020019	4 G 1.5 + (2 x 1.5)	11.5	146	242
1020043	4 G 2.5 + (2 x 0.5)	11.7	158	247
1020046	4 G 2.5 + (2 x 1.0)	12.1	173	293
1020054	4 G 2.5 + (3 x 1.0)	12.9	188	290
1020020	4 G 2.5 + (2 x 1.5)	12.9	189	306
1020047	4 G 4 + (2 x 1.0)	14.3	250	373
1020055	4 G 4 + (3 x 1.0)	14.8	270	402
1020021	4 G 4 + (2 x 1.5)	15	271	420
1020048	4 G 6 + (2 x 1.0)	16.0	334	485

Product Number	Number of cores and mm² per conductor	Outer diameter (mm) approx.	Copper index (kg/km)	Weight (kg/km)
1020022	4 G 6 + (2 x 1.5)	17	351	529
1020056	4 G 6 + (3 x 1.5)	17.0	370	537
1020049	4 G 10 + (2 x 1.0)	18.8	526	712
1020023	4 G 10 + (2 x 1.5)	19.5	540	752
1020057	4 G 10 + (3 x 1.5)	19.5	559	758
1020050	4 G 16 + (2 x 1.0)	22.3	772	991
1020051	4 G 16 + (2 x 1.5)	22.5	785.2	999
1020058	4 G 16 + (3 x 1.5)	23.0	805	1151
1020052	4 G 25 + (2 x 1.5)	26.1	1.184.9	1459
1020059	4 G 35 + (2 x 1.5)	30.4	1.598.1	1971
1020085	4 G 50 + (2 x 1.5)	34.0	2.205.2	2713
1020024	4 G 0.75 + 2 x (2 x 0.34)	9.7	99	163
1020035	4 G 1 + 2 x (2 x 0.75)	11.3	126.4	207
1020025	4 G 1.5 + 2 x (2 x 0.75)	12.3	150	245
1020026	4 G 2.5 + 2 x (2 x 1.0)	14.7	223	357
1020027	4 G 4 + 2 x (2 x 1.0)	16.4	288	452
1020028	4 G 4 + (2 x 1.0) + (2 x 1.5)	16.6	307	469
1020029	4 G 6 + (2 x 1.0) + (2 x 1.5)	18.5	421	617
1020030	4 G 10 + (2 x 1.0) + (2 x 1.5)	22.1	588	852
1020031	4 G 16 + 2 x (2 x 1.5)	25	876	1162
1020032	4 G 25 + 2 x (2 x 1.5)	28.7	1227	1590
1020033	4 G 35 + 2 x (2 x 1.5)	30.6	1652	2023
1020034	4 G 50 + 2 x (2 x 2.5)	37	2264	2876

Harsh conditions • High mechanical and chemical resistance



ÖLFLEX® 550 P

Power cord with PUR outer sheath and European harmonisation (HAR)

info

- High mechanical strength
- Good oil resistance
- H05BQ-F/H07BQ-F design standard

Classification

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

Core identification code

Colours according to VDE 0293-308

Conductor stranding

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

Minimum bending radius

For flexible use:
12.5 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage

Up to 1.0 mm²: U₀/U: 300/500 V
From 1.5 mm²: U₀/U: 450/750 V

Test voltage

3000 V

Protective conductor

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

Temperature range

Occasional flexing: -40°C to +90°C
Fixed installation: -50°C to +90°C

Benefits

- Harmonised use in Europe
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- 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
- The signal colour of the outer sheath increases safety and visual perception

Application range

- Portable handheld electrical devices such as drills, sanders, jig saws or grinders
- Building sites, camp sites, stage applications
- Construction machinery
- Agricultural equipment
- For indoor and outdoor use

Product features

- Oil-resistant
- Abrasion and notch-resistant
- Flexible down to -40°C
- Resistant to hydrolysis and microbes

Norm references / Approvals

- EN 50525-2-21
- H05BQ-F/H07BQ-F design standard

Product Make-up

- Fine-wire, bare copper conductor
- Core insulation: rubber compound
- Cores twisted together
- PUR outer sheath
- Sheath colour: orange

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® 550 P U ₀ /U: 300/500 V				
0013600	2 X 0.75	5.7 - 7.4	14.4	50
0013601	3 G 0.75	6.2 - 8.1	21.6	64
00136023	4 G 0.75	6.8 - 8.8	28.8	78
00136033	5 G 0.75	7.6 - 9.9	36	98
0013610	2 X 1.0	6.1 - 8.0	19.2	60
0013611	3 G 1.0	6.5 - 8.5	29	74
00136123	4 G 1.0	7.1 - 9.3	38.4	92
00136133	5 G 1.0	8.0 - 10.3	48	114
ÖLFLEX® 550 P U ₀ /U: 450/750 V				
0013620	2 X 1.5	7.6 - 9.8	29	87
0013621	3 G 1.5	8.0 - 10.4	43	108
00136223	4 G 1.5	9.0 - 11.6	58	137
00136233	5 G 1.5	9.8 - 12.7	72	165
0013630	2 X 2.5	9.0 - 11.6	48	90
0013631	3 G 2.5	9.6 - 12.4	72	161
00136323	4 G 2.5	10.7 - 13.8	96	206
00136333	5 G 2.5	11.9 - 16.3	120	254



Harsh conditions • High mechanical and chemical resistance

Treoflex H05RN-F/H05RR-F
500 V Rubber Sheathed Cable



Technical Data

- **Conductor Material**
Copper, bare or tinned
- **Conductor Class**
Class 5
- **Core insulation**
Rubber insulation
- **Core identification**
Colored acc. VDE 0293, more than 2 cores with green/yellow earth conductor
- **Stranding**
Cores twisted in Layers
- **Outer sheath**
H05RR-F: Synthetic rubber
H05RN-F: polychloroprene (neoprene)
- **Sheath colour**
Black
- **Rated voltage [V]**
300/500
- **Testing Voltage**
2000
- **min. bending radius fixed [xd]**
4 x d
- **min. bending radius moved [xd]**
5 x d
- **Working temp fixed min/max [C]**
-40°C up to +90°C
- **Working temp moved min/max [C]**
-40°C up to +90°C
- **Temp at conductor max.**
+ 90°C
- **Burning behaviour**
VDE 0482-332-1-2/IEC 60332-1

Design:

- stranding of fine copper wires blank or tinned
- rubber insulation
- coloured cores acc. to VDE 0293
- more than 2 cores with one green/yellow earth conductor
- outer sheath of H05RR-F of synthetic rubber, black, flame retardant
- outer sheath of H05RN-F of polychloroprene (Neoprene), black, flame retardant

Note

- G = with green-yellow earth core;
- X = without green-yellow earth core

Application: - H05RR-F:

For connection of electrical appliances when exposed to low mechanical strain in household, offices and for light utilities.

Application of H05RN-F:

For connection of electrical appliances when exposed to low mechanical strain in dry and moist rooms as well as feed cable in outdoor for garden tools such as a lawn-mower etc.

H05 RR-F				
Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA36.0007.02	2 x 0.75	5.7 - 7.4	14.4	60
TA36.0007.03	3 G 0.75	6.2 - 8.1	21.6	74
TA36.0007.04	4 G 0.75	6.8 - 8.8	29	78
TA36.0007.05	5 G 0.75	7.6 - 9.9	36	99
TA36.0010.02	2 x 1	6.1 - 8.0	19	72
TA36.0010.03	3 G 1	6.5 - 8.5	29	85
TA36.0010.04	4 G 1	7.1 - 9.3	38	98
TA36.0010.05	5 G 1	8.0 - 10.3	48	134
TA36.0015.02	2 x 1.5	7.6 - 9.8	29	98
TA36.0015.03	3 G 1.5	8.0 - 10.4	43	120
TA36.0015.04	4 G 1.5	9.0 - 11.6	58	150
TA36.0015.05	5 G 1.5	9.8 - 12.7	72	180
TA36.0025.02	2 x 2.5	9.0 - 11.6	48	145
TA36.0025.03	3 G 2.5	9.6 - 12.4	72	170
TA36.0025.04	4 G 2.5	10.7 - 13.8	96	220
TA36.0025.05	5 G 2.5	11.9 - 15.3	120	270
TA36.0040.03	3 G 4	11.3 - 14.5	115	260
TA36.0040.04	4 G 4	12.7 - 16.2	154	340
TA36.0060.03	3 G 6	12.8 - 16.3	173	361
TA36.0060.04	4 G 6	14.2 - 18.1	230	462

H05 RN-F				
Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA35.0007.002	2 x 0.75	5.7 - 7.4	14.4	78
TA35.0007.003	3 G 0.75	6.2 - 8.1	21.6	94
TA35.0007.004	4 G 0.75	6.8 - 8.8	29	90
TA35.0010.002	2 x 1	6.1 - 8.0	19	94
TA35.0010.003	3 G 1	6.5 - 8.5	29	114



Power cables

Heavy duty rubber-sheathed cable, submersible

Treoflex H07 RN-F

Heavy duty rubber-sheathed cable, submersible



Technical Data

- Conductor Material
- Bare copper
- Conductor Class
- Class 5
- Core insulation
- EPR insulation

Core identification

- 2 core: Blue, Brown
- 3 core: Blue, Brown, Green/Yellow
- 4 core: Brown, Black, Grey, Green/Yellow
- 5 core: Blue, Brown, Black, Grey, Green/Yellow
- 6 and more Black numbered Green/Yellow

Stranding

- Cores stranded in layers
- Outer sheath
- Rubber compound
- Sheath colour
- Black
- Rated voltage [V] U₀/U 0.6/1kV

Testing Voltage

- 2500 V

Insulation resistance

- ≥ 1 MΩ x km
- min. bending radius fixed [xd]
- 3 x d (≤ 12mm)
- 4 x d (≥ 12mm)

min. bending radius moved [xd]

- 5 x d (≤ 20mm)
- 6 x d (≥ 20mm)

Working temp fixed min/max [C]

- -40°C up to +90°C

Working temp moved min/max [C]

- -20°C up to +90°C

Temp at conductor max.

- +90°C
- Flame retardant
- Acc. to IEC 60332-1

Resistant to

- Ozone
- Weather
- Oil
- Abrasion
- Submersible to 200 metres

Design:

- stranding of fine bare copper wires
- EPR insulation
- conductor specification acc. to VDE 0293 up to 5 cores coloured, more than 5 cores number coded
- Note
- G = with green-yellow earth core;
- X = without green-yellow earth core

Standards

- AS/NZS 5000.1
- AS/NZS 1125
- AS/NZS 3808



Power cables

Heavy duty rubber-sheathed cable, submersible



Part Number	No. of cores x cross-sec. mm ²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA35.0010.04	4 G 1	11.5	38	150
TA35.0015.04	4 G 1.5	12.4	58	200
TA35.0025.04	4 G 2.5	13.6	96	290
TA35.0040.04	4 G 4	15.1	154	395
TA35.0060.04	4 G 6	17	230	540
TA35.0100.04	4 G 10	22.8	384	950
TA35.0160.04	4 G 16	26.2	614	1260
TA35.0250.04	4 G 25	31	960	1860
TA35.0350.04	4 G 35	34.2	1344	2380
TA35.0500.04	4 G 50	40.1	1920	3190
TA35.0700.04	4 G 70	45.5	2688	4260
TA35.0950.04	4 G 95	51.4	3648	5600
TA35.1200.04	4 G 120	55.9	4608	6830
TA35.1500.04	4 G 150	61.1	5760	8320
TA35.1850.04	4 G 185	67	7104	9800
TA35.2400.04	4 G 240	76	9216	12100
TA35.0015.05	5 G 1.5	13.6	72	240
TA35.0025.05	5 G 2.5	14.9	120	345
TA35.0040.05	5 G 4	16.8	192	485
TA35.0060.05	5 G 6	18.9	288	650

Part Number	No. of cores x cross-sec. mm ²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA35.0100.05	5 G 10	25.4	480	1200
TA35.0160.05	5 G 16	29.3	768	1550
TA35.0250.05	5 G 25	34.6	1200	2250
TA35.0350.05	5 G 35	38.2	1680	2750
TA35.0500.05	5 G 50	44	2400	3950
TA35.0700.05	5 G 70	49.7	3360	4740
TA35.0950.05	5 G 95	56.5	4560	6780
TA35.0015.07	7 G 1.5	15.9	101	375
TA35.0025.07	7 G 2.5	17.5	168	520
TA35.0015.12	12 G 1.5	20.1	175	460
TA35.0025.12	12 G 2.5	22.1	288	760
TA35.0015.19	19 G 1.5	23.6	274	810
TA35.0025.19	19 G 2.5	26.1	456	1075
TA35.0015.24	24 G 1.5	27.6	346	1015
TA35.0025.24	24 G 2.5	30.7	576	1390
TA35.0015.27	27 G 1.5	29.3	385	1100
TA35.0025.27	27 G 2.5	34.2	640	1521

Current ratings for HO7 RN for current supply in industrial application
Operating temperature at conductor 90°C Ambient temperature 40°C (Air)

Number of cores	1-core		2-cores	3-cores	4-cores
Number of loaded	2-cores loaded	3 cores loaded	2-cores loaded	3 cores loaded	3 cores loaded
Cross section mm2	Current ratings in Ampere (A)				
1	20	19	18	16	16
1.5	26	25	24	20	20
2.5	36	35	34	28	28
4	48	46	45	38	38
6	61	59	57	48	48
10	84	81	78	66	66
16	110	110	105	88	88
25	150	145	140	120	120
35	185	180	175	145	145
50	230	220	210	180	180
70	290	280	—	230	230
95	360	350	—	285	285
120	420	410	—	330	330
150	485	470	—	375	375
185	570	550	—	435	435
240	680	660	—	520	520
300	790	770	—	590	590
400	920	900	—	—	—
500	1080	1050	—	—	—
630	1260	1230	—	—	—
Note: For the method of installation: AS/NZS 3008.1.1:1998 - Refer to tables 4, 7, 10, 13 of AS/NZS 3008.1					
Conversion factors for deviating ambient temperature					
Ambient temperature at °C		30	40	45	55
		1.10	1.00	0.94	0.88





Treoflex Figure 8 Twin 0.6/1kV



Technical Data

- Extra fine wire to ensure maximum flexibility

Temperature range

- -30°C to + 75°C static
- -20°C to + 75°C flexing

Nominal voltage

- 0.6/1kV
- Bending radius
- 5 x cable diameter

Cable Structure

- Annealed bare copper conductors
- Class 6 fine stranding
- Insulation of very flexible NBR 90°C
- Outer sheath of special PVC
- Colour :
- Red and Blue (red and black on request)

Properties

- UV Stabilised
- Flame Retardant

Relevant Standards

- AS/NZS1125,
- IEC60332-1,
- AS/NZS5000.1

Application

For use as a battery/jumper cable or battery powered equipment like forklifts and also for Telecom companies for phone equipment.

Part Number	Size mm²	Conductor Structure No. / Wire mm	Thickness of Insulation mm	Thickness of Sheath mm	Overall Diameter mm	Conductor Resistance @20° Ω/Km	Approx Weight Kg/Km	Current Rating Amps
TA3.0015.02	2 x 1.5	48/0.2	0.8	0.9	5.0 x 10.2	13.3	76	19
TA3.0025.02	2 x 2.5	80/0.2	0.8	1.0	5.6 x 11.4	7.98	101	25
TA3.0040.02	2 x 4	127/0.2	0.8	1.0	6.5 x 13.2	4.95	153	42
TA3.0060.02	2x 6	190/0.2	0.8	1.1	7.3 x 14.8	3.3	219	62
TA3.0100.02	2 x 10	318/0.2	1.0	1.2	9.0 x 18.2	1.91	325	105
TA3.0160.02	2 x 16	504/0.2	1.0	1.2	10.0 x 20.2	1.21	444	135
TA3.0250.02	2 x 25	770/0.2	1.2	1.2	11.9 x 24.0	0.78	675	180
TA3.0350.02	2 x 35	714/0.25	1.2	1.2	13.7 x 27.6	0.554	913	225
TA3.0500.02	2 x 50	1042/0.25	1.4	1.4	15.6 x 31.4	0.384	1298	285
TA3.0700.02	2 x 70	1474/0.25	1.4	1.4	17.5 x 35.2	0.272	1738	355

Duty Cycle Current Rating (A)						
Size	100%	85%	60%	30%	20%	10%
2 x 4	42	46	54	77	94	188
2 x 6	62	67	80	113	138	196
2 x 10	105	115	135	190	235	332
2 x 16	135	145	175	245	302	426
2 x 25	180	195	230	330	402	569
2 x 35	225	245	290	410	503	711
2 x 50	285	310	370	520	637	901
2 x 70	355	385	460	650	794	1122



Orange Circular

Power Distribution cable for fixed installations



Core Identification

- Class 2 stranded conductors, V90 PVC inner insulation material and UV Resistant 5V-90 PVC outer sheath. Cables are metre marked.

Minimum Bending Radius

- Fixed: 4 x cable OD

Rated Voltage

- 600/1000Vtemperature Rating
- -20°C to 90°C

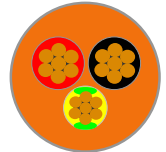
Core Identification

- 2 Core + E - Red, Black, Gn/Ye
- 3 Core + E - Red, White, Blue, Gn/Ye
- 4 Core + E - Red, White, Blue, Black, Gn/Yellow

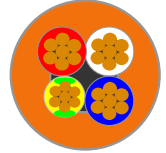
Standards

- AS/NZS 5000.1
- AS/NZS 1660.5.6
- EESS Compliant

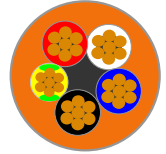
Part No.	Conductor Size	Earth Size	OD
3 CORE (2 Core + Earth)			
3801960	3 G 1.5mm	1.5mm	10.5mm
3801961	3 G 2.5mm	2.5mm	11.4mm
3801962	3 G 4mm	2.5mm	12.9mm
3801963	3 G 6mm	2.5mm	13.7mm
3801820	3 G 10mm	4mm	15.4mm
3801821	3 G 16mm	6mm	17.4mm
4 CORE (3 Core + Earth)			
3801964	4 G 1.5mm	1.5mm	11.3mm
3801965	4 G 2.5mm	2.5mm	12.4mm
3801966	4 G 4mm	2.5mm	14.2mm
3801967	4 G 6mm	2.5mm	15.3mm
5 CORE (4 Core + Earth)			
3801968	5 G 1.5mm	1.5mm	12.2mm
3801969	5 G 2.5mm	2.5mm	13.5mm
3801970	5 G 4mm	2.5mm	15.5mm
3801971	5 G 6mm	2.5mm	16.8mm
3801855	5 G 10mm	4mm	19.1mm
3801856	5 G 16mm	6mm	21.7mm
3801857	5 G 25mm	6mm	26.1mm
3801858	5 G 35mm	10mm	28.7mm



3 CORE (2 CORE + EARTH)



4 CORE (3 CORE + EARTH)



5 CORE (4 CORE + EARTH)

Conductor cross sectional area	Unenclosed		Enclosed				Underground Ducts		Three Phase Voltage Drop
	Spaced		Touching		Conduit in air				
									
mm²	A	A	A	A	A	A	A	A	mV/A/m
1.5	22	18	21	17	16	15	25	22	30
2.5	31	26	30	25	23	21	35	30	16.4
4	42	35	39	33	30	27	46	39	10.2
6	52	46	50	42	39	35	58	49	6.8
10	73	62	68	58	54	48	78	65	4.05
16	97	82	91	78	72	64	100	84	2.55
25	131	111	120	104	100	90	131	109	1.61
35	160	137	148	125	120	105	160	131	1.17
50	194	165	182	154	143	125	188	160	0.87
70	245	211	228	194	177	160	234	200	0.61

These ratings are based on an ambient air temperature of 30°C



Single Core cables

Low Smoke Halogen Free 110°C 0.6/1kV



Treoflex SDI Flexible

110°C 0.6/1kV Low Smoke Halogen Free



Technical Data

- Extra flexible special LSHF R-E-110
- Temperature range**
-40°C to + 110°C
- Nominal voltage**
0.6/1kV
- Bending radius**
Cable overall diameter ≤ **25mm**:
4 x Cables diameter after installed
6 x Cables diameter during installation.
Cable overall diameter ≥ **25mm**:
6 x Cables diameter after installation
9 x Cables diameter during installation.

Cable Structure

- Annealed bare copper conductors
- Class 6 fine stranding
- Insulation of special X-HF-110 low smoke halogen free 110°C, colour white
- Outer sheath of special HFS-110-TP thermoset compound LSHF 110°C, colour orange.

Properties

- Low Smoke Halogen Free (LSHF, LS0H, LSZH)
 - UV Stabilised
 - Flame Retardant
 - Resistant to: oils, petrol, acids, sea water
- Relevant Standards
AS/NZS1125, AS/NZS3808, IEC60332-1, AS/NZS5000.1

Application

Flexible single core double insulated for use in switchboards, busbars, transformers, welding leads, battery charges.

Part No.	Cores x CSA	Nominal Stranding	Overall Diameter	Approx Weight	20° Max. D.C Conductor Resistance	Voltage Drop@50Hz, Flat Touching	Current Rating, Unenclosed, Three Phase, 40° in Air, 25°in Ground (A)		
	mm²	mm	mm	kg/km	Ω/km	mV/A	Spaced	Touching	Trefoil
TA7.0060.01.OE	1C6.0	176/0.2	7.5	93	3.30	7.74	70	57	61
TA7.0100.01.OE	1C10	294/0.2	8.6	135	1.91	4.48	99	80	85
TA7.0160.01.OE	1C16	470/0.2	9.7	195	1.21	2.85	130	105	112
TA7.0250.01.OE	1C25	726/0.2	11.5	283	0.780	1.84	173	139	149
TA7.0350.01.OE	1C35	1040/0.2	12.8	377	0.554	1.31	214	172	184
TA7.0500.01.OE	1C50	1499/0.2	14.6	522	0.386	0.921	270	217	233
TA7.0700.01.OE	1C70	2100/0.2	16.7	730	0.272	0.658	340	273	292
TA7.0950.01.OE	1C95	2745/0.2	18.5	946	0.206	0.509	410	329	353
TA7.1200.01.OE	1C120	1554/0.3	20.3	1184	0.161	0.408	487	390	418
TA7.1500.01.OE	1C150	1961/0.3	22.9	1475	0.129	0.34	562	450	482
TA7.1850.01.OE	1C185	2331/0.3	24.7	1772	0.106	0.293	644	516	553
TA7.2400.01.OE	1C240	3172/0.3	27.7	2320	0.080	0.242	775	620	665
TA7.3000.01.OE	1C300	4001/0.3	31.1	2926	0.064	0.213	895	714	766
TA7.4000.01.OE	1C400	5296/0.3	35.3	3909	0.049	0.187	1079	855	918
TA7.5000.01.OE	1C500	6648/0.3	39.4	4858	0.038	0.172	1260	990	1064
TA7.6300.01.OE	1C630	8376/0.3	44.2	6229	0.029	0.159	1493	1154	1240

* Current ratings based on AS/NZS3008.1.1:2009 Table 9 Columns 3 and 7.

Note: Red, Black, Blue & White available on request

Motor current table, Amperes							
Power kW	hp	Single Phase 240V	Three Phase 415V	Power kW	hp	Single Phase 240V	Three Phase 415V
0.37	0.5	2.2	0.7	5.5	7.5	32.4	10.8
0.55	0.75	3.2	1.1	7.5	10		14.4
0.75	1	4.3	1.4	9.3	12.5		18
1.1	1.5	6.5	2.2	11	15		21.6
1.5	2	8.6	2.9	15	20		28.8
1.8	2.5	10.8	3.6	18.5	25		36
2.2	3	13	4.3	22	30		43.2
4	5	21.6	7.2	30	40		58



Single Core cables

Harsh conditions • Rubber cables



NSGAFÖU 1.8/3 kV

Flexible single-conductor rubber cable with 1.8/3 kV rated voltage



info

- Public transport
- Control panel internal wiring

Technical data

- Classification**
ETIM 5.0 Class-ID: EC000993
ETIM 5.0 Class-Description: Single core cable
- Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
- Minimum bending radius**
Flexible use: 10 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
U₀/U: 1.8/3 kV
- Test voltage**
6000 V
- Current rating**
According to VDE 0298 Part 4, Table 15
- Temperature range**
Flexible use: -25°C to +90°C
Fixed installation: -40°C to +90°C

Benefits

- Arrangements made of single-conductor cables NSGAFÖU in accordance with VDE 0250 Part 602 with nominal voltage of at least U₀/U: 1.8/3 kV can be used for short circuit-proof and short-to-ground-proof installation up to 1000 V in acc. with VDE 0100 Part 520 and VDE 0298 Part 3

Application range

- Wiring of machines, tools, devices, appliances and control cabinets
- Railway vehicles, buses; short-circuit-proof up to 1000 V in switching stations and power distributors
- No direct burial, except of lead-through through fire separations such as sand cups
- In ducts, tubes, pipes, conduits and closed installation channels
- Bundled or for connection of movable parts

Product features

- Flame-retardant according IEC 60332-1-2
- Oil-resistant according to EN 60811-404
- Normative rated voltage classes U₀/U 0.6/1 kVac and 3.6/6 kVac available on request
- The outer diameters stated in the part number table are maximum values

Norm references / Approvals

- <VDE> NSGAFÖU 1.8/3 kV cable type approval according to VDE 0250-602

Product Make-up

- Fine-wire strand made of tinned-copper wires
- Core insulation: rubber compound, type 3GI3
- Outer coating: rubber compound, type 5GM3
- No outer sheath

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
NSGAFÖU 1.8/3 kV				
1600300	1.5	7.0	14.4	60
1600301	2.5	7.5	24	70
1600302	4	9.0	38.4	90
1600303	6	9.5	57.6	120
1600304	10	11.0	96	180
1600305	16	13.0	153.6	250
1600306	25	15.0	240	390
1600307	35	16.5	336	470
1600308	50	18.0	480	625
1600309	70	20.5	672	880
1600310	95	24.0	912	1190
1600311	120	26.0	1152	1430
1600312	150	28.0	1440	1750
1600313	185	31.0	1776	2160
1600314	240	34.5	2304	2640
3026826	300	38.0	2880	3545



Single Core Cables



1

Wide-range use
Treoflex Flexible Earth
0.6/1kV Low Smoke Halogen Free 110°C



Technical Data

- Special soft cross linked X-HF-110

Temperature range

- -40°C to + 110°C

Nominal voltage

- 0.6/1kV
- Bending radius
- 6 x cable diameter

Cable Structure

- Tinned copper conductors for sizes 0.75mm² to 6mm²
- Annealed bare copper conductors for size 10mm² and over
- Class 6 fine stranding
- Insulation of special Soft X-HF-110

Properties

- Low Smoke Halogen Free (LSHF, LS0H, LSZH)
- UV Stabilised
- Flame Retardant
- Relevant Standards
- AS/NZS 1125, AS/NZS3808, IEC60332-1, IEC60332-3(A), IEC 61034, AS/NZS5000.1

Application

Flexible single core earth cable for use in switchboards, mains and sub-mains, transformers and generators.

Part Number	Size mm ²	Nominal Stranding	Thickness of Insulation mm	Cable Diameter mm	Approx Weight Kg/Km	Conductor Resistance @ 20° Ω/Km	Voltage Drop @50Hz MV/A
TA4.0060.01	6	176/0.20	0.7	3.3	67	3.39	7.74
TA4.0100.01	10	320/0.20	0.7	5.7	115	1.91	4.48
TA4.0160.01	16	512/0.20	0.7	6.9	172	1.21	2.84
TA4.0250.01	25	800/0.20	0.9	8.7	269	0.78	1.84
TA4.0350.01	35	1120/0.20	0.9	9.9	363	0.554	1.31
TA4.0500.01	50	705/0.30	1.0	11.9	513	0.386	0.921
TA4.0700.01	70	990/0.30	1.1	12.1	700	0.272	0.658
TA4.0950.01	95	1340/0.30	1.1	14.3	949	0.206	0.509
TA4.1200.01	120	1690/0.30	1.2	15.9	1182	0.161	0.408
TA4.1500.01	150	2123/0.30	1.4	17.9	1477	0.129	0.34
TA4.1850.01	185	1470/0.30	1.6	19.9	1826	0.106	0.293
TA4.2400.01	240	1905/0.30	1.7	21.9	2362	0.080	0.242
TA4.3000.01	300	2385/0.30	1.8	25.6	2927	0.064	0.213

Minimum size of copper earthing conductor

Nominal area active mm ²	Cu Earth mm ²	Nominal area active mm ²	Cu Earth mm ²
2.5	2.5	95	25
4	2.5	120	35
6	2.5	150	50
10	4	185	70
16	6	240	95
25	6	300	120
35	10	400	120
50	16	500	120
70	25	630	120

A.W.G conversion to mm²

A.W.G	Dia mm	mm ²	A.W.G	Dia mm	mm ²
0000 (4/0)	11.68	107.3	10	2.59	5.3
000 (3/0)	10.4	85	12	2.05	3.3
00 (2/0)	9.27	67.4	14	1.63	2.1
0	8.25	53.5	16	1.29	1.3
2	6.54	33.6	18	1.02	0.8
4	5.19	21.2	20	0.81	0.5
6	4.12	13.3	22	0.64	0.3
8	3.25	8.4	24	0.51	0.2



Single Core Cables

Wide-range use

ÖLFLEX® POWER TPR 90 EARTH
Earth cables

1



info

- Flexible Earth Cable

Technical data

- Core identification code**
green/yellow
- Based on**
AS/NZS 5000.1
- Specific insulation resistance**
> 20 MOhm x km
- Conductor stranding**
Extra fine wire acc. to AS/NZS 1125
Cl.6 /
IEC 60228 Cl.6
- Minimum bending radius**
Occasional flexing: 15 x cable diameter
Fixed installation: 5 x cable diameter
- Nominal voltage**
U₀/U: 600/1000 V
- Test voltage**
3500 V
- Temperature range**
-30°C to +90°C

Application range

- Internal wiring of devices
- Stranded hook-up wires for grounding connection of electrical equipment and electronic components within devices

Product features

- Flame retardant acc. to AS/NZS 1660.5.6 resp. to IEC 60332-1-2

Approvals (Norm references)



Product Make-up

- Extra fine strands of bare copper wires
- TPR core insulation, green/yellow

Article number	Conductor cross-section	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® POWER TPR 90 EARTH				
3801520	6	5.6	57.6	70
3801521	10	6.8	96	112
3801522	16	8.1	153.6	171
3801523	25	9.7	240	255
3801524	35	11.2	336	351
3801525	50	12.7	480	488
3801526	70	14.9	672	685
3801527	95	16.9	912	914
3801528	120	19.6	1152	1191



Single Core Cables

Control Cabinet Single Cores • Various applications

V-90HT SC

High temperature PVC insulated cables



Benefits

- The light weight and the practical hand holes in the spool packaging makes handling easy
- Higher economy by optimum processing volumes

Application range

- Suitable for assembling cable harnesses and wiring in the switch cabinet installation
- Used for installations in plants, devices, switch gear cabinets, where high temperature occur
- The flame retardant 105°C rated V90HT insulation complies with AS/NZS 3808. The highly flexible cables are very easy to work with, with Class 5 tinned copper flexible conductors and flexible insulating compound.

Product features

- Flame retardant in acc. to VW -1, and IEC 60332-1-2
- Wide temperature range up to 105°C

Approvals (Norm references)



Product Make-up

- Fine strands of tinned annealed copper wire
- High temperature PVC based core insulation

info

- Single core, flexible hook-up wire
- UL Style 1015 and UL 10269

Technical data

Core identification code
Please see below

Based on
In acc. to UL 1015 and UL 10269

Specific insulation resistance
> 20 GOhm x cm

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

Minimum bending radius
Fixed installation: 3 x cable diameter

Nominal voltage
U₀/U: 600/1000 V

Test voltage
3000 V

Temperature range
-20°C to +105°C

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Colour	Copper index (kg/km)	Weight (kg/km)
3801000	0.5	2.5	green-yellow	4.8	11
3801001	0.5	2.5	black	4.8	11
3801002	0.5	2.5	blue	4.8	11
3801003	0.5	2.5	brown	4.8	11
3801004	0.5	2.5	red	4.8	11
3801005	0.5	2.5	white	4.8	11
3801006	0.5	2.5	grey	4.8	11
3801007	0.5	2.5	violet	4.8	11
3801008	0.5	2.5	pink	4.8	11
3801009	0.5	2.5	orange	4.8	11
38010011	0.5	2.5	yellow	4.8	11
38010012	0.5	2.5	green	4.8	11
38010014	0.5	2.5	dark blue	4.8	11
3801010	0.75	2.7	green-yellow	7.2	14.1
3801011	0.75	2.7	black	7.2	14.1
3801012	0.75	2.7	blue	7.2	14.1
3801013	0.75	2.7	brown	7.2	14.1
3801014	0.75	2.7	red	7.2	14.1
3801015	0.75	2.7	white	7.2	14.1
3801016	0.75	2.7	grey	7.2	14.1
3801017	0.75	2.7	violet	7.2	14.1
3801018	0.75	2.7	pink	7.2	14.1
3801019	0.75	2.7	orange	7.2	14.1
38010111	0.75	2.7	yellow	7.2	14.1
3801362	0.75	2.7	green	7.2	14.1
38010114	0.75	2.7	dark blue	7.2	14.1
3801020	1.0	2.9	green-yellow	9.6	17.2
3801021	1.0	2.9	black	9.6	17.2
3801022	1.0	2.9	blue	9.6	17.2
3801023	1.0	2.9	brown	9.6	17.2
3801024	1.0	2.9	red	9.6	17.2
3801025	1.0	2.9	white	9.6	17.2
3801026	1.0	2.9	grey	9.6	17.2
3801027	1.0	2.9	violet	9.6	17.2
3801028	1.0	2.9	pink	9.6	17.2
3801029	1.0	2.9	orange	9.6	17.2
38010211	1.0	2.9	yellow	9.6	17.2
38010212	1.0	2.9	green	9.6	17.2
38010214	1.0	2.9	dark blue	9.6	17.2

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Colour	Copper index (kg/km)	Weight (kg/km)
3801030	1.5	3.2	green-yellow	14.4	23.3
3801031	1.5	3.2	black	14.4	23.3
3801032	1.5	3.2	blue	14.4	23.3
3801033	1.5	3.2	brown	14.4	23.3
3801034	1.5	3.2	red	14.4	23.3
3801035	1.5	3.2	white	14.4	23.3
3801036	1.5	3.2	grey	14.4	23.3
3801037	1.5	3.2	violet	14.4	23.3
3801038	1.5	3.2	pink	14.4	23.3
3801039	1.5	3.2	orange	14.4	23.3
38010311	1.5	3.2	yellow	14.4	23.3
38010312	1.5	3.2	green	14.4	23.3
38010314	1.5	3.2	dark blue	14.4	23.3
3801040	2.5	3.7	green-yellow	24.0	34.4
3801041	2.5	3.7	black	24.0	34.4
3801042	2.5	3.7	blue	24.0	34.4
3801043	2.5	3.7	brown	24.0	34.4
3801044	2.5	3.7	red	24.0	34.4
3801045	2.5	3.7	white	24.0	34.4
3801046	2.5	3.7	grey	24.0	34.4
3801047	2.5	3.7	violet	24.0	34.4
3801048	2.5	3.7	pink	24.0	34.4
3801049	2.5	3.7	orange	24.0	34.4
38010411	2.5	3.7	yellow	24.0	34.4
38010412	2.5	3.7	green	24.0	34.4
38010414	2.5	3.7	dark blue	24.0	34.4
3801050	4.0	4.3	green-yellow	38.4	54.2
3801051	4.0	4.3	black	38.4	54.2
3801052	4.0	4.3	blue	38.4	54.2
3801053	4.0	4.3	brown	38.4	54.2
3801054	4.0	4.3	red	38.4	54.2
3801055	4.0	4.3	white	38.4	54.2
3801056	4.0	4.3	grey	38.4	54.2
3801057	4.0	4.3	violet	38.4	54.2
3801058	4.0	4.3	pink	38.4	54.2
3801059	4.0	4.3	orange	38.4	54.2
38010511	4.0	4.3	yellow	38.4	54.2
38010512	4.0	4.3	green	38.4	54.2
38010514	4.0	4.3	dark blue	38.4	54.2



Single Core Cables

Control Cabinet Single Cores • Various applications

V-90HT SC - Continued

High temperature PVC insulated cables

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Colour	Copper index (kg/km)	Weight (kg/km)
3801060	6.0	4.9	green-yellow	57.6	87.9
3801061	6.0	4.9	black	57.6	87.9
3801062	6.0	4.9	blue	57.6	87.9
3801063	6.0	4.9	brown	57.6	87.9
3801064	6.0	4.9	red	57.6	87.9
3801065	6.0	4.9	white	57.6	87.9
3801066	6.0	4.9	grey	57.6	87.9
3801067	6.0	4.9	violet	57.6	87.9
3801068	6.0	4.9	pink	57.6	87.9
3801069	6.0	4.9	orange	57.6	87.9
38010611	6.0	4.9	yellow	57.6	87.9
38010612	6.0	4.9	green	57.6	87.9
38010614	6.0	4.9	dark blue	57.6	87.9
3801070	10.0	6.5	green-yellow	96.0	138.3
3801071	10.0	6.5	black	96.0	138.3
3801072	10.0	6.5	blue	96.0	138.3
3801073	10.0	6.5	brown	96.0	138.3
3801074	10.0	6.5	red	96.0	138.3
3801075	10.0	6.5	white	96.0	138.3
3801076	10.0	6.5	grey	96.0	138.3
3801077	10.0	6.5	violet	96.0	138.3
3801078	10.0	6.5	pink	96.0	138.3
3801079	10.0	6.5	orange	96.0	138.3
38010711	10.0	6.5	yellow	96.0	138.3
38010712	10.0	6.5	green	96.0	138.3
38010714	10.0	6.5	dark blue	96.0	138.3
3801080	16.0	8.4	green-yellow	153.6	230.6
3801081	16.0	8.4	black	153.6	230.6
3801082	16.0	8.4	blue	153.6	230.6
3801083	16.0	8.4	brown	153.6	230.6
3801084	16.0	8.4	red	153.6	230.6
3801085	16.0	8.4	white	153.6	230.6
3801086	16.0	8.4	grey	153.6	230.6

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Colour	Copper index (kg/km)	Weight (kg/km)
3801087	16.0	8.4	violet	153.6	230.6
3801088	16.0	8.4	pink	153.6	230.6
3801089	16.0	8.4	orange	153.6	230.6
38010811	16.0	8.4	yellow	153.6	230.6
38010812	16.0	8.4	green	153.6	230.6
38010814	16.0	8.4	dark blue	153.6	230.6
3802410	25.0	10.2	green-yellow	240.0	305
3802411	25.0	10.2	black	240.0	305
3802412	25.0	10.2	blue	240.0	305
3802413	25.0	10.2	brown	240.0	305
3802414	25.0	10.2	red	240.0	305
3802415	25.0	10.2	white	240.0	305
3802416	25.0	10.2	grey	240.0	305
3802417	25.0	10.2	violet	240.0	305
3802418	25.0	10.2	pink	240.0	305
3802419	25.0	10.2	orange	240.0	305
38024111	25.0	10.2	yellow	240.0	305
38024112	25.0	10.2	green	240.0	305
38024114	25.0	10.2	dark blue	240.0	305
3802420	35.0	12.4	green-yellow	336.0	437
3802421	35.0	12.4	black	336.0	437
3802422	35.0	12.4	blue	336.0	437
3802423	35.0	12.4	brown	336.0	437
3802424	35.0	12.4	red	336.0	437
3802425	35.0	12.4	white	336.0	437
3802426	35.0	12.4	grey	336.0	437
3802427	35.0	12.4	violet	336.0	437
3802428	35.0	12.4	pink	336.0	437
3802429	35.0	12.4	orange	336.0	437
38024211	35.0	12.4	yellow	336.0	437
38024212	35.0	12.4	green	336.0	437
38024214	35.0	12.4	dark blue	336.0	437

CURRENT RATINGS FOR V90HT BUILDING WIRE

Conductor cross-sectional area	Spaced		Unenclosed		Touching		Enclosed		Single Phase Voltage Drop
	Spaced	Spaced from surface	Spaced from surface	Spaced from surface	Touching	Touching	Conduit in air	Conduit in air	
mm²	A	A	A	A	A	A	A	A	mV/A/m
1	16	16	16	14	13	13	13	11	54.0
1.5	21	20	21	17	16	16	16	14	34.6
2.5	30	29	29	25	23	23	22	20	18.9
4	40	38	39	33	31	31	30	26	11.7
6	51	49	49	42	40	40	38	34	7.86
10	69	67	67	58	54	54	53	47	4.67
16	92	89	89	77	72	72	71	62	2.94

These ratings are based on an ambient air temperature of 40° C, and an ambient soil temperature of 15° C at 0.5m depth.

ACCESSORIES Lugs

LUGS FOR SINGLE CORE TERMINATION

Conductor	Bolt Hole Size (mm)					
	4	5	6	8	10	12
4mm²	61796570	61796580	61796590			
6mm²	61796600	61796610	61796620	61796630		
10mm²		61796640	61796650	61796660	61796670	
16mm²		61796690	61796700	61796710	61796720	61796730
25mm²			61796740	61796750	61796760	61796770
35mm²			61796780	61796790	61796800	61796810
50mm²			61796820	61796830	61796840	61796850
70mm²				61796860	61796870	61796880
95mm²				61796890	61796900	61796910
120mm²					61796930	61796940
150mm²						61796960
185mm²						61796990



Single Core cables

Control Cabinet Single Cores • Various applications



H05V-K <HAR>

European <HAR> cable type certification



Benefits

- Cables' <HAR>marking also stands for the international endorsement of national certification institutes' testing marks and certificates, e. g. <VDE><HAR>. The <HAR>marking is of special importance in case of goods traffic between European countries.

Application range

- Internal wiring of devices
- Protected installation in and on lighting equipments
- Signal systems in and on plaster in tubes

Product features

- Flame-retardant according IEC 60332-1-2
- Spool: d1 = 18 mm; d2 = 200 mm; b = 85 mm

Norm references / Approvals

- <HAR> cable type certification acc. EN 50525-2-31

Product Make-up

- Fine-wired copper conductor of bare copper strands in line with conductor class 5 acc. IEC 60228
- Core insulation: Based on PVC

Technical data

	Classification ETIM 5.0 Class-ID: EC000993 ETIM 5.0 Class-Description: Single core cable
	Conductor stranding Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
	Minimum bending radius According to EN 50565-1 4 x outer diameter (OD) for normal use; 2 x OD for cautions bending
	Nominal voltage U ₀ /U: 300/500 V
	Test voltage 2000 V
	Current rating VDE 0298 Part 4 EN 50565-1/ VDE 0298-565-1
	Temperature range Fixed installation: -40°C to +80°C Moved: +5°C to +70°C

Conductor cross-section (mm²)	Outer diameter (mm)	m/ring	m/spool	Copper index (kg/km)	Weight (kg/km)	brown	black	grey	blue	green/yellow
0.5	2.1 - 2.5	100		4.8	9	4510031	4510011	4510061	4510021	4510001
0.75	2.2 - 2.7	100		7.2	12	4510032	4510012	4510062	4510022	4510002
1	2.4 - 2.8	100		9.6	15	4510033	4510013	4510063	4510023	4510003
0.5	2.1 - 2.5		250	4.8	9	4510031S	4510011S	4510061S	4510021S	4510001S
0.75	2.2 - 2.7		250	7.2	12	4510032S	4510012S	4510062S	4510022S	4510002S
1	2.4 - 2.8		250	9.6	15	4510033S	4510013S	4510063S	4510023S	4510003S

Conductor cross-section (mm²)	Outer diameter (mm)	m/ring	m/spool	Copper index (kg/km)	Weight (kg/km)	orange	dark blue	white	green	yellow
0.5	2.1 - 2.5	100		4.8	9	4510091	4510141	4510051	4510121	4510111
0.75	2.2 - 2.7	100		7.2	12	4510092	4510142	4510052	4510122	4510112
1	2.4 - 2.8	100		9.6	15	4510093	4510143	4510053	4510123	4510113
0.5	2.1 - 2.5		250	4.8	9	4510091S	4510141S	4510051S	4510121S	4510111S
0.75	2.2 - 2.7		250	7.2	12	4510092S	4510142S	4510052S	4510122S	4510112S
1	2.4 - 2.8		250	9.6	15	4510093S	4510143S	4510053S	4510123S	

Conductor cross-section (mm²)	Outer diameter (mm)	m/ring	m/spool	Copper index (kg/km)	Weight (kg/km)	violet	red	ultra-marine blue	Dark blue/white	transparent
0.5	2.1 - 2.5	100		4.8	9	4510071	4510041	4510161	4510921	
0.75	2.2 - 2.7	100		7.2	12	4510072	4510042		4510922	
1	2.4 - 2.8	100		9.6	15	4510073	4510043	4510163	4510923	
0.5	2.1 - 2.5		250	4.8	9	4510071S	4510041S			
0.75	2.2 - 2.7		250	7.2	12	4510072S	4510042S	4510162S		4510102S
1	2.4 - 2.8		250	9.6	15	4510073S	4510043S	4510163S		4510103S

Conductor cross-section (mm²)	Outer diameter (mm)	m/ring	m/spool	Copper index (kg/km)	Weight (kg/km)	pink
0.5	2.1 - 2.5	100		4.8	9	4510081
0.75	2.2 - 2.7	100		7.2	12	4510082
1	2.4 - 2.8	100		9.6	15	4510083
0.75	2.2 - 2.7		250	7.2	12	4510082S



Single Core cables

Control Cabinet Single Cores • Various applications

H07V-K <HAR>

European <HAR> cable type certification



Benefits

- Cables' <HAR>marking also stands for the international endorsement of national certification institutes' testing marks and certificates, e. g. <VDE><HAR>. The <HAR>marking is of special importance in case of goods traffic between European countries.

Application range

- Laying in tubes, exposed or buried in plaster, and in closed installation ducts
- For direct laying on racks, troughs and tubes only as potential equalisation conductor

Product features

- Flame-retardant according IEC 60332-1-2
- Spool: d1 = 18 mm; d2 = 200 mm; b = 85 mm

Norm references / Approvals

- <HAR> cable type certification acc. EN 50525-2-31
- No cable type certified core insulation colours according to EN 50525-1/ VDE 0285-525-1: transparent, green (single colour), yellow (single colour), all double colours (except of green-yellow and yellow-green)

Product Make-up

- Fine-wired copper conductor of bare copper strands in line with conductor class 5 acc. IEC 60228
- Core insulation: Based on PVC

Technical data

	Classification ETIM 5.0 Class-ID: EC000993 ETIM 5.0 Class-Description: Single core cable
	Conductor stranding Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
	Minimum bending radius According to EN 50565-1 OD ≤ 8 mm: 4 x OD* / 2 x OD**; 8 < OD ≤ 12 mm: 5 x OD* / 3 x OD**; OD > 12 mm: 6 x OD* / 4 x OD**
	Nominal voltage U ₀ /U: 450/750 V
	Test voltage 2500 V
	Current rating VDE 0298 Part 4 EN 50565-1/ VDE 0298-565-1
	Temperature range Fixed installation: -40°C to +80°C Moved: +5°C to +70°C

Conductor cross-section (mm²)	Outer diameter (mm)	m/ring	m/spool	Copper index (kg/km)	Weight (kg/km)	brown	black	grey	blue	green/yellow
1.5	2.8 - 3.4		150	14.4	22	4520031S	4520011S	4520061S	4520021S	4520001S
2.5	3.4 - 4.1		100	24	37	4520032S	4520012S	4520062S	4520022S	4520002S
1.5	2.8 - 3.4	100		14.4	22	4520031	4520011	4520061	4520021	4520001
2.5	3.4 - 4.1	100		24	37	4520032	4520012	4520062	4520022	4520002
4	3.9 - 4.8	100		38.4	45	4520033	4520013	4520063	4520023	4520003
6	4.4 - 5.3	100		57.6	71	4520034	4520014	4520064	4520024	4520004
10	5.7 - 6.8	100		96	120	4520035	4520015	4520065	4520025	4520005
16	6.7 - 8.1			153.6	187	4520036	4520016	4520066	4520026	4520006
25	8.4 - 10.2			240	290	4521031	4521011		4521021	4521001
35	9.7 - 11.7			336	399	4521032	4521012	4521062	4521022	4521002
50	11.5 - 13.9			480	559		4521013		4521023	4521003
70	13.2 - 16			672	776		4521014		4521024	4521004
95	15.1 - 18.2			912	1031		4521015		4521025	4521005
120	16.7 - 20.2			1152	1285		4521016			4521006
150	18.6 - 22.5			1440	1563		4521017			4521007
185	20.6 - 24.9			1776	1915		4521018			4521008
240	23.5 - 28.4			2304	2550		4521019			4521009

Conductor cross-section (mm²)	Outer diameter (mm)	m/ring	m/spool	Copper index (kg/km)	Weight (kg/km)	orange	dark blue	white	green	yellow
1.5	2.8 - 3.4		150	14.4	22		4520141S	4520051S		
2.5	3.4 - 4.1		100	24	37		4520142S	4520052S		
1.5	2.8 - 3.4	100		14.4	22	4520091	4520141	4520051	4520121	4520111
2.5	3.4 - 4.1	100		24	37	4520092	4520142	4520052	4520122	4520112
4	3.9 - 4.8	100		38.4	45	4520093	4520143	4520053	4520123	4520113
6	4.4 - 5.3	100		57.6	71	4520094	4520144	4520054	4520124	4520114
10	5.7 - 6.8	100		96	120	4520095	4520145	4520055		
16	6.7 - 8.1			153.6	187	4520096	4520146	4520056	4520126	
25	8.4 - 10.2			240	290	4521091				
35	9.7 - 11.7			336	399	4521092				
1.5	2.8 - 3.4		150	14.4	22		4520041S			
2.5	3.4 - 4.1		100	24	37		4520042S			
1.5	2.8 - 3.4	100		14.4	22	4520071	4520041	4520161		
2.5	3.4 - 4.1	100		24	37	4520072	4520042	4520162		
4	3.9 - 4.8	100		38.4	45		4520043	4520163		
6	4.4 - 5.3	100		57.6	71	4520074	4520044	4520164		
10	5.7 - 6.8	100		96	120		4520045			
16	6.7 - 8.1			153.6	187		4520046			
25	8.4 - 10.2			240	290		4521041			
35	9.7 - 11.7			336	399		4521042			
50	11.5 - 13.9			480	559		4521043			
70	13.2 - 16			672	776		4521044			

* For conventional use OD = outer diameter ** For careful bending



LSZH Tinned Appliance Wire 110 Degree

Halogen-free, low smoke, high temperature, flame retardant flexible cables



Construction	Insulation	Applications	Nominal Voltage	Standards
• Flexible tinned copper wire stranding class 5 (0,5-10mm ²), or class 6 (16 and more) according to IEC 60228 and AS/NZS 1125.	• Cross-linked, halogen-free, flame retardant compound type X-HF-110 acc. to AS/NZS 3808, chemical ,oil and UV resistant.	• Wiring of switchboards, control, general wiring, instrumentation and communication systems. Used where LSZH is needed and where higher current ratings are required.	• 600/1000V Test Voltage • 3000V Temperature Rating • 110°C	• Cable Construction: AS/NZS 5000.1 • Flame retardant: AS/NZS 1660.5.1; IEC 60332-3-22 Cat. A; IEC 60332-1 • Smoke density: AS/NZS 1660.5.2; IEC 61034-2 • Halogen acid gas content: AS/NZS 1660.5.3, IEC 60754-1 • Gases evolved during combustion: AS/NZS 1660.5.4, IEC 60754-2

Conductor	0.5mm ²	0.75mm ²	1mm ²	1.5mm ²	2.5mm ²	4mm ²	6mm ²	10mm ²	16mm ²
Cable OD	2.3mm	2.5mm	2.6mm	2.9mm	3.4mm	3.9mm	4.4mm	5.4mm	6.4mm
Earth	8101100	8101010	8101120	8101130	8101140	8101150	8101160	8101170	8101180
Black	8101101	8101111	8101121	8101131	8101141	8101151	8101161	8101171	8101181
Red	8101004	8101114	8101124	8101134	8101144	8101154	8101164	8101174	8101184
White	8101005	8101115	8101125	8101135	8101145	8101155	8101165	8101175	8101185
Blue	8101002	8101112	8101122	8101132	8101142	8101152	8101162	8101172	8101182
Brown	8101003	8101113	8101123	8101133	8101143				
Grey	8101006	8101116	8101126	8101136	81011046				
Orange	8101009	8101119	8101129	8101139					
Violet	8101007	8101117	8101127	8101137					
Pink	8101108	8101118	8101128	8101138					
Yellow	81011011	8101111	81011211	81011311					

CURRENT RATINGS FOR 110 APPLIANCE WIRE

Conductor cross-sectional area	Unenclosed							
	Spaced				Touching			
	Spaced from surface				Conduit in air			
mm ²	Cu	Cu	Cu	Cu	Cu	Cu	Cu	Cu
1	25	24	24	21	20	20	20	17
1.5	32	31	31	27	25	25	25	22
2.5	45	43	44	38	36	36	35	32
4	59	57	58	50	47	47	46	41
6	75	73	73	63	59	59	58	51
10	105	99	99	86	81	81	78	71
16	135	130	130	115	105	105	105	93

These ratings are based on 40°C ambient air temperature and 25°C ambient soil temperature.



UNITRONIC® LiYY

Data transmission cable with colour code acc. to DIN 47100



Benefits • Space-saving installation due to small cable diameters • Multifunctional application possibilities • Depending on the quantity, the outer sheath can also be produced in other colours to match your application needs	Product features • Despite the large number of cores, LiYY data cables have small outer diameters • Flame-retardant according IEC 60332-1-2
Application range • UNITRONIC® LiYY is also used as a control and signal cable in electronics of computer systems, electronic control equipment, office machines, balances, etc. • Dry or damp rooms • Occasional flexing	Norm references / Approvals • Based on VDE 0812 Product Make-up • Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires • Core insulation made of PVC • Outer sheath made of PVC Outer sheath colour: pebble grey (RAL 7032)

Info • The classic for multi-functional use	Technical data Classification ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable Core identification code DIN 47100 without colour repetition Mutual capacitance Approx. 120 nF/km Peak operating voltage (not for power applications) at 0.14 mm ² : 350 V at ≥ 0.25 mm ² : 500 V Inductivity approx. 0.65 mH/km Conductor stranding Stranded, fine-wire 0.34 mm ² : 7-wire Minimum bending radius Occasional flexing: 10 x outer diameter Fixed installation: 4 x outer diameter Test voltage At 0.14 mm ² : 1200 V Temperature range Occasional flexing: -5°C to +70°C Fixed installation: -40°C to +80°C
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Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiYY				
0028202	2 x 0.14	3.2	2.7	13.2
0028203	3 x 0.14	3.4	4.05	16
0028204	4 x 0.14	3.6	5.4	18.9
0028205	5 x 0.14	3.9	6.72	22.2
0028207	7 x 0.14	4.2	9.45	28.4
0028208	8 x 0.14	4.9	10.2	35.2
0028210	10 x 0.14	5.2	13.5	41.2
0028212	12 x 0.14	5.6	16.2	48.4
0028214	14 x 0.14	5.8	18.9	52.9
0028216	16 x 0.14	6.1	21.6	59.1
0028220	20 x 0.14	7	27	70.8
0028225	25 x 0.14	7.8	33.6	87.2
0028236	36 x 0.14	8.6	48.6	126.8
0028237	37 x 0.14	8.9	49.7	118
0028240	40 x 0.14	9.3	54	139.1
0028250	50 x 0.14	10.4	67.5	170.9
0028256	56 x 0.14	10.7	78.4	187
0028302	2 x 0.25	3.8	4.8	18
0028303	3 x 0.25	4	7.2	22
0028304	4 x 0.25	4.3	9.6	26.2
0028305	5 x 0.25	4.7	12	31
0028306	6 x 0.25	5.1	14.4	39
0028307	7 x 0.25	5.1	16.8	42
0028308	8 x 0.25	6.2	19.2	49.2
0028310	10 x 0.25	6.8	24	58
0028312	12 x 0.25	7	28.8	67
0028314	14 x 0.25	7.3	33.6	75.3
0028316	16 x 0.25	7.7	38.4	84.3
0028318	18 x 0.25	8.1	43.2	93
0028320	20 x 0.25	8.6	48	102
0028325	25 x 0.25	9.6	60	134
0028330	30 x 0.25	10.3	72	155
0028332	32 x 0.25	10.7	76.8	164
0028336	36 x 0.25	11.1	86.4	182.2
0028337	37 x 0.25	11.4	88.8	185
0028340	40 x 0.25	12	96.1	200
0028350	50 x 0.25	12.9	120	257.1
0028402	2 x 0.34	4.2	6.6	25
0028403	3 x 0.34	4.4	9.9	31
0028404	4 x 0.34	4.8	13.1	43.2
0028405	5 x 0.34	5.5	16.5	53.8
0028406	6 x 0.34	5.9	19.6	55
0028407	7 x 0.34	5.9	22.8	62

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0028408	8 x 0.34	7.1	26.1	73.1
0028410	10 x 0.34	7.6	32.6	82
0028412	12 x 0.34	7.8	39.1	102
0028414	14 x 0.34	8.2	45.7	109
0028416	16 x 0.34	8.7	52	127
0028420	20 x 0.34	9.6	65.2	159.3
0028421	21 x 0.34	10.4	68.6	167
0028425	25 x 0.34	11.2	81.6	190
0028430	30 x 0.34	11.6	98	226
0028436	36 x 0.34	12.5	118	284
0028440	40 x 0.34	13.5	131	317
0028450	50 x 0.34	15	163	407
0028502	2 x 0.50	4.7	9.6	40
0028503	3 x 0.50	5	14.4	47
0028504	4 x 0.50	5.6	19.2	56
0028505	5 x 0.50	6.1	24	65
0028507	7 x 0.50	6.9	33.6	82
0028508	8 x 0.50	8	38.4	90
0028510	10 x 0.50	8.6	48	117
0028512	12 x 0.50	8.9	58	133
0028516	16 x 0.50	10.2	77	170
0028520	20 x 0.50	11.4	96	214
0028525	25 x 0.50	12.7	120	265
0028530	30 x 0.50	13.2	144	304
0028540	40 x 0.50	15.8	192	392
0028602	2 x 0.75	5.1	14.4	48
0028603	3 x 0.75	5.6	21.6	57
0028604	4 x 0.75	6.1	28.8	69
0028605	5 x 0.75	6.9	36	78
0028607	7 x 0.75	7.5	50	112
0028608	8 x 0.75	8.7	58	126
0028610	10 x 0.75	9.4	72	149
0028612	12 x 0.75	10.1	86	176
0028616	16 x 0.75	11.2	115	218
0028620	20 x 0.75	12.4	144	274
0028625	25 x 0.75	14	180	285
0028702	2 x 1.00	5.6	19.2	55
0028703	3 x 1.00	5.9	29	70
0028704	4 x 1.00	6.4	38.4	79
0028705	5 x 1.00	7.3	48	98
0028802	2 x 1.50	6.2	29	74
0028803	3 x 1.50	6.8	43	89
0028804	4 x 1.50	7.4	58	105



UNITRONIC® LiYCY

Screened data transmission cable with colour code acc. to DIN 47100



Technical data

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

Core identification code
DIN 47100 without colour repetition

Mutual capacitance
C/C: approx. 120 nF/km
C/S: approx. 160 nF/km

Peak operating voltage
(not for power applications)
at 0.14 mm²: 350 V
at ≥ 0.25 mm²: 500 V

Inductivity
approx. 0.65 mH/km

Conductor stranding
Stranded, fine-wire
0.34 mm²: 7-wire

Minimum bending radius
Occasional flexing: 15 x outer diameter
Fixed installation: 6 x outer diameter

Test voltage
At 0.14 mm²: 1200 V

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

- Benefits**
 - Overall braid minimises electrical interference
 - Multifunctional application possibilities
- Application range**
 - Screened cables with small dimensions are suitable for use in computer systems, instrumentation technology, office equipment, balances.
 - Dry or damp rooms
- Product features**
 - Flame-retardant according IEC 60332-1-2

- Norm references / Approvals**
 - Based on VDE 0812
- Product Make-up**
 - Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
 - Core insulation made of PVC
 - Tinned-copper braiding
 - Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiYCY				
0034302	2 x 0.14	3.9	12	20
0034303	3 x 0.14	4.1	13	28
0034304	4 x 0.14	4.3	14.3	33
0034305	5 x 0.14	4.6	15.5	38
0034306	6 x 0.14	4.9	18.2	38
0034307	7 x 0.14	4.9	19	49
0034308	8 x 0.14	5.8	21.2	56
0034310	10 x 0.14	6.1	28.5	66
0034312	12 x 0.14	6.3	30.4	78
0034314	14 x 0.14	6.7	32	80
0034315	15 x 0.14	6.9	37.8	86
0034316	16 x 0.14	7	43	90
0034318	18 x 0.14	7.3	48.8	104
0034320	20 x 0.14	7.7	53.9	116
0034321	21 x 0.14	7.9	55.5	121
0034324	24 x 0.14	8.4	61	132
0034325	25 x 0.14	8.5	63	149
0034328	28 x 0.14	8.5	66.1	153
0034330	30 x 0.14	8.7	69	158
0034336	36 x 0.14	9.3	83	183
0034340	40 x 0.14	10.4	87.5	210
0034344	44 x 0.14	10.7	110.5	225
0034350	50 x 0.14	11.1	122.5	253
0034402	2 x 0.25	4.5	16	32
0034403	3 x 0.25	4.7	21	37
0034404	4 x 0.25	5	24	41.3
0034405	5 x 0.25	5.6	29	51.2
0034406	6 x 0.25	6	30	58
0034407	7 x 0.25	6	37	65
0034408	8 x 0.25	7.1	42	73
0034410	10 x 0.25	7.5	46	82
0034412	12 x 0.25	7.7	53	98



Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0034414	14 x 0.25	8	59	99
0034415	15 x 0.25	8.3	61	111
0034416	16 x 0.25	8.4	64	124
0034418	18 x 0.25	8.8	83	143
0034420	20 x 0.25	9.3	88	152.3
0034421	21 x 0.25	9.6	93	161
0034425	25 x 0.25	10.7	114	172
0034428	28 x 0.25	10.8	126	181.1
0034432	32 x 0.25	11.4	138	203
0034436	36 x 0.25	11.8	148	220
0034440	40 x 0.25	12.7	157	248
0034450	50 x 0.25	13.8	178	318
0034461	61 x 0.25	15	205	365.2
0034502	2 x 0.34	4.9	21	37
0034503	3 x 0.34	5.1	27	49
0034504	4 x 0.34	5.7	28	59
0034505	5 x 0.34	6.2	30	66
0034506	6 x 0.34	6.8	45	79
0034507	7 x 0.34	6.8	48	83
0034508	8 x 0.34	7.8	52	94
0034510	10 x 0.34	8.3	74	129.2
0034512	12 x 0.34	8.5	80	142
0034514	14 x 0.34	8.9	86	154
0034515	15 x 0.34	9.2	90	155
0034516	16 x 0.34	9.4	94	160
0034518	18 x 0.34	10.2	103	173
0034520	20 x 0.34	10.7	112	192
0034521	21 x 0.34	11.1	116	199.2
0034525	25 x 0.34	11.9	135	259
0034528	28 x 0.34	12	153	280
0034530	30 x 0.34	12.3	159	291.1
0034532	32 x 0.34	13	165	305
0034536	36 x 0.34	13.4	179	331
0034540	40 x 0.34	14.8	200	365
0034550	50 x 0.34	15.9	235	431
0034602	2 x 0.50	5.6	29	54
0034603	3 x 0.50	5.9	38	67
0034604	4 x 0.50	6.3	43	77
0034605	5 x 0.50	7	51	90
0034606	6 x 0.50	7.6	59	104
0034607	7 x 0.50	7.6	65	112
0034608	8 x 0.50	8.7	70	135
0034610	10 x 0.50	9.3	88	160
0034612	12 x 0.50	9.6	99	177
0034618	18 x 0.50	11.8	134	239
0034620	20 x 0.50	12.1	149	276
0034625	25 x 0.50	13.7	211	352
0034630	30 x 0.50	14.5	230	397
0034702	2 x 0.75	6	38	64
0034703	3 x 0.75	6.3	49	76
0034704	4 x 0.75	7	58	92
0034705	5 x 0.75	7.6	67	109
0034707	7 x 0.75	8.2	100	156
0034710	10 x 0.75	10.5	130	187
0034712	12 x 0.75	10.8	154	218
0034718	18 x 0.75	13	195	327
0034725	25 x 0.75	15.3	280	454
0034730	30 x 0.75	15.8	312	486
0034802	2 x 1.00	6.3	43	72
0034803	3 x 1.00	6.8	56	90
0034804	4 x 1.00	7.3	68	109
0034805	5 x 1.00	8	79	126
0034807	7 x 1.00	8.6	118	171
0034810	10 x 1.00	11.1	140	228
0034812	12 x 1.00	11.4	168	259
0034818	18 x 1.00	13.4	252	389
0034825	25 x 1.00	16.2	335	517
0034902	2 x 1.50	7.1	58	90
0034903	3 x 1.50	7.5	74	115
0034904	4 x 1.50	8.1	108	153
0034905	5 x 1.50	8.8	129	176
0034907	7 x 1.50	9.5	164	220
0034912	12 x 1.50	12.7	254	376
0034918	18 x 1.50	15.3	350	519
0034925	25 x 1.50	17.9	550	901



Data cables

Low frequency data transmission cables • DIN colour code



UNITRONIC® LiYCY (TP)

Screened data transmission cable with colour code acc. to DIN 47100 and twisted pairs

info

- TP = twisted pair



Technical data

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

Core identification code
DIN 47100

Mutual capacitance
C/C: approx. 120 nF/km
C/S: approx. 160 nF/km

Peak operating voltage
(not for power applications)
at 0.14 mm²: 350 V
at ≥ 0.25 mm²: 500 V

Inductivity
approx. 0.65 mH/km

Conductor stranding
Fine copper wire strands

Minimum bending radius
Occasional flexing: 15 x outer diameter
Fixed installation: 6 x outer diameter

Test voltage
At 0.14 mm²: 1200 V

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

- Benefits**
 - Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)
 - Overall braid minimises electrical interference
- Application range**
 - Can be used multifunctional in electronics of computer systems, electronic control equipment, office machines, balances, etc.
 - Dry or damp rooms
- Product features**
 - Good protection against capacitive interference from electric fields (e.g. power cable)
 - Flame-retardant according IEC 60332-1-2

- Norm references / Approvals**
 - Based on VDE 0812
- Product Make-up**
 - Fine-wire strand made of bare copper wires
 - Core insulation made of PVC
 - TP structure
 - Tinned-copper braiding
 - Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Article number	Dimension and cross section in mm²	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiYCY (TP)				
0035131	2 x 2 x 0,14	5.3	18.5	39
0035141	3 x 2 x 0,14	5.8	23	48
0035132	4 x 2 x 0,14	6.2	26.6	54
0035133	6 x 2 x 0,14	7.1	48.5	85
0035150	8 x 2 x 0,14	8.2	53.7	97
0035134	10 x 2 x 0,14	8.7	59	110
0035135	12 x 2 x 0,14	8.9	66	142
0035136	16 x 2 x 0,14	10.2	79	154
0035142	20 x 2 x 0,14	11.3	97	184
0035137	25 x 2 x 0,14	12.5	113	238
0035800	2 x 2 x 0.25	6.3	28	54
0035801	3 x 2 x 0.25	7.1	39.6	68.5
0035802	4 x 2 x 0.25	7.6	44.9	81
0035803	6 x 2 x 0.25	8.5	69.5	115
0035804	8 x 2 x 0.25	10.3	76.9	130
0035805	10 x 2 x 0.25	11	102	158
0035806	12 x 2 x 0.25	11.3	120	190
0035807	16 x 2 x 0.25	12.5	146.5	238
0035808	25 x 2 x 0.25	16.1	205	344

Article number	Dimension and cross section in mm²	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0035810	2 x 2 x 0.5	7.9	48.1	93
0035811	3 x 2 x 0.5	8.7	73.7	129
0035812	4 x 2 x 0.5	9.4	82	146
0035813	6 x 2 x 0.5	11.1	110	198
0035814	8 x 2 x 0.5	13.1	139	259
0035816	12 x 2 x 0.5	14.9	198.3	354
0035817	16 x 2 x 0.5	16.5	240	459
0035820	2 x 2 x 0,75	8.5	58	106
0035821	3 x 2 x 0,75	9.4	84	140
0035822	4 x 2 x 0,75	10.7	108	179
0035827	5 x 2 x 0,75	11.1	126	215
0035823	6 x 2 x 0,75	12.1	146	246
0035824	8 x 2 x 0,75	14.7	180	305
0035825	12 x 2 x 0,75	16.2	261	456
0035830	2 x 2 x 1	9	84	142
0035831	3 x 2 x 1	10.4	96	173
0035832	4 x 2 x 1	11.3	121	212
0035836	5 x 2 x 1	11.8	161	266



info

- The classic for multi-functional use

Technical data

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

Core identification code
Colours according to VDE 0293-308
From 6 cores: black with white numbers

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

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

Nominal voltage
U₀/U: 300/500 V

Test voltage
2000 V

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

Temperature range
-50 °C to +180 °C
(adequate ventilation required)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 180 SiHF				
0046001	2 X 0.75	6.4	14.4	59
0046002	3 G 0.75	6.8	21.6	70
00460033	4 G 0.75	7.6	28.8	89
00460043	5 G 0.75	8.5	36	112
0046005	6 G 0.75	9.2	43.2	131
0046006	7 G 0.75	9.2	50.4	136
0046007	2 X 1	6.6	19.2	66
0046008	3 G 1	7.0	29	79
00460093	4 G 1	7.9	38.4	101
00460103	5 G 1	8.8	48	127
0046012	7 G 1	9.5	67	156
0046013	2 X 1.5	7.6	29	90
0046014	3 G 1.5	8.0	43	109
00460153	4 G 1.5	8.8	58	134
00460163	5 G 1.5	9.6	72	163
0046018	7 G 1.5	10.4	101	202
0046039	12 G 1.5	14.0	173	361
0046040	16 G 1.5	16.2	230.4	478
0046041	20 G 1.5	17.5	288	574
0046042	24 G 1.5	19.8	345.6	720

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0046019	2 X 2.5	8.8	48	128
0046020	3 G 2.5	9.7	72	167
00460213	4 G 2.5	10.6	96	206
00460223	5 G 2.5	11.6	120	251
0046024	7 G 2.5	12.6	168	313
0046025	2 X 4	10.8	76.8	196
0046026	3 G 4	11.5	115	241
00460273	4 G 4	12.6	154	300
00460283	5 G 4	14.0	192	374
0046030	7 G 4	15.6	269	486
0046031	2 X 6	12.4	116	268
0046032	3 G 6	13.2	173	333
00460333	4 G 6	14.7	230	425
00460343	5 G 6	16.6	288	538
0046036	7 G 6	18.6	403	705
00460373	4 G 10	19.4	384	707
00460453	5 G 10	21.6	480	878
00460383	4 G 16	21.4	614	1004



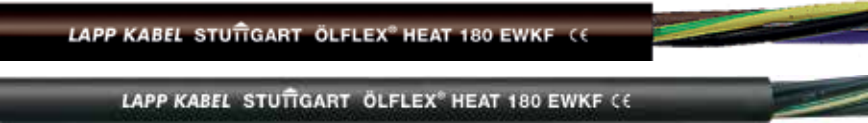
High Temperature cables

Expanded ambient temperatures • Silicone cables (-50°C to +180°C)



ÖLFLEX® HEAT 180 EWKF

Silicone cables with increased mechanical characteristics



Benefits

- Longer durability in harsh applications than conventional silicone cables
- Notch and tear-resistant silicone compounds reduce damage due to mechanical stress
- Due to the use of special additives in EWKF silicone, armoured cable versions will not be required
- Flexibility simplifies installation where space is limited
- Possesses insulating properties after combustion due to remaining SiO₂ ash on the conductor

Application range

- Areas with high ambient temperatures and occasionally mechanical stress
- Typical fields of application
 - Steel, ceramic and iron works
 - Bakery equipment and industrial furnaces
 - Electric motor industry
 - Sauna/solarium construction
 - Thermal and heating elements
 - Lighting technology
 - Ventilator engineering
 - Air-conditioning technology
 - Galvanisation technology

Product features

- **EWKF:**
 - Initial tear propagation and notch resistance
- Halogen-free (IEC 60754-1), no corrosive gases (IEC 60754-2), flame-retardant (IEC 60332-1-2)
- Good hydrolysis and UV-resistance
- Resistant to a multitude of oils, alcohols, vegetable and animal fats and chemical substances
- Adequate ventilation must be ensured, since the mechanical properties of silicone cables decrease from +100°C in the absence of air

Norm references / Approvals

- Based on EN 50525-2-83

Product Make-up

- Fine-wire, tinned-copper conductor
- Core insulation: based on EWKF silicone
- Cores twisted together
- Outer sheath: silicone-based EWKF, notch-resistant, black



info

- Proven notch-resistant EWKF quality

Technical data



Classification

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



Core identification code

Colours according to VDE 0293-308
From 6 cores: black with white numbers



Conductor stranding

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



Minimum bending radius

Occasional flexing: 15 x outer diameter
Fixed installation: 4 x outer diameter



Nominal voltage

U₀/U: 300/500 V



Test voltage

2000 V



Protective conductor

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



Temperature range

-50 °C to +180 °C
(adequate ventilation required)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 180 EWKF				
0046500	2 X 0.75	6.4	15	49
0046501	3 G 0.75	6.9	22	60
00465023	4 G 0.75	7.6	29	76
00465033	5 G 0.75	8.5	36	96
0046506	2 X 1	6.8	20	56
0046507	3 G 1	7.1	29	68
00465083	4 G 1	7.9	39	88
00465093	5 G 1	8.8	48	110
0046110	7 G 1	9.5	67.2	137
0046511	2 X 1.5	8.0	29	77
0046512	3 G 1.5	8.4	43	94
00465133	4 G 1.5	9.5	58	117
00465143	5 G 1.5	10.4	72	143
0046115	7 G 1.5	11.0	101	180
0046116	12 G 1.5	14.9	173	319
0046117	16 G 1.5	17.1	230.4	424
0046119	24 G 1.5	21.0	345.6	637

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0046520	2 X 2.5	9.4	48	110
0046521	3 G 2.5	9.8	72	146
00465223	4 G 2.5	11.1	96	181
00465233	5 G 2.5	12.4	120	222
0046131	3 G 4	11.5	114	213
00461323	4 G 4	12.5	152	267
00461333	5 G 4	13.9	190	334
0046141	3 G 6	13.2	174	297
00461423	4 G 6	14.7	232	381
00461433	5 G 6	16.5	290	481



info

- Proven notch-resistant EWKF quality
- EMC compliant copper screening

Technical data



Classification

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



Core identification code

Up to 5 cores: colour-coded according to VDE 0293-308
From 6 cores: black with white numbers



Conductor stranding

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



Minimum bending radius

Occasional flexing: 20 x outer diameter
Fixed installation: 6 x outer diameter



Nominal voltage

U₀/U: 300/500 V



Test voltage

2000 V



Protective conductor

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



Temperature range

-50 °C to +180 °C
(adequate ventilation required)

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 180 EWKF C				
0046301	2 X 0.75	8.6	37.5	104
0046302	3 G 0.75	8.9	46.1	118
00463033	4 G 0.75	10.2	57.3	152
00463043	5 G 0.75	10.9	67.3	176
0046307	2 X 1	9.0	43	116
0046308	3 G 1	9.7	55.7	142
00463093	4 G 1	10.9	67.8	175
00463103	5 G 1	11.6	80.3	203
0046312	7 G 1	12.3	113.9	250
0046313	2 X 1.5	10.8	58	166
0046314	3 G 1.5	11.2	74	188
00463153	4 G 1.5	12.0	91.4	222
00463163	5 G 1.5	12.8	121.7	273
0046318	7 G 1.5	13.6	157.2	341

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0046320	3 G 2.5	12.8	121.2	271
00463213	4 G 2.5	13.9	150.9	328
00463223	5 G 2.5	14.8	180.5	387
00463273	4 G 4	16.0	218	448
00463283	5 G 4	17.2	262.9	531
0046330	3 G 6	16.4	240.5	489
00463313	4 G 6	17.9	304.7	591
00463323	5 G 6	19.4	370	706

High Temperature cables

Expanded ambient temperatures • Silicone cables (-50°C to +180°C)



ÖLFLEX® HEAT 180 EWKF C

Screened silicone cables with increased mechanical characteristics



Benefits

- Longer durability in harsh applications than conventional silicone cables
- Notch and tear-resistant outer sheath material reduces mechanical damage
- Copper braiding screens the cable against electromagnetic interference
- Flexibility simplifies installation where space is limited
- Due to the use of special additives in EWKF silicone, armoured cable versions will not be required

Application range

- Areas with high ambient temperatures and occasionally mechanical stress
- Typical fields of application
 - Steel, ceramic and iron works
 - Bakery equipment and industrial furnaces
 - Electric motor industry
 - Sauna/solarium construction
 - Thermal and heating elements
 - Lighting technology
 - Ventilator engineering
 - Air-conditioning technology
 - Galvanisation technology

Product features

- **EWKF:**
 - Initial tear propagation and notch resistance
- Halogen-free (IEC 60754-1), no corrosive gases (IEC 60754-2), flame-retardant (IEC 60332-1-2)
- Good hydrolysis and UV-resistance
- Resistant to a multitude of oils, alcohols, vegetable and animal fats and chemical substances
- Adequate ventilation must be ensured, since the mechanical properties of silicone cables decrease from +100°C in the absence of air

Product Make-up

- Fine-wire, tinned-copper conductor
- Cores twisted together
- Silicone-based core insulation
- Silicone-based inner sheath
- Tinned-copper screen braiding, interleaved plastic foil wrapping
- Outer sheath: silicone-based EWKF, notch-resistant, black

High Temperature cables

Expanded ambient temperatures • Silicone single cores (-50 °C to +180 °C)



ÖLFLEX® HEAT 180 SiF

Versatile single core cable with extended temperature range



info

- Flexible fine-wire copper conductor

Benefits

- Possesses insulating properties after combustion due to remaining SiO₂ ash on the conductor

Application range

- Areas with high ambient temperatures where conventional core insulation materials will embrittle after a short while

Typical fields of application

- Control cabinet manufacturing
- Appliances and apparatus engineering
- Electric motor industry
- Sauna/solarium construction
- Thermal and heating elements
- Lighting technology
- Ventilator engineering
- Air-conditioning technology
- Furnace construction
- Polymer processing
- Generator and transformer manufacturing

Product features

- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)
- Flame-retardant according IEC 60332-1-2
- Resistant to a multitude of oils, alcohols, vegetable and animal fats and chemical substances
- Adequate ventilation must be ensured, since the mechanical properties of silicone cables decrease from +100 °C in the absence of air

Product Make-up

- Fine-wire, tinned-copper conductor
- Silicone-based insulation

Technical data

Classification
ETIM 5.0 Class-ID: EC000993
ETIM 5.0 Class-Description:
Single core cable

Conductor stranding
Fine wire acc. to
VDE 0295, class 5 / IEC 60228 class 5
from 0.5 mm²

Minimum bending radius
Fixed installation: 6 x core diameter
One bend at end of core:
3 x cable diameter

Nominal voltage
U₀/U: 300/500 V

Test voltage
2000 V

Temperature range
-50 °C to +180 °C
(adequate ventilation required)
Short-term: +200 °C

Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	brown	black	grey	blue	green/yellow	orange	white
ÖLFLEX® HEAT 180 SiF										
0.25	1.9	2.4	5.4	0047003	0047001	0047106	0047002	0047000	0047009	0047105
0.5	2.1	4.8	9	0048003	0048001	0048106	0048002	0048000	0048009	0048105
0.75	2.4	7.2	12	0049003	0049001	0049106	0049002	0049000	0049009	0049105
1	2.5	9.6	15	0050003	0050001	0050106	0050002	0050000	0050009	0050105
1.5	2.8	14.4	20	0051003	0051001	0051106	0051002	0051000	0051009	0051105
2.5	3.4	24	32	0052003	0052001	0052106	0052002	0052000		0052105
4	4.2	38	50	0053003	0053001	0053106	0053002	0053000	0053009	0053105
6	5.0	58	73	0054003	0054001	0054106	0054002	0054000		0054105
10	6.6	96	118	0055003	0055001	0055106	0055002	0055000	0055009	0055105
16	7.4	154	177		0056001	0056106	0056002	0056000		0056105
25	9.2	240	277		0057001	0057106	0057002	0057000		
35	10.3	336	374		0058001		0058002	0058000		
50	12.2	480	530		0059001			0059000		
70	14.2	672	724		0060001		0060002			
95	16.6	912	982		0061001			0061000		0061105
120	18.0	1152	1219		0062001			0062000		
150	20.0	1440	1524		0063001					
185	22.5	1776	1915		0064001					

Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	green	yellow	violet	red	pink
ÖLFLEX® HEAT 180 SiF								
0.25	1.9	2.4	5.4	0047006	0047005	0047007	0047104	0047008
0.5	2.1	4.8	9	0048006	0048005	0048007	0048104	0048008
0.75	2.4	7.2	12	0049006	0049005	0049007	0049104	0049008
1	2.5	9.6	15	0050006	0050005	0050007	0050104	0050008
1.5	2.8	14.4	20	0051006	0051005	0051007	0051104	0051008
2.5	3.4	24	32	0052006	0052005	0052007	0052104	
4	4.2	38	50	0053006	0053005		0053104	
6	5.0	58	73	0054006	0054005		0054104	
10	6.6	96	118				0055104	
16	7.4	154	177				0056104	
25	9.2	240	277				0057104	
35	10.3	336	374				0058104	
50	12.2	480	530				0059104	



High Temperature cables

Expanded ambient temperatures • Glass fibre single cores (above +260 °C)



ÖLFLEX® HEAT 350 SC

Suitable for use in ambient temperature from -50 °C to +350 °C



info

- For use in dry conditions

Technical data

Classification
ETIM 5.0 Class-ID: EC000993
ETIM 5.0 Class-Description:
Single core cable

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

Minimum bending radius
Fixed installation: 5 x outer diameter

Nominal voltage
U₀/U: 300/500 V

Test voltage
1500 V

Temperature range
Fixed installation: -50 °C to +350 °C
(adequate ventilation required)

Benefits

- Low conductor-resistance due to the nickel-plated copper conductors

Application range

- Wide operating temperature range allows the product to be used in applications under Thermal Class C (> 180 °C).
- Blast furnaces and glassworks
- Chemical and power station construction
- Motor and furnace construction
- Lighting, apparatus and instrument industry

Product features

- Flame-retardant
- Halogen-free
- Only suitable for use in dry conditions
- ÖLFLEX® HEAT 650 SC and ÖLFLEX® HEAT 1565 SC are recommended if the peak temperature of the application may go beyond +350 °C

Product Make-up

- Fine-wire strand made of nickel-plated copper
- Core insulation: glass fibre covering and impregnated glass fibre braids
- Core insulation from 16 mm²: mica wrapping and impregnated glass fibre braid
- Colour of core insulation: white

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® HEAT 350 SC				
0091350	0.5	2.5	4.8	13
0091351	0.75	3.0	7.2	15
0091352	1	3.4	9.6	17
0091353	1.5	3.5	14.4	23
0091354	2.5	3.7	24	34
0091355	4	4.2	38.4	54
0091356	6	6.2	57.6	84
0091357	10	7.3	96	120
0091358	16	8.0	153.6	199
0091359	25	9.5	240	300
0091360	35	10.9	336	399
0091361	50	13.2	480	540



Various applications • Intrinsically safe circuits



ÖLFLEX® EB

Control cable for intrinsically safe circuits according to IEC 60079-14 / EN 60079-14 / VDE 0165-1



i

info

- For use within intrinsically safe circuits - type of protection 'i'

Benefits

- Space-saving installation due to small cable diameters

Application range

- For intrinsically safe circuits (type of protection i - intrinsic safety) according to IEC 60079-14:2013 / EN 60079-14:2014 / VDE 0165-1:2014, section 16.2.2

Product features

- Flame-retardant according IEC 60332-1-2

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
- PVC outer sheath, sky blue RAL 5015

Technical data

ETIM

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

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

Mutual capacitance
Core/core approx. 140 nF/km

L

Inductivity
approx. 0.52 mH/km

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

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

Nominal voltage
U₀/U: 300/500 V

Test voltage
Core/core: 3000 V

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

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® EB without protective conductor GN/YE				
0012420	2 X 0.75	5.4	14.7	50
0012421	3 X 0.75	5.7	22.1	60
0012430	4 X 0.75	6.2	29.4	81
0012422	5 X 0.75	6.7	36.8	88
0012423	7 X 0.75	7.3	51.5	115
0012425	12 X 0.75	9.9	88.2	185
0012427	18 X 0.75	11.7	132.3	282
0012429	25 X 0.75	13.8	183.8	393
0012440	2 X 1.0	5.7	19.7	57
0012441	3 X 1.0	6.0	29.6	73
0012443	5 X 1.0	7.1	49.4	105
0012444	7 X 1.0	8.0	69.1	138
0012446	12 X 1.0	10.5	118.4	231
0012448	18 X 1.0	12.7	177.7	331
0012401	2 X 1.5	6.3	29	80
0012402	3 X 1.5	6.7	43	105
0012403	4 X 1.5	7.2	58	125
0012404	5 X 1.5	8.1	72	139
ÖLFLEX® EB with protective conductor GN/YE				
0012501	3 G 1.5	6.7	43	105
0012502	4 G 1.5	7.2	58	125
0012503	5 G 1.5	8.1	72	139
0012504	7 G 1.5	8.9	101	180
0012505	12 G 1.5	12.0	173	339
0012506	18 G 1.5	14.4	259	513
0012507	25 G 1.5	16.9	360	698

Various applications • Intrinsically safe circuits



ÖLFLEX® EB CY

Control cable for intrinsically safe circuits according to IEC 60079-14 / EN 60079-14 / VDE 0165-1



i

info

- For use within intrinsically safe circuits - type of protection 'i'
- EMC-compliant

Technical data

ETIM

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

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

Mutual capacitance
Core/core approx. 160 nF/km
Core/screen approx. 250 nF/km

L

Inductivity
approx. 0.52 mH/km

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

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

Nominal voltage
U₀/U: 300/500 V

Test voltage
Core/core: 3000 V
Core/screen: 2000 V

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

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® EB CY screened; without inner sheath				
0012640	2 X 0.75	6.2	43	56
0012641	3 X 0.75	6.5	52	70
0012642	4 X 0.75	7.0	61	95
0012643	5 X 0.75	7.7	72	108
0012644	7 X 0.75	8.3	89	168
0012645	12 X 0.75	10.9	138	216
0012646	18 X 0.75	12.7	211	315
0012647	25 X 0.75	14.8	280	435
0012650	2 X 1.0	6.5	51	84
0012651	3 X 1.0	6.8	62	110
0012652	5 X 1.0	8.1	88	156
0012653	7 X 1.0	8.8	112	192
0012654	12 X 1.0	11.5	185	285
0012655	18 X 1.0	13.9	268	395
0012656	25 X 1.0	15.9	354	656
0012660	2 X 1.5	7.1	65	87
0012661	3 X 1.5	7.5	82	112
0012662	5 X 1.5	8.9	119	148
0012663	7 X 1.5	9.9	154	193
0012664	12 X 1.5	13.0	268	365
0012666	25 X 1.5	17.9	530	734

Halogen Free cables

Various applications • Halogen-free • DNV Certified Marine Cable



ÖLFLEX® CLASSIC 110 H

Halogen-free control cable, oil resistant and very flexible



Benefits

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

Application range

- Public buildings like airports or railway stations
- Plant engineering, Industrial machinery Heating and air-conditioning systems Stage applications
- Particularly where human and animal life as well as valuable property are exposed to high risk of fire hazards
- Intended for use under the European Construction Product Regulation (CPR)
- Note: for the use of AWM (Appliance Wiring Material) cables in industrial machinery (USA) according to NFPA 79 Ed. 2015

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-22 and 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

- UL AWM style 21089
- Based on EN 50525-3-11
- Based on EN 50525-2-51
- Germanischer Lloyd (GL) certificate no. 11 119-14 HH
- DNV Certified Marine Cable

Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Cores twisted in layers
- Outer sheath made of special halogen-free compound, grey (RAL 7001)



info

- New: Extended application range due to GL certification
- High flexibility and oil-resistance
- VDE-certified

Technical data

	Classification ETIM 5.0 Class-ID: EC000104 ETIM 5.0 Class-Description: Control cable
	Core identification code Black with white numbers acc. to VDE 0293-1
	Conductor stranding Fine wire according to VDE 0295, class 5/IEC 60228 class 5
	Minimum bending radius Occasional flexing: 10 x outer diameter Fixed installation: 4 x outer diameter
	Nominal voltage U ₀ /U: 300/500 V UL: 600 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 (UL: +75°C) Fixed installation: -40°C to +80°C (UL: +75°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 H U ₀ /U: 300/500 V				
10019900	2 X 0.5	5.1	9.6	41
10019901	3 G 0.5	5.4	14.4	49
10019902	3 X 0.5	5.4	14.4	49
10019903	4 G 0.5	5.8	19.2	58
10019904	4 X 0.5	5.8	19.2	58
10019905	5 G 0.5	6.3	24	69
10019906	7 G 0.5	6.9	33.6	87
10019907	12 G 0.5	9.1	57.6	141
10019910	2 X 0.75	5.5	14.4	51
10019911	3 G 0.75	5.8	21.6	61
10019912	3 X 0.75	5.8	21.6	61
10019913	4 G 0.75	6.3	28.8	73
10019914	4 X 0.75	6.3	28.8	73
10019915	5 G 0.75	6.9	36	87
10019916	5 X 0.75	6.9	36	87
10019917	7 G 0.75	7.5	50.4	111
10019918	7 X 0.75	7.5	50.4	111
10019919	9 G 0.75	9.6	64.8	150
10019920	12 G 0.75	10.1	86.4	186
10019921	18 G 0.75	12.0	129.6	265
10019922	25 G 0.75	14.1	180	365
10019960	2 X 1.0	5.8	19.2	59
10019961	3 G 1.0	6.1	28.8	72
10019962	3 X 1.0	6.1	28.8	72
10019963	4 G 1.0	6.6	38.4	87
10019964	4 X 1.0	6.6	38.4	87
10019965	5 G 1.0	7.3	48	104
10019967	7 G 1.0	8.1	67.2	138
10019968	8 G 1.0	9.7	76.8	164
10019969	12 G 1.0	10.7	115.2	225
10019970	14 G 1.0	11.4	134.4	261
10019971	18 G 1.0	12.9	172.8	328
10019972	25 G 1.0	15.0	240	445
10019973	41 G 1.0	19.2	393.6	719

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
10019930	2 X 1.5	6.4	28.8	76
10019931	3 G 1.5	6.8	43.2	94
10019980	3 X 1.5	6.8	43.2	94
10019932	4 G 1.5	7.4	57.6	115
10019933	5 G 1.5	8.3	72	142
10019934	7 G 1.5	9.0	100.8	184
10019981	8 G 1.5	10.8	115.2	218
10019982	9 G 1.5	11.6	129.6	245
10019935	12 G 1.5	12.2	172.8	308
10019936	14 G 1.5	13.0	201.6	357
10019937	18 G 1.5	14.6	259.2	449
10019938	25 G 1.5	17.2	360	617
10019927	34 G 1.5	19.8	489.6	821
10019944	2 X 2.5	7.6	48	113
10019945	3 G 2.5	8.3	72	146
10019946	4 G 2.5	9.0	96	180
10019947	5 G 2.5	10.1	120	221
10019948	7 G 2.5	11.2	168	295
10019949	12 G 2.5	15.1	288	491
10019950	4 G 4	10.8	153.6	268
10019951	5 G 4	12.1	192	328
10019952	7 G 4	13.4	268.8	438
10019953	4 G 6	13.0	230.4	391
10019954	5 G 6	14.5	288	478
10019975	7 G 6	16.0	403.2	638
10019851	4 G 10	16.2	384	635
10019852	5 G 10	18.1	480	775
10019849	4 G 16	18.8	614.4	930
10019853	5 G 16	21.2	768	1147
10019854	4 G 25	23.5	960	1442
10019855	5 G 25	26.4	1200	1773
10019856	4 G 35	26.6	1344	1917



info

- New: Extended application range due to GL certification
- High flexibility and oil-resistance
- Items with higher cross-sections on request

Technical data

	Classification ETIM 5.0 Class-ID: EC000104 ETIM 5.0 Class-Description: Control cable
	Core identification code Black with white numbers acc. to VDE 0293-1
	Conductor stranding Fine wire according to VDE 0295, class 5/IEC 60228 class 5
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 6 x outer diameter
	Nominal voltage U ₀ /U: 300/500 V UL: 600 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 (UL: +75°C) Fixed installation: -40°C to +80°C (UL: +75°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 110 CH U ₀ /U: 300/500 V				
10035030	2 X 0.5	7.1	29.1	85
10035031	3 G 0.5	7.4	35.1	95
10035032	3 X 0.5	7.4	35.1	95
10035033	4 G 0.5	8.0	41.4	111
10035034	4 X 0.5	8.0	41.4	111
10035035	5 G 0.5	8.6	48	126
10035036	7 G 0.5	9.1	59.9	148
10035037	12 G 0.5	11.5	91.4	226
10035040	2 X 0.75	7.7	35.4	101
10035041	3 G 0.75	8.0	43.8	114
10035042	3 X 0.75	8.0	43.8	114
10035043	4 G 0.75	8.5	52.8	130
10035044	4 X 0.75	8.5	52.8	130
10035045	5 G 0.75	9.3	62.3	153
10035046	5 X 0.75	9.3	62.3	153
10035047	7 G 0.75	9.9	79.5	183
10035048	7 X 0.75	9.9	79.5	183
10035050	12 G 0.75	12.5	123.2	280
10035051	18 G 0.75	14.8	188.6	399
10035052	25 G 0.75	16.9	247.5	522
10035055	2 X 1.0	8.0	41.4	112
10035056	3 G 1.0	8.4	52.1	127
10035057	3 X 1.0	8.4	52.1	127
10035058	4 G 1.0	8.9	73.5	157
10035059	4 X 1.0	8.9	73.5	157
10035060	5 G 1.0	9.7	83.2	171
10035061	7 G 1.0	10.3	97.2	210
10035062	12 G 1.0	13.6	168.7	347

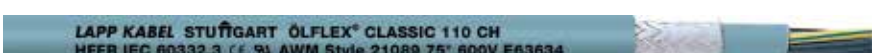
Halogen Free cables

Various applications • Halogen-free



ÖLFLEX® CLASSIC 110 CH

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



Benefits

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

Application range

- Public buildings like airports or railway stations
- 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
- Intended for use under the European Construction Product Regulation (CPR)
- Note: for the use of AWM (Appliance Wiring Material) cables in industrial machinery (USA) according to NFPA 79 Ed. 2015:

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-22 and 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

- UL AWM style 21089
- Based on EN 50525-3-11
- Based on EN 50525-2-51
- Germanischer Lloyd (GL) certificate no. 11 119-14 HH

Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Cores twisted in layers
- Halogen-free inner sheath, grey
- Tinned-copper braiding
- Outer sheath made of special halogen-free compound, grey (RAL 7001)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
10035063	18 G 1.0	15.7	235.4	474
10035064	25 G 1.0	17.8	312	611
10035065	41 G 1.0	22.4	508	969
10035067	2 X 1.5	8.6	53.2	134
10035068	3 G 1.5	9.0	69.1	155
10035069	3 X 1.5	9.0	69.1	155
10035070	4 G 1.5	9.8	85.8	186
10035071	5 G 1.5	10.5	102.8	215
10035072	7 G 1.5	11.4	134.2	269
10035073	12 G 1.5	15.0	232.8	445
10035074	18 G 1.5	17.4	327.8	610
10035075	25 G 1.5	20.4	463.2	843
10035089	3 G 2.5	10.5	102.8	220
10035090	4 G 2.5	11.4	129.4	265
10035091	5 G 2.5	12.7	157.5	322
10035092	7 G 2.5	14.0	223	422
10035093	12 G 2.5	17.9	360.5	659
10035094	4 G 4	13.6	207.6	390
10035095	5 G 4	14.9	251.5	463
10035096	7 G 4	16.2	333.9	588
10035097	4 G 6	15.8	294.8	516
10035098	5 G 6	17.3	356.1	616
10035099	7 G 6	18.8	479.3	792
10035380	4 G 10	19.1	461.1	789
10035381	5 G 10	21.4	586.6	998
10035382	4 G 16	22.3	727.6	1154
10035383	5 G 16	24.5	888.7	1389
10035384	4 G 25	27.0	1123.9	1807
10035386	4 G 35	30.4	1529.2	2321



Halogen Free cables

Various applications • Halogen-free



ÖLFLEX® CLASSIC 128 H BK 0.6/1 kV

0.6/1kVAC, Halogen-free, Flexible, IEC 60332-3, IEC 61034-2, UV/ ozone resistance, UL AWM 1000V



LAPP KABEL STUTTGART ÖLFLEX® CLASSIC 128 H BK 0,6/1kV
HFFR IEC 60332-3 CE

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



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

Technical data

	Core identification code Up to 5 cores: colour-coded according to VDE 0293-308 From 6 cores: black with white numbers
	Conductor stranding Fine wire according to VDE 0295, class 5/IEC 60228 class 5
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 4 x outer diameter
	Nominal voltage U ₀ /U: 600/1000 V UL: 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



ÖLFLEX® CLASSIC 128 CH BK 0.6/1 kV

0.6/1kVAC, Halogen-free, Flexible, IEC 60332-3, IEC 61034-2, UV/ ozone resistance, UL AWM 1000V

LAPP KABEL STUTTGART ÖLFLEX® CLASSIC 128 CH BK 0,6/1kV
HFFR IEC 60332-3 CE



info

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

Technical data

	Classification ETIM 5.0/6.0 Class-ID: EC000057 ETIM 5.0/6.0 Class-Description: Low voltage power cable
	Core identification code Up to 5 cores: colour-coded according to VDE 0293-308 From 6 cores: black with white numbers
	Conductor stranding Fine wire according to VDE 0295, class 5/IEC 60228 class 5
	Minimum bending radius Occasional flexing: 20 x outer diameter Fixed installation: 6 x outer diameter
	Nominal voltage U ₀ /U: 600/1000 V
	Test voltage Core/core: 4000 V Core/screen: 2000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Temperature range Occasional flexing: -5°C to +70°C Fixed installation: -40°C to +80°C

Benefits

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

Application range

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

Product features

- Flame-retardant according to IEC 60332-1-2 (flame spread on a single cable)
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)
- UV and weather-resistant according to ISO 4892-2
- Ozone-resistant according to EN 50396

Norm references / Approvals

- Based on EN 50525-3-11
- Product Make-up
- Fine-wire strand made of bare copper wires
- Core insulation: Halogen-free
- Halogen-free plastic foil wrapping
- Tinned-copper braiding
- Outer sheath made of special halogen-free compound, black

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 128 H BK 0.6/1 kV				
1123520	2 X 1.0	7.4	19.2	76
1123521	3 G 1.0	7.8	28.8	101
1123522	4 G 1.0	8.4	38.4	120
1123523	5 G 1.0	9.2	48	143
1123524	7 G 1.0	9.9	67.2	179
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	72	253
1123533	12 G 1.5	15.1	172.8	396

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
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 4.0	11.4	115.2	260
1123545	4 G 4.0	12.5	153.6	322
1123546	5 G 4.0	13.7	192	387
1123548	4 G 6.0	13.9	230.4	431
1123549	5 G 6.0	15.8	288	533

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC 128 CH BK 0.6/1 kV				
1123557	2 X 1.0	8.2	49.6	107
1123558	3 G 1.0	8.6	62	129
1123559	4 G 1.0	9.2	75	153
1123560	5 G 1.0	10.0	90	181
1123565	2 x 1.5	9.2	65.4	135
1123566	3 G 1.5	9.7	81.8	164
1123567	4 G 1.5	10.4	101	199
1123568	5 G 1.5	11.3	120.4	236
1123569	7 G 1.5	12.2	154.3	292
1123570	12 G 1.5	16.3	271.1	498

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1123574	3 G 2.5	10.9	117.2	218
1123575	4 G 2.5	11.8	147.1	268
1123576	5 G 2.5	12.9	177.3	322
1123577	7 G 2.5	14.4	231.6	411
1123582	4 G 4.0	13.5	212	357
1123583	5 G 4.0	14.9	255.8	434
1123584	3 G 6.0	13.7	233.6	372
1123585	4 G 6.0	15.1	295.1	472
1123586	5 G 6.0	16.8	390.1	611

Halogen Free cables

Low frequency data transmission cables • Halogen-free



UNITRONIC® LiHH

Halogen-free data transmission cable with colour code acc. to DIN 47100



Benefits

- Halogen-free: to protect human life and valuable assets in the event of a fire, through low smoke density and low amount of corrosive gases
- Low capacitance due to polyolefin-based insulation
- Small outer diameters despite a high number of cores

Application range

- Suitable for areas with a high density of people as well as high-value property that must be protected in the event of a fire
- For use within public buildings, transport systems and industrial plants
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- 7-wire stranded conductor can be used for Maxi TERMI-POINT® wiring (for this product the 0,34mm² version only)
- Dry or damp rooms

Product features

- Flame-retardant according IEC 60332-1-2
- Low smoke zero halogen (LSZH)
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
- Corrosiveness of combustion gases according to EN 50267-2-3 (degree of acidity)
- Low smoke density according to IEC 61034-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of special halogen-free compound
- Outer sheath made of special halogen-free compound
- Outer sheath colour: pebble grey (RAL 7032)



info

- For use within public buildings and industrial plants

Technical data

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

Core identification code
DIN 47100 without colour repetition

Mutual capacitance
Approx. 80 nF/km

Peak operating voltage
(not for power applications) 250 V

Inductivity
approx. 0.65 mH/km

Conductor stranding
Stranded, fine-wire
0.34 mm²: 7-wire

Minimum bending radius
Occasional flexing: 10 x outer diameter
Fixed installation: 6 x outer diameter

Test voltage
1200 V

Temperature range
Occasional flexing: -5°C to +70°C
Fixed installation: -30°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiHH				
0037104	6 x 0.14	4.4	8.1	25
0037120	2 x 0.25	4	4.8	22
0037121	3 x 0.25	4.2	7.2	25
0037122	4 x 0.25	4.5	9.6	28
0037124	6 x 0.25	5.3	14.4	39
0037125	7 x 0.25	5.3	16.8	42
0037126	8 x 0.25	6.4	19.2	50
0037128	12 x 0.25	7.2	28.8	67
0037140	2 x 0.34	4.4	6.5	28
0037141	3 x 0.34	4.6	9.8	30
0037142	4 x 0.34	5	13.1	40
0037143	5 x 0.34	5.7	16.3	44
0037147	12 x 0.34	8	39.2	97

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0037150	2 x 0.5	4.9	9.6	31
0037151	3 x 0.5	5.2	14.4	37
0037152	4 x 0.5	5.8	19.2	45
0037153	5 x 0.5	6.3	24	58
0037154	7 x 0.5	7	33.6	72
0037160	2 x 0.75	5.3	14.4	41
0037162	4 x 0.75	6.3	28.8	60
0037165	12 x 0.75	10.4	86.4	165
0037171	3 x 1	6.1	28.8	57
0037172	4 x 1	6.6	38.4	67



Halogen Free cables

Low frequency data transmission cables • Halogen-free



UNITRONIC® LiHCH

Screened halogen-free data transmission cable with colour code acc. to DIN 47100



info

- For use within public buildings and industrial plants

Technical data

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

Core identification code
DIN 47100 without colour repetition

Mutual capacitance
C/C approx. 80 nF/km
C/S approx. 120 nF/km

Peak operating voltage
(not for power applications) 250 V

Inductivity
approx. 0.65 mH/km

Conductor stranding
Stranded, fine-wire
0.34 mm²: 7-wire

Minimum bending radius
Occasional flexing: 10 x outer diameter
Fixed installation: 6 x outer diameter

Test voltage
1200 V

Temperature range
Occasional flexing: -5°C to +70°C
Fixed installation: -30°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiHCH				
0037302	2 x 0.14	4.1	12	22
0037304	4 x 0.14	4.5	15.9	29
0037308	8 x 0.14	6	26	41
0037312	12 x 0.14	6.5	30.4	78
0037325	25 x 0.14	8.7	63	149
0037402	2 x 0.25	4.7	15	25
0037403	3 x 0.25	4.9	18	30
0037404	4 x 0.25	5.2	22	35
0037406	6 x 0.25	6.2	30	49
0037407	7 x 0.25	6.2	32	52
0037408	8 x 0.25	7.3	35	58
0037410	10 x 0.25	7.7	42	81
0037425	25 x 0.25	10.9	114	172
0037502	2 x 0.34	5.1	17	30
0037503	3 x 0.34	5.3	21	35
0037504	4 x 0.34	5.9	25	42
0037507	7 x 0.34	7	42	73
0037508	8 x 0.34	8	45	84
0037510	10 x 0.34	8.5	63	101
0037516	16 x 0.34	9.6	94	160
0037525	25 x 0.34	12.1	144	259

Benefits

- Halogen-free: to protect human life and valuable assets in the event of a fire, through low smoke density and low amount of corrosive gases
- Low capacitance due to polyolefin-based insulation
- Overall braid minimises electrical interference

Application range

- Suitable for areas with a high density of people as well as high-value property that must be protected in the event of a fire
- For use within public buildings, transport systems and industrial plants
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- For use in computer systems, instrumentation systems, office equipment, balances -wherever screened, halogen-free, small-diameter cables are needed.
- 7-wire stranded conductor can be used for Maxi TERMI-POINT® wiring (for this product the 0,34mm² version only)

Product features

- Flame-retardant according IEC 60332-1-2
- Low smoke zero halogen (LSZH)
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
- Corrosiveness of combustion gases according to EN 50267-2-3 (degree of acidity)
- Low smoke density according to IEC 61034-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of special halogen-free compound
- Tinned-copper braiding
- Outer sheath made of special halogen-free compound
- Outer sheath colour: pebble grey (RAL 7032)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0037602	2 x 0.5	5.8	29	38
0037603	3 x 0.5	6.1	35	47
0037604	4 x 0.5	6.5	45	67
0037605	5 x 0.5	7.2	50	76
0037606	6 x 0.5	7.8	59	84
0037607	7 x 0.5	7.8	68	91
0037608	8 x 0.5	8.9	75	135
0037610	10 x 0.5	9.5	93	131
0037612	12 x 0.5	9.8	99	177
0037618	18 x 0.5	11.7	134	239
0037702	2 x 0.75	6.2	35	45
0037703	3 x 0.75	6.5	46	69
0037704	4 x 0.75	7.2	56	80
0037802	2 x 1	6.5	43	72
0037803	3 x 1	7	56	90
0037804	4 x 1	7.5	68	109
0037807	7 x 1	8.8	118	171
0037902	2 x 1.5	7.7	58	90
0037903	3 x 1.5	8.1	74	115

Halogen Free cables

Low frequency data transmission cables • Halogen-free



UNITRONIC® LiHCH (TP)

Screened halogen-free data transmission cable with colour code acc. to DIN 47100 and twisted pairs



Benefits

- Halogen-free: to protect human life and valuable assets in the event of a fire, through low smoke density and low amount of corrosive gases
- Low capacitance due to polyolefin-based insulation
- Overall braid minimises electrical interference
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- Suitable for areas with a high density of people as well as high-value property that must be protected in the event of a fire
- For use within public buildings, transport systems and industrial plants
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- For use in computer systems, instrumentation systems, office equipment, balances -wherever screened, halogen-free, small-diameter cables are needed.

Product features

- Flame-retardant according IEC 60332-1-2
- Low smoke zero halogen (LSZH)
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
- Corrosiveness of combustion gases according to EN 50267-2-3 (degree of acidity)
- Low smoke density according to IEC 61034-2

Norm references / Approvals

- Based on VDE 0812
- Product Make-up
- Fine-wire strand made of bare copper wires
- Core insulation made of special halogen-free compound
- TP structure
- Tinned-copper braiding
- Outer sheath made of special halogen-free compound
- Outer sheath colour: pebble grey (RAL 7032)



info

- TP = twisted pair

Technical data

	Classification ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Core identification code DIN 47100 without colour repetition
	Mutual capacitance C/C approx. 80 nF/km C/S approx. 120 nF/km
	Peak operating voltage (not for power applications) 250 V
	Coupling At 1 kHz: approx. 300 pF/100 m
	Inductivity approx. 0.65 mH/km
	Conductor stranding Fine copper wire strands
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 6 x outer diameter
	Test voltage 1200 V
	Temperature range Occasional flexing: -5 °C to +70 °C Fixed installation: -30 °C to +80 °C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiHCH (TP)				
0038302	2 x 2 x 0.14	5.9	18.5	39
0038303	3 x 2 x 0.14	6	23	48
0038304	4 x 2 x 0.14	6.4	26.6	54
0038308	8 x 2 x 0.14	8.4	53.7	97
0038312	12 x 2 x 0.14	9.1	66	142
0038316	16 x 2 x 0.14	10.4	79	154
0038325	25 x 2 x 0.14	12.7	113	238
0038402	2 x 2 x 0.25	6.5	28	54
0038403	3 x 2 x 0.25	7.3	39.6	66
0038404	4 x 2 x 0.25	7.8	44.9	81
0038406	6 x 2 x 0.25	8.7	69.5	115
0038408	8 x 2 x 0.25	10.5	76.9	130
0038412	12 x 2 x 0.25	11.5	120	190
0038416	16 x 2 x 0.25	12.7	146.5	238

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0038602	2 x 2 x 0.5	8.8	48.1	93
0038603	3 x 2 x 0.5	8.9	73.7	129
0038604	4 x 2 x 0.5	9.6	82	146
0038606	6 x 2 x 0.5	11.3	110	198
0038608	8 x 2 x 0.5	13.3	139	259
0038612	12 x 2 x 0.5	15.1	198.3	354
0038616	16 x 2 x 0.5	16.7	240	459
0038702	2 x 2 x 0.75	9.5	58	106
0038704	4 x 2 x 0.75	10.9	108	179
0038708	8 x 2 x 0.75	14.9	180	305
0038802	2 x 2 x 1	10.5	84	142
0038803	3 x 2 x 1	10.6	96	173
0038804	4 x 2 x 1	11.5	121	212



info

- For cable trolley application
- Space-saving installation
- Also suitable for power chains and lift applications

Technical data

	Classification ETIM 5.0 Class-ID: EC000825 ETIM 5.0 Class-Description: Flat cable
	Core identification code Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9 From 6 cores: black with white numbers
	Conductor stranding U0/U 300/500 V versions, Fine wire according to VDE 0295 Class 5 or IEC 60228 Cl. 5 U0/U 450/750 V versions, extra-Fine wire according to VDE 0295 Class 6 or IEC 60228 Cl. 6 (from nominal conductor cross section 10 mm²: finely stranded/ class 5)
	Minimum bending radius Flexible use: 10 x cable thickness
	Nominal voltage Up to 1.0 mm²: U ₀ /U: 300/500 V From 1.5 mm²: U ₀ /U: 450/750 V
	Test voltage 3000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Temperature range Flexible use: 0 °C to +70 °C (up to 1.0 mm²) -15 °C to +70 °C (as from 1.5 mm²)

Article number	Number of cores and mm² per conductor	Outer dimensions, width x height (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® LIFT F				
Nominal voltage U₀/U: 300/500 V, temperature range: 0 °C to +70 °C				
0042020	12 G 1.0	36.0 x 4.7	115	392
0042021	16 G 1.0	48.5 x 4.7	153.6	521
0042022	20 G 1.0	59.0 x 4.7	192	645
0042023	24 G 1.0	71.5 x 4.7	230	772
Nominal voltage U₀/U: 450/750 V, temperature range: -15 °C to +70 °C				
00420013	4 G 1.5	15.5 x 5.2	57.6	132
00420023	5 G 1.5	19.7 x 5.2	72	170
0042003	7 G 1.5	27.0 x 5.2	100.8	236
0042004	8 G 1.5	29.0 x 5.2	115	266
0042005	10 G 1.5	36.5 x 5.2	144	333
0042006	12 G 1.5	42.0 x 5.2	172.8	422
00420073	4 G 2.5	19.0 x 5.9	96	206
00420083	5 G 2.5	24.0 x 5.9	120	257
0042009	7 G 2.5	32.5 x 5.9	168	345
0042010	8 G 2.5	35.0 x 5.9	192	390
0042050	12 G 2.5	52.5 x 5.9	288	580
00420113	4 G 4	21.0 x 6.8	153.6	343
0042012	7 G 4	38.0 x 6.8	268.8	589
00420133	4 G 6	24.0 x 7.3	230	425
00420143	4 G 10	30.5 x 9.5	384	709
00420153	4 G 16	35.0 x 10.8	614	1015
00420163	4 G 25	42.0 x 13.0	960	1366

Crane cables

Conveyor technology • Flat cables

ÖLFLEX® LIFT F

Flexible at cold temperatures, PVC flat cables



Benefits

- Flat cables need less space than round cables
- Smaller bending radii is possible
- Application range
- For hoisting equipment and conveyor systems
- Indoor cranes and high-rack facilities
- As supply line for moving machine parts
- According to VDE definition, this can also be used as a lift control cable with up to 35 m suspension length, and a maximum speed of travel at 1.6 m/s

Product features

- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on EN 50214 / VDE 0283-2 (H05VVH6-F or H07VVH6-F)
- Meets the requirements of the harmonised PVC flat cable H07VVH6-F

Product Make-up

- Strands of bare copper wires
- Core insulation: Based on PVC
- Outer sheath: Based on PVC



ÖLFLEX® CRANE F
Weather-resistant flat rubber cables



Benefits

- Weather-resistant for harsh environmental conditions
- Flat cables need less space than round cables
- Smaller bending radii is possible

Application range

- In crane systems on building sites and shipyards for fixed installation, or for flexible use in cable trolley systems
- Sewage treatment plants, steelworks and high rack facilities

Product features

- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on VDE 0250 (NGFLGÖU)

Product Make-up

- Strands of bare or tinned-copper wires
- Core insulation: rubber compound
- Outer sheath: special rubber compound

info

- For outdoor cable trolley application
- Space-saving installation
- Also suitable for power chains and lift applications

Technical data

	Classification ETIM 5.0 Class-ID: EC000825 ETIM 5.0 Class-Description: Flat cable
	Core identification code Up to 5 cores: colour-coded according to VDE 0293-308 From 6 cores: black with white numbers
	Conductor stranding Copper conductor according to VDE 0295/IEC 60228 up to 25 mm²: extra-fine wire, class 6 from 35 mm²: fine wire, class 5
	Minimum bending radius Flexible use: 10 x cable thickness Fixed installation: 4 x cable thickness
	Nominal voltage U ₀ /U: 300/500 V
	Test voltage 3000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Temperature range Flexible use: -25°C to +90°C Fixed installation: -40°C to +90°C

Article number	Number of cores and mm² per conductor	Outer dimensions, width x height (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE F				
0041041	4 G 1.5	17.5 x 6.2	57.6	200
0041042	5 G 1.5	21.5 x 6.2	72	240
0041043	7 G 1.5	29.0 x 6.2	100.8	360
0041044	8 G 1.5	31.5 x 6.2	115	370
0041045	10 G 1.5	40.0 x 6.5	144	520
0041046	12 G 1.5	47.0 x 6.5	172.8	620
0041047	4 G 2.5	21.0 x 7.5	96	280
0041048	5 G 2.5	27.0 x 7.5	120	400
0041049	7 G 2.5	35.0 x 7.5	168	520
0041050	8 G 2.5	39.0 x 7.5	192	550
0041051	12 G 2.5	56.0 x 8.0	288	800

Article number	Number of cores and mm² per conductor	Outer dimensions, width x height (mm)	Copper index (kg/km)	Weight (kg/km)
0041052	4 G 4	26.0 x 9.0	153.6	410
0041053	7 G 4	42.0 x 9.0	268.8	700
0041054	4 G 6	29.0 x 9.5	230	600
0041055	5 G 6	35.0 x 9.5	288	650
0041056	7 G 6	42.0 x 9.5	403	850
0041057	4 G 10	33.0 x 11.0	384	800
0041059	4 G 16	38.0 x 13.0	614	1150
0041060	4 G 25	49.5 x 15.0	960	1700
0041061	4 G 35	55.0 x 17.0	1344	2360
0041062	4 G 50	63.0 x 19.0	1920	3000
0041063	4 G 70	71.0 x 22.0	2688	4000



Treotham Automation has a full range of Cable Glands please see page 395.



info

- For outdoor cable trolley application
- EMC-compliant

Technical data

	Classification ETIM 5.0 Class-ID: EC000825 ETIM 5.0 Class-Description: Flat cable
	Core identification code Up to 5 cores: colour-coded according to VDE 0293-308 From 6 cores: black with white numbers
	Conductor stranding Copper conductor according to VDE 0295/IEC 60228 up to 25 mm²: extra-fine wire, class 6 from 35 mm²: fine wire, class 5
	Minimum bending radius Flexible use: 10 x cable thickness Fixed installation: 4 x cable thickness
	Nominal voltage U ₀ /U: 300/500 V
	Test voltage 2000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Temperature range Flexible use: -25°C to +90°C Fixed installation: -40°C to +90°C

Article number	Number of cores and mm² per conductor	Outer dimensions, width x height (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE CF				
0041075	4 G 1.5	18.5 x 6.5	79	220
0041076	8 G 1.5	36.0 x 7.5	155	470
0041077	12 G 1.5	54.5 x 8.5	238	745
0041078	4 G 2.5	22.5 x 7.5	141	320
0041079	12 G 2.5	69.5 x 9.5	499	1180
0041080	4 G 4	29.0 x 10.5	219	505
0041081	4 G 6	31.0 x 10.5	302	605
0041082	4 G 10	36.0 x 11.5	472	840
0041083	4 G 16	41.5 x 13.5	687	1180
0041084	4 G 25	47.0 x 15.0	1114	1605
0041085	4 G 35	55.0 x 17.0	1482	2520
0041086	4 G 50	66.0 x 20.5	2238	3000



ÖLFLEX® CRANE CF
Weather-resistant flat rubber cables with copper screening



Benefits

- Weather-resistant for harsh environmental conditions
- Flat cables need less space than round cables
- Smaller bending radii is possible
- Copper braiding screens the cable against electromagnetic interference

Application range

- In crane systems on building sites and shipyards for fixed installation, or for flexible use in cable trolley systems
- Sewage treatment plants, steelworks and high rack facilities

Product features

- Flame-retardant according IEC 60332-1-2
- Norm references / Approvals
- Based on VDE 0250 (NGFLGÖU)

Product Make-up

- Strands of bare or tinned-copper wires
- Core insulation: rubber compound
- Individual core screening consist of
 - plastic foil wrapping
 - tin-plated copper braiding
 - plastic foil wrapping
- Outer sheath: special rubber compound

Conveyor technology • For lifts



ÖLFLEX® LIFT

Flexible at cold temperatures, PVC lift cables with supporting element



Benefits

- Special cable design for a long service life
- Attractive price and maximum operational efficiency
- Very flexible due to extra-fine wire conductor design

Application range

- Lift cable that ensures the electrical integrity in various areas of lift construction
- Suitable for use in outdoor lifts

Product features

- Flame-retardant according IEC 60332-1-2
- Good weather-resistance

Norm references / Approvals

- VDE registration under VDE reg. no. 7039

Product Make-up

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



info

- High operating efficiency
- Suspension length up to 90 m
- VDE-tested and registered

Technical data



Classification

ETIM 5.0 Class-ID: EC000826
ETIM 5.0 Class-Description:
Elevator cable



Core identification code

Black with white numbers acc. to VDE 0293-1



Suspension length

refer to article table



Conductor stranding

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



Minimum bending radius

Flexible use: 20 x 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

Flexible use: -15°C to +70°C

Article number	Number of cores and mm ² per conductor	Outer diameter (mm)	Max. suspension length (m)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® LIFT					
0027020	7 G 1.0	11.5	80	67.2	178
0027022	12 G 1.0	16.3	80	115.2	332
0027024	18 G 1.0	16.4	70	172.8	405
0027027	24 G 1.0	19.4	60	230.4	533
0027029	36 G 1.0	25.1	90	345.6	887



Conveyor technology • For push-button control units



ÖLFLEX® CRANE 2S

Flexible at cold temperatures, PVC cables with external steel supporting elements



info

- Double tensile strength safety
- Teach pad cable

Technical data



Classification

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



Core identification code

Black with white numbers acc. to VDE 0293-1



Conductor stranding

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



Minimum bending radius

Flexible use: 20 x outer diameter



Nominal voltage

U₀/U: 300/500 V



Test voltage

3000 V



Protective conductor

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



Temperature range

Flexible use: -15°C to +70°C

Benefits

- Two steel support elements that are integrated into the outer sheath on opposite sides absorb the tensile forces during operation
- Tensile strength of 2100 N per supporting element

Application range

- For connecting movable control panels and consoles
- As a self-supporting shaft cable; in high rack systems
- Suitable for outdoor applications
- Do not use for lift applications!

Product features

- Flame-retardant according IEC 60332-1-2
- Flexible at low temperatures

Norm references / Approvals

- Based on VDE 0250
- Product Make-up
- Strands of bare copper wires
- Special PVC-based core insulation
- Special textile wrapping to improve sliding movement between the sheath and cores
- Special PVC-based outer sheath
- Opposing, integrated steel supporting elements

Article number	Number of cores and mm ² per conductor	Cable Ø (mm)	Distance between strain wires (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE 2S					
2027503	8 G 1.5	14.7	20	115	373
2027504	12 G 1.5	16.2	21	172.8	439
2027505	20 G 1.5	20.1	25	288	674



ÖLFLEX® CRANE NSHTÖU

Reelable cables for low and medium mechanical stress



Benefits

- Can be used as hawser, drum and towing cable as well as for energy supply chains
- Integrated supporting braid prevents undesirable cable twists, and the formation of so-called corkscrew effects

Application range

- For use in hoists, transport and conveyor systems
- Reeling/unreeling during operation without fixing
- In dry or damp interiors, outdoors, or not more than 2 weeks without interruption in industrial water

Product features

- Flame-retardant according IEC 60332-1-2
- Oil-resistant according to EN 60811-404
- Good chemical, thermal and mechanical-resistance
- For connecting mobile equipment in hazardous areas acc. to DIN VDE 0165
- UV-resistant

Norm references / Approvals

- <VDE> NSHTÖU cable type certification acc. VDE 0250-814

Product Make-up

- Strands of tinned-copper wires
- Core insulation: rubber compound, type 3GI3
- Support braid integrated in the outer sheath
- Outer sheath: rubber compound, type 5GM3

Technical data

	Classification ETIM 5.0 Class-ID: EC000057 ETIM 5.0 Class-Description: Low voltage power cable
	Core identification code Up to 5 cores: colour-coded according to VDE 0293-308 From 6 cores: black with white numbers
	Conductor stranding Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5
	Minimum bending radius Flexible use: Cables with outer diameter < 21,5 mm: 5 x outer diameter Cables with outer diameter > 21,5 mm: 6,25 x outer diameter
	Nominal voltage U ₀ /U: 600/1000 V
	Test voltage 4000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Current rating VDE 0298 Part 4
	Temperature range Flexible use: -25 °C to +80 °C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE NSHTÖU				
0043006	3 G 1.5	12.2	43.2	190
00430053	4 G 1.5	14.8	57.6	220
00430073	5 G 1.5	15.7	72	260
0043008	7 G 1.5	18.2	100.8	380
0043009	12 G 1.5	23.9	172.8	720
0043010	18 G 1.5	23.9	259.2	770
0043011	24 G 1.5	27.1	345.6	1000
0043012	30 G 1.5	30.2	432	1320
0043013	3 G 2.5	13.5	72	250
00430303	4 G 2.5	16.9	96	330
00430143	5 G 2.5	18	120	390
0043015	7 G 2.5	20.6	168	510
0043016	12 G 2.5	27.4	288	970
0043017	18 G 2.5	27.4	432	1100

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0043018	24 G 2.5	31.6	576	1450
0043019	30 G 2.5	36.3	720	1950
00430203	4 G 4	18.4	153.6	440
00430333	5 G 4	19.6	192	520
00430213	4 G 6	19.8	230.4	530
00430343	5 G 6	21.7	288	690
00430223	4 G 10	23.4	384	830
00430003	5 G 10	25.2	480	1000
00430233	4 G 16	25.5	614.4	1170
00430323	5 G 16	27.5	768	1400
00430243	4 G 25	32.6	960	1830
00430253	4 G 35	34.8	1344	2280
00430263	4 G 50	40.6	1920	3220
00430283	4 G 70	44.8	2688	4200
00430293	4 G 95	51.2	3648	5530



info

- Robust and efficient
- Suitable for outdoor use
- Integrated sheath supporting braid



info

- Multifunctional application possibilities, flexible use down to -40 °C
- Lightweight due to minimised diameters
- Halogen-free

Technical data

	Classification ETIM 5.0 Class-ID: EC000057 ETIM 5.0 Class-Description: Low voltage power cable
	Core identification code Up to 5 cores: colour-coded according to VDE 0293-308 From 6 cores: black with white numbers
	Conductor stranding Extra-fine wire according to VDE 0295, class 6/ IEC 60228 class 6
	Minimum bending radius Flexible use: 7.5 x outer diameter
	Nominal voltage U ₀ /U: 600/1000 V
	Test voltage 3500 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Current rating VDE 298 Part 4
	Temperature range Flexible use: -40 °C to +80 °C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Tensile strength (N)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE PUR					
0045207	4 G 1.5	10.9	500	57.6	169
0045209	5 G 1.5	11.6	1000	72	197
0045210	7 G 1.5	12.9	2500	100.8	239
0045211	12 G 1.5	17.6	2500	172.8	401
0045212	18 G 1.5	17.5	2500	259.2	507
0045213	24 G 1.5	20.7	2500	345.6	673
0045215	30 G 1.5	28.9	3000	432	1100
0045214	36 G 1.5	31.4	3000	518.4	1350
0045216	4 G 2.5	12.2	500	96	227
0045218	5 G 2.5	13.2	2000	120	274
0045220	7 G 2.5	15.4	3000	168	358
0045221	12 G 2.5	21.6	3000	288	619
0045222	18 G 2.5	21.5	3000	432	793
0045223	24 G 2.5	25.5	3000	576	1123
0045224	30 G 2.5	34.7	3000	720	1641

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Tensile strength (N)	Copper index (kg/km)	Weight (kg/km)
0045225	4 G 4	14.3	1000	153.6	341
0045227	5 G 4	15.5	2000	192	411
0045228	4 G 6	16.6	1500	230.4	457
0045229	5 G 6	17.7	2000	288	538
0045235	7 G 6	21.5	2500	403	750
0045230	4 G 10	19.2	2000	384	674
0045237	5 G 10	21.6	2500	480	825
0045231	4 G 16	22.2	2500	614.4	966
0045238	5 G 16	25.6	3500	768	1222
0045232	4 G 25	27.6	3500	960	1506
0045233	4 G 35	31	4500	1344	2004
0045234	4 G 50	36.1	6000	1920	2838
0045240	3x25+3G6	25.7	2000	892.8	1380
0045241	3x35+3G6	27.6	2500	1180.8	1695
0045242	3x50+3G10	32.1	3500	1728	2307



ÖLFLEX® CRANE PUR

Reelable polyurethane cables for low, medium and high mechanical stress



Benefits

- Designed with a smaller outer diameter to save space and weight
- Cost-saving due to the use of smaller drums, guide rollers, as well as drive engines when possible
- Reeling, unreeling and guiding operations also impose tensile stresses on the cables
- The central supporting element absorbs the tensile loads that occur, thereby allowing reeling, unreeling and deflection for free-hanging cables even over large distances.
- Integrated supporting braid prevents undesirable cable twists, and the formation of so-called corkscrew effects

Application range

- For use in hoists, transport and conveyor systems
- Cables are reeled, unreeled, and guided by roller trains
- In dry or damp interiors, outdoors, or not more than 2 weeks without interruption in industrial water

Product features

- Halogen-free and flame-retardant (IEC 60332-1-2)
- Oil-resistant according to EN 60811-404
- Good chemical, thermal and mechanical-resistance
- For connecting mobile equipment in hazardous areas acc. to DIN VDE 0165

Product Make-up

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

Harsh Conditions and Chemical Resistant cables

Harsh conditions • High mechanical and chemical resistance



ÖLFLEX® ROBUST 210

Proven all-weather control cable resistant to a wide range of chemical media



Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Resistant to contact with plant, animal or synthetic-based organic oils, greases, waxes and the related emulsions
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning agents
- Well-suited to frequent steam cleaning

Application range

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- Agricultural equipment
- For indoor and outdoor use

Product features

- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Flexible down to -40°C
- Low-capacitance design
- Number-coded cores

Norm references / Approvals

- Based on VDE 0250 / 0285
- Certified resistance to disinfection and cleaning solutions used in food and beverage industry

Product Make-up

- Fine-wire, bare copper conductor
- Core insulation made of modified PP
- Cores twisted in layers
- Outer sheath made of special TPE
- Sheath colour: black

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBUST 210				
0021880	2 X 0.5	4.9	10	27
0021881	3 G 0.5	5.2	15	33
0021882	3 X 0.5	5.2	15	33
0021883	4 G 0.5	5.8	19.2	41
0021884	4 X 0.5	5.8	19.2	41
0021885	5 G 0.5	6.3	24	49
0021886	5 X 0.5	6.3	24	49
0021888	7 G 0.5	6.9	33.6	64
0021889	7 X 0.5	6.9	33.6	64
0021890	10 G 0.5	8.8	48	92
0021891	12 G 0.5	9.1	58	106
0021892	18 G 0.5	10.8	86.4	151
0021893	25 G 0.5	12.7	120	210
0021897	2 X 0.75	5.5	14.4	35
0021898	3 G 0.75	5.8	21.6	43
0021899	3 X 0.75	5.8	21.6	43
0021900	4 G 0.75	6.3	28.8	49
0021901	4 X 0.75	6.3	28.8	49
0021902	5 G 0.75	6.9	36	66
0021903	5 X 0.75	6.9	36	66
0021904	7 G 0.75	7.5	50	85
0021905	7 X 0.75	7.5	50	85
0021907	12 G 0.75	10.1	86	144
0021908	18 G 0.75	12.0	130	208
0021909	25 G 0.75	14.1	180	288
0021910	34 G 0.75	16.3	245	386
0021911	41 G 0.75	17.8	296	464
0021912	50 G 0.75	19.6	360	560
0021913	2 X 1.0	5.8	19.2	42
0021914	3 G 1.0	6.1	28.8	49
0021915	3 X 1.0	6.1	28.8	49
0021916	4 G 1.0	6.6	38.4	63
0021917	4 X 1.0	6.6	38.4	63
0021918	5 G 1.0	7.3	48	78
0021919	5 X 1.0	7.3	48	78
0021920	7 G 1.0	8.1	67	107
0021921	10 G 1.0	10.4	96	154

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0021922	12 G 1.0	10.7	115	178
0021923	18 G 1.0	12.9	173	262
0021924	25 G 1.0	15.0	240	357
0021925	34 G 1.0	17.5	326	484
0021926	41 G 1.0	19.2	394	582
0021927	50 G 1.0	21.0	480	703
0021928	2 X 1.5	6.4	29	56
0021929	3 G 1.5	6.8	43	72
0021930	3 X 1.5	6.8	43	72
0021931	4 G 1.5	7.4	58	91
0021932	4 X 1.5	7.4	58	91
0021933	5 G 1.5	8.3	72	108
0021934	5 X 1.5	8.3	72	108
0021936	7 G 1.5	9.0	101	149
0021937	7 X 1.5	9.0	101	149
0021938	10 G 1.5	11.8	143	215
0021940	12 G 1.5	12.2	173	234
0021941	18 G 1.5	14.6	259	369
0021942	25 G 1.5	17.2	360	510
0021943	34 G 1.5	19.8	490	683
0021945	50 G 1.5	24.0	720	999
0021946	2 X 2.5	7.6	48	86
0021947	3 G 2.5	8.3	72	115
0021949	4 G 2.5	9.0	96	131
0021951	5 G 2.5	10.1	120	178
0021953	7 G 2.5	11.2	168	241
0021954	12 G 2.5	15.1	288	405
0021963	3 G 4	10.1	115	180
0021964	4 G 4	11.1	157	228
0021965	5 G 4	12.4	192	280
0021966	7 G 4	13.6	269	377
0021967	4 G 6	13.3	230	332
0021968	5 G 6	14.8	288	407
0021969	4 G 10	16.5	384	541
0021970	5 G 10	18.4	480	620
0021971	4 G 16	18.8	614.4	806
0021972	4 G 25	23.5	960	1218
0021973	4 G 35	26.4	1344	1658

info

- Excellent weather resistance
- Good chemical resistance
- Reduced outer diameter

Technical data

	Classification ETIM 5.0 Class-ID: EC000104 ETIM 5.0 Class-Description: Control cable
	Core identification code Black with white numbers acc. to VDE 0293-1
	Conductor stranding Fine wire according to VDE 0295, class 5/IEC 60228 class 5
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 4 x outer diameter
	Nominal voltage U 0 /U: 300/500 V
	Test voltage 4000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Temperature range Occasional fl exing: -40°C to +80°C Fixed installation: -50°C to +80°C



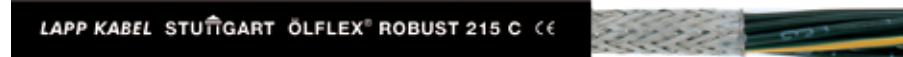
Harsh Conditions and Chemical Resistant cables

Harsh conditions • High mechanical and chemical resistance



ÖLFLEX® ROBUST 215 C

Proven all-weather control cable resistant to a wide range of chemical media



info

- Excellent weather resistance
- Good chemical resistance
- EMC compliant copper screening

Technical data

	Classification ETIM 5.0 Class-ID: EC000104 ETIM 5.0 Class-Description: Control cable
	Core identification code Black with white numbers acc. to VDE 0293-1
	Conductor stranding Fine wire according to VDE 0295, class 5/IEC 60228 class 5
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 4 x outer diameter
	Nominal voltage U 0 /U: 300/500 V
	Test voltage 4000 V
	Protective conductor G = with GN-YE protective conductor X = without protective conductor
	Temperature range Occasional fl exing: -40°C to +80°C Fixed installation: -50°C to +80°C

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Resistant to contact with plant, animal or synthetic-based organic oils, greases, waxes and the related emulsions
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning agents
- Well-suited to frequent steam cleaning

Application range

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- Agricultural equipment
- For indoor and outdoor use
- In EMC-sensitive environments
- (electromagnetic compatibility)

Product features

- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Flexible down to -40°C
- Low-capacitance design
- Number-coded cores

Norm references / Approvals

- Based on VDE 0250 / 0285
- Certified resistance to disinfection and cleaning solutions used in food and beverage industry

Product Make-up

- Fine-wire, bare copper conductor
- Core insulation made of modified PP
- Cores twisted in layers
- Halogen-free plastic foil wrapping
- Tinned copper screen braiding
- Outer sheath made of special TPE
- Sheath colour: black

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBUST 215 C					0022737	4 X 1.0	7.4	74	85
0022700	2 X 0.5	5.9	36	42	0022738	5 G 1.0	8.3	88	103
0022701	3 G 0.5	6.2	43	52	0022739	5 X 1.0	8.3	88	103
0022702	3 X 0.5	6.2	43	52	0022740	7 G 1.0	8.9	112	131
0022703	4 G 0.5	6.6	49	59	0022742	12 G 1.0	11.7	185	213
0022704	4 X 0.5	6.6	49	59	0022743	18 G 1.0	14.1	268	321
0022705	5 G 0.5	7.1	57	68	0022744	25 G 1.0	16.2	354	425
0022706	5 X 0.5	7.1	57	68	0022748	2 X 1.5	7.2	65	71
0022708	7 G 0.5	7.7	69	85	0022749	3 G 1.5	7.6	82	90
0022709	7 X 0.5	7.7	69	85	0022750	3 X 1.5	7.6	82	90
0022711	12 G 0.5	10.1	104	136	0022751	4 G 1.5	8.4	100	114
0022712	18 G 0.5	11.8	141	189	0022752	4 X 1.5	8.4	100	114
0022713	25 G 0.5	13.7	211	265	0022753	5 G 1.5	9.1	119	136
0022717	2 X 0.75	6.3	43	50	0022754	5 X 1.5	9.1	119	136
0022718	3 G 0.75	6.6	52	60	0022756	7 G 1.5	10.0	154	177
0022719	3 X 0.75	6.6	52	60	0022757	7 X 1.5	10.0	154	177
0022720	4 G 0.75	7.1	61	72	0022760	12 G 1.5	13.4	268	290
0022721	4 X 0.75	7.1	61	72	0022761	18 G 1.5	15.8	373	435
0022722	5 G 0.75	7.9	72	88	0022762	25 G 1.5	18.2	530	579
0022723	5 X 0.75	7.9	72	88	0022763	34 G 1.5	21.2	683	797
0022724	7 G 0.75	8.5	89	110	0022767	3 G 2.5	9.1	118	134
0022725	7 X 0.75	8.5	89	110	0022768	4 G 2.5	10.0	147	169
0022727	12 G 0.75	11.1	138	177	0022769	5 G 2.5	11.1	176	207
0022728	18 G 0.75	13.0	211	247	0022770	7 G 2.5	12.0	253	270
0022729	25 G 0.75	15.1	280	347	0022774	4 G 4	11.9	190	258
0022730	34 G 0.75	17.5	380	460	0022776	4 G 6	14.5	290	392
0022733	2 X 1.0	6.6	51	60	0022777	4 G 10	17.5	458	602
0022734	3 G 1.0	6.9	62	70	0022778	4 G 16	20.2	736.6	928
0022735	3 X 1.0	6.9	62	70	0022771	4 G 25	25.1	1126.7	1411
0022736	4 G 1.0	7.4	74	85	0022780	4 G 35	28.0	1540	1883



UNITRONIC® ROBUST

Halogen-free data transmission cable with colour code acc. to DIN 47100 - resistant to a wide range of chemical media



info

- Excellent weather resistance
- Good chemical resistance

Technical data



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



Core identification code
DIN 47100 without colour repetition,
refer to Appendix T9



Mutual capacitance
Fine wire according to VDE 0295,
class 5/IEC 60228 class 5`



Peak operating voltage
(not for power applications)
at 0.14 mm²: 350 V
at ≥ 0.25 mm²: 500 V



Specific insulation resistance
< 20 GOhm x cm



Inductivity
approx. 0.65 mH/km



Conductor stranding
Stranded, fine-wire
0.34 mm²: 7-wire



Minimum bending radius
Occasional flexing: 10 x outer
diameter Fixed installation:
4 x outer diameter



Test voltage
At 0.14 mm²: 1200 V



Temperature range
Occasional flexing: -40°C to +90°C
Fixed installation: -50°C to +90°C

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Resistant to contact with organic oils and the related emulsions as well as a multitude of plant, animal or synthetic-based greases and waxes
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning and cooling agents
- Well-suited to steam cleaning

Application range

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- For indoor and outdoor use

Product features

- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Halogen-free as per IEC 60754-1, Low corrosivity/ acidity of combustion gases per IEC 60754-2, Low toxicity of comb. gases per EN 50305
- Low smoke density according to IEC 61034-2

Norm references / Approvals

- Based on VDE 0812
- Certified resistance to disinfection and cleaning solutions used in food and beverage industry

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of special halogen-free compound
- Outer sheath made of special TPE
- Outer sheath colour: Black

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® ROBUST				
1032000	2 x 0.14	3.2	2.8	15
1032001	3 x 0.14	3.4	4.2	17
1032002	4 x 0.14	3.6	5.6	21
1032003	5 x 0.14	3.9	7	25
1032004	7 x 0.14	4.2	9.8	30
1032005	8 x 0.14	4.9	11.2	40
1032006	10 x 0.14	5.2	14	41
1032007	12 x 0.14	5.6	16.8	50
1032009	16 x 0.14	6.1	22.4	63
1032011	25 x 0.14	7.7	35	95
1032012	2 x 0.25	3.8	4.8	21
1032013	3 x 0.25	4	7.2	25
1032014	4 x 0.25	4.3	9.6	31
1032015	5 x 0.25	4.7	12	38
1032016	7 x 0.25	5.1	16.8	47
1032017	8 x 0.25	6.2	19.2	66
1032018	10 x 0.25	6.8	24	71
1032019	12 x 0.25	7	28.8	81
1032021	16 x 0.25	7.7	38.4	104
1032024	25 x 0.25	9.5	60	151

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1032025	2 x 0.34	4.2	6.5	29
1032026	3 x 0.34	4.4	9.8	32
1032027	4 x 0.34	4.8	13.1	41
1032028	5 x 0.34	5.5	16.3	52
1032030	7 x 0.34	5.9	22.9	65
1032031	8 x 0.34	7.1	26.1	90
1032032	10 x 0.34	7.6	32.6	93
1032033	12 x 0.34	7.8	39.2	107
1032035	16 x 0.34	8.7	52.2	138
1032038	25 x 0.34	11.2	81.6	213



UNITRONIC® ROBUST C

Halogen-free data transmission cable with colour code acc. to DIN 47100 - resistant to a wide range of chemical media



info

- Excellent weather resistance
- Good chemical resistance

Technical data



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



Core identification code
DIN 47100 without colour repetition,
refer to Appendix T9



Mutual capacitance
C/C approx. 60 nF/km
C/S approx. 100 nF/km



Peak operating voltage
(not for power applications)
at 0.14 mm²: 350 V
at ≥ 0.25 mm²: 500 V



Specific insulation resistance
< 20 GOhm x cm



Inductivity
approx. 0.65 mH/km



Conductor stranding
Stranded, fine-wire
0.34 mm²: 7-wire



Minimum bending radius
Occasional flexing: 10 x outer
diameter Fixed installation:
4 x outer diameter



Test voltage
At 0.14 mm²: 1200 V



Temperature range
Occasional flexing: -40°C to +90°C
Fixed installation: -50°C to +90°C

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Resistant to contact with organic oils and the related emulsions as well as a multitude of plant, animal or synthetic-based greases and waxes
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning and cooling agents
- Well-suited to steam cleaning

Application range

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- For indoor and outdoor use

Product features

- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Halogen-free as per IEC 60754-1, Low corrosivity/ acidity of combustion gases per IEC 60754-2, Low toxicity of comb. gases per EN 50305
- Low smoke density according to IEC 61034-2

Norm references / Approvals

- Based on VDE 0812
- Certified resistance to disinfection and cleaning solutions used in food and beverage industry

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of special halogen-free compound
- Tinned-copper braiding
- Outer sheath made of special TPE
- Outer sheath colour: Black

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® ROBUST C				
1032050	2 x 0.14	3.9	9.3	25
1032051	3 x 0.14	4.1	10.8	28
1032052	4 x 0.14	4.3	13.5	34
1032053	5 x 0.14	4.6	15	38
1032055	7 x 0.14	4.9	19	46
1032056	8 x 0.14	5.8	22	60
1032057	10 x 0.14	6.1	25.8	63
1032058	12 x 0.14	6.3	28.9	70
1032061	25 x 0.14	8.4	56.1	128
1032062	2 x 0.25	4.5	12.7	33
1032063	3 x 0.25	4.7	16.3	40
1032064	4 x 0.25	5	18.8	46
1032065	5 x 0.25	5.6	22.5	57
1032067	7 x 0.25	6	28.6	69
1032068	8 x 0.25	7.1	33.6	92

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
1032069	10 x 0.25	7.5	42.8	101
1032070	12 x 0.25	7.7	47.7	111
1032073	25 x 0.25	10.6	86.5	202
1032074	2 x 0.34	4.9	15.7	44
1032075	3 x 0.34	5.1	20.4	54
1032076	4 x 0.34	5.7	23.6	66
1032077	5 x 0.34	6.2	28.2	78
1032079	7 x 0.34	6.8	36	95
1032080	8 x 0.34	7.8	45.3	127
1032081	10 x 0.34	8.3	53.9	137
1032082	12 x 0.34	8.5	60.7	152
1032084	16 x 0.34	9.4	77.9	191
1032086	25 x 0.34	11.9	115.7	288

Low frequency data transmission cables • Halogen-free



UNITRONIC® ROBUST C (TP)

Halogen-free data transmission cable with colour code acc. to DIN 47100 - resistant to a wide range of chemical media



info

- Excellent weather resistance
- Good chemical resistance

Technical data



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



Core identification code
DIN 47100 without colour repetition, refer to Appendix T9



Mutual capacitance
C/C approx. 60 nF/km
C/S approx. 100 nF/km



Peak operating voltage
(not for power applications)
at 0.14 mm²: 350 V
at ≥ 0.25 mm²: 500 V



Specific insulation resistance
< 20 GOhm x cm



Inductivity
approx. 0.65 mH/km



Conductor stranding
Stranded, fine-wire
0.34 mm²: 7-wire



Minimum bending radius
Occasional flexing: 10 x outer diameter
Fixed installation: 4 x outer diameter



Test voltage
At 0.14 mm²: 1200 V



Temperature range
Occasional flexing: -40°C to +90°C
Fixed installation: -50°C to +90°C

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Resistant to contact with organic oils and the related emulsions as well as a multitude of plant, animal or synthetic-based greases and waxes
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning and cooling agents
- Well-suited to steam cleaning

Application range

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- For indoor and outdoor use

Product features

- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Halogen-free as per IEC 60754-1, Low corrosivity/ acidity of combustion gases per IEC 60754-2, Low toxicity of comb. gases per EN 50305
- Low smoke density according to IEC 61034-2

Norm references / Approvals

- Based on VDE 0812
- Certified resistance to disinfection and cleaning solutions used in food and beverage industry

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of special halogen-free compound
- TP structure
- Tinned-copper braiding
- Outer sheath made of special TPE
Outer sheath colour: black (RAL 9005)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® ROBUST C (TP)				
1032100	2 x 2 x 0.14	5.3	16.1	31
1032101	3 x 2 x 0.14	5.8	19	38
1032102	4 x 2 x 0.14	6.2	23.1	46
1032103	5 x 2 x 0.14	6.4	27.2	54
1032104	6 x 2 x 0.14	7.1	31.3	63
1032105	8 x 2 x 0.14	8.2	43.4	90
1032106	10 x 2 x 0.14	8.7	50.9	93
1032107	12 x 2 x 0.14	8.9	56.6	102
1032108	2 x 2 x 0.25	6.3	22.7	43
1032109	3 x 2 x 0.25	7.1	28.9	56
1032110	4 x 2 x 0.25	7.6	38.3	72
1032111	5 x 2 x 0.25	7.9	45.1	85
1032112	6 x 2 x 0.25	8.5	48.7	96
1032113	8 x 2 x 0.25	10.3	64.3	135
1032114	2 x 2 x 0.34	7.1	27.6	56
1032115	3 x 2 x 0.34	7.8	38.8	74
1032116	4 x 2 x 0.34	8.4	47.5	90
1032117	5 x 2 x 0.34	8.8	58.2	110

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1032118	1 x 2 x 0.5	4.9	20.1	37
1032119	2 x 2 x 0.5	7.9	40.3	72
1032120	3 x 2 x 0.5	8.7	51.7	91
1032121	4 x 2 x 0.5	9.4	64.1	112
1032122	5 x 2 x 0.5	10.3	76.6	141
1032123	6 x 2 x 0.5	11.1	91.7	170
1032124	8 x 2 x 0.5	13.1	123.2	238
1032125	10 x 2 x 0.5	14.5	146.4	247
1032126	2 x 2 x 0.75	8.5	48.4	84
1032127	3 x 2 x 0.75	9.4	68.9	114
1032128	4 x 2 x 0.75	10.7	86.2	149
1032129	6 x 2 x 0.75	12.1	131.9	225
1032130	8 x 2 x 0.75	14.7	168.2	315
1032131	2 x 2 x 1	9	64.1	98
1032132	3 x 2 x 1	10.4	83.5	135
1032133	4 x 2 x 1	11.3	105.7	168



ETHERLINE® ROBUST C (TP)

Halogen-free data transmission cable with colour code acc. to DIN 47100 - resistant to a wide range of chemical media



Technical data



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



Minimum bending radius
Flexing: 10 x outer diameter
Fixed installation: 4 x outer diameter



Characteristic impedance
Nom. 100 ohm according to IEC 61156-6



Temperature range
Occasional flexing: -40°C to +80°C
IFixed installation: -50°C to +80°C

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications.
- Resistant to contact with bio-oils, fats, waxes and their emulsions with a plant, animal or synthetic basis.
- Good resistance to ammonia compounds and bio-gases.
- Good resistance to cold and hot water as well as water-soluble cleaning agents
- Suitable for frequent steam cleaning

Design

- Stranded wire, bare, 7 wire
- Polyolefin-based core insulation
- Screening braid made of tin-plated copper wires
- Outer sheath made of special TPE
- Colour: Black

Article Number	Article designation	Number of pairs and AWG per conductor	Max outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Profinet Cat 5e					
2170454	ETHERLINE ROBUST PN FR Cat.5e	2x2xAWG22/7	6.5	30.4	50
Profinet Cat 7					
2170455	ETHERLINE ROBUST PN FR Cat.7	4x2xAWG23/7	8.7	48	75
INDUSTRIAL ETHERNET Cat.7					
2170456	ETHERLINE ROBUST FR Cat.7	4x2xAWG26/7	6.5	27	36

Unitronic BUS ProfiBus Robust



Technical data



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



Mutual capacitance
(800 Hz): max. 30 nF/km



Peak operating voltage
(not for power applications) 250 V



Conductor resistance
(loop): max. 186 Ohm/km.
see also datasheet



Minimum bending radius
Fixed installation: see data sheet



Test voltage
Core/core: 1500 V rms



Characteristic impedance
150 ± 15 Ohm

Benefits

- Robust PROFIBUS cable for use under harsh conditions.
- For fixed installations. Dry or damp rooms.
- Resistant to water, chemicals, tensides, soaps and UV rays

Design

- FC: "Fast Connect" cable design
- P: Polyurethane
- H: Halogen-free
- PE: polyethylene, black Outer sheath, e.g. for the food and beverage industry
- 7-W: 7-wire, e.g. for applications where vibrations occur
- COMBI: Data transmission and power supply in one cable

Part No	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)	Weight (kg/km)
2170620	UNITRONIC BUS PB ROBUST	1 x 2 x 0.64	8	26	55	55

UL Approved Cables

UL approved products are required on all industrial machines being exported to the USA. This is required by the NFPA 79 regulations. The purpose of UL approvals is to ensure all electrical machinery being imported into the USA is safe to use. Cables that are UL approved are marked with UL symbols so that electrical inspectors will know when a non-UL cable is being used.

Failure to comply with UL regulations can result with two outcomes: Either the machine will need to be re-wired in the United States, or the machine will be sent back to Australia to be rewired with cables that comply. Both scenarios are very expensive.

LAPP KABEL work with the largest machine builders in the world. Our USA design team are always up to date with regulations to make sure products meet the latest regulations.

Please contact our sales team if you have any questions regarding your requirements.

For more UL cable options try our website at treotham.com.au.

ÖLFLEX® UL - Appliance Wire

Appliance Wire with UL approvals - 1000V

Conductor Size MM	0.5mm ²	0.75mm ²	1mm ²	1.5mm ²	2.5mm ²	4mm ²	6mm ²	10mm ²	16mm ²
Conductor Size AWG	22AWG	20AWG	18AWG	16AWG	14AWG	12AWG	10AWG	8AWG	6AWG
Earth	4160100	4160200	4160300	4160400	4160500	4160600	4160700	4160800	4160900
Black	4160101	4160201	4160301	4160401	4160501	4160601	4160701	4160801	4160901
Blue	4160102	4160202	4160302	4160402	4160502	4160602	4160702	4160802	4160902
Brown	4160103	4160203	4160303	4160403	4160503	4160603	4160703	4160803	4160903
Red	4160104	4160204	4160304	4160404	4160504	4160604	4160704	4160804	4160904
White	4160105	4160205	4160305	4160405	4160505	4160605	4160705	4160805	4160905
Grey	4160106	4160206	4160306	4160406	4160506	4160606	4160706	4160806	4160906
Purple	4160107	4160207	4160307	4160407	4160507	4160607	4160707		
Pink	4160108	4160208	4160308	4160408	4160508	4160608			
Orange	4160109	4160209	4160309	4160409	4160509	4160609	4160709	4160809	4160909
Yellow	4160110	4160210	4160310	4160410	4160510	4160610	4160710	4160810	4160910
Green	4160111	4160211	4160311	4160411	4160511	4160611	4160711	4160811	4160911
Dark Blue	4160114	4160214	4160314	4160414	4160514	4160614	4160714	4160814	4160914
Blue + White Stripe	4160126	4160226	4160326	4160426	4160526	4160626	4160726	4160826	
White + Blue Stripe	4160144	4160244	4160344	4160444	4160544	4160644	4160744	4160844	
Cable OD	2.5mm	2.7mm	2.9mm	3.1mm	3.7mm	4.4mm	4.9mm	6.8mm	8.9mm

ÖLFLEX® UL - Control TM CY

EMC Screened flex for Drives



Part No.	Cores	Conductor	Description	OD (mm)
3G (2 Core + Earth)				
281803CY	3	3G 1mm	2 Core + Earth	8.1
281603CY	3	3G 1.5mm	2 Core + Earth	8.8
281403CY	3	3G 2.5mm	2 Core + Earth	9.7
4G (3 Core + Earth)				
281804CY	4	4G 1mm	3 Core + Earth	8.6
281604CY	4	4G 1.5mm	3 Core + Earth	9.4
281404CY	4	4G 2.5mm	3 Core + Earth	10.4
281204CY	4	4G 4mm	3 Core + Earth	12.3
7G (6 Core + Earth)				
281807CY	7	7G 1mm	6 Core + Earth	10
281607CY	7	7G 1.5mm	6 Core + Earth	11.1
281407CY	7	7G 2.5mm	6 Core + Earth	12.4



Stop
AWM is no longer valid

Caution
NFPA 79 2007-
Standards have changed

Go
MTW is one road to
take to follow the new
standard

UL Approved Cables

ÖLFLEX® UL - 150 Series
Multicore flex with small conductors



Article number	Number of cores and mm ² per conductor	Outer diameter[mm]	Copper index (kg/km)	Weight (kg/km)	Article number	Number of cores and mm ² per conductor	Outer diameter[mm]	Copper index (kg/km)	Weight (kg/km)
0015002	2 X 0.5	5.9	9.6	47	0015207	7 G 1.0	10.4	67	169.3
0015003	3 G 0.5	6.2	14.4	62.4	0015212	12 G 1.0	12.8	115	285.9
0015004	4 G 0.5	6.8	19.2	68.2	0015218	18 G 1.0	15.1	173	405.2
0015005	5 G 0.5	7.4	24	87.1	0015225	25 G 1.0	18	240	569.5
0015007	7 G 0.5	9	33.6	118.7	0015234	34 G 1.0	20.9	326	741.7
0015012	12 G 0.5	11.1	58	198	0015241	41 G 1.0	22.8	394	886
0015018	18 G 0.5	13.2	86.4	328	0015250	50 G 1.0	25	480	1,072.2
0015025	25 G 0.5	15.7	120	380.4	0015302	2 X 1.5	7.6	28.8	95
0015034	34 G 0.5	18.1	164	509	0015303	3 G 1.5	8.3	43	109.8
0015041	41 G 0.5	19.7	197	595	0015304	4 G 1.5	9	58	145
0015102	2 X 0.75	6.3	14.4	61	0015305	5 G 1.5	10.1	72	168
0015103	3 G 0.75	6.7	21.6	75.6	0015307	7 G 1.5	12.5	101	224.2
0015104	4 G 0.75	7.2	28.8	83.9	0015312	12 G 1.5	15.1	173	361.7
0015105	5 G 0.75	8.1	36	113.3	0015318	18 G 1.5	18	259	518.3
0015107	7 G 0.75	9.9	50	145	0015325	25 G 1.5	21.4	360	729.9
0015112	12 G 0.75	12	86	244.9	0015334	34 G 1.5	25	490	946.6
0015118	18 G 0.75	14.4	130	327.7	0015341	41 G 1.5	27.2	591	1136
0015125	25 G 0.75	17.1	180	466.4	0015402	2 X 2.5	9.2	48	159
0015134	34 G 0.75	19.7	245	626.5	0015403	3 G 2.5	9.9	72	170
0015141	41 G 0.75	21.6	296	748	0015404	4 G 2.5	10.8	96	210
0015202	2 X 1.0	6.6	19.2	80	0015405	5 G 2.5	12.1	120	257
0015203	3 G 1.0	7	28.8	79	0015407	7 G 2.5	14.7	168	340
0015204	4 G 1.0	7.8	38.4	98.6	0015412	12 G 2.5	17.9	288	580
0015205	5 G 1.0	8.6	48	132.1	0015418	18 G 2.5	21.6	432	850
0015206	6 G 1.0	9.5	57.6	150	0015425	25 G 2.5	25.6	600	1166

ÖLFLEX® UL - Control TM

Multicore flex with UL approvals - 600V



Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
281803	3 G 1.0	7.4	28.8	82
281804	4 G 1.0	8	38.4	95
281805	5 G 1.0	8.6	48	112
281807	7 G 1.0	9.3	67	144
281812	12 G 1.0	12	115	247
281818	18 G 1.0	14.7	173	365
281825	25 G 1.0	16.7	240	464
281602	2 X 1.5	7.3	28.8	74
281603	3 G 1.5	8.1	43	100
281604	4 G 1.5	8.8	58	119
281605	5 G 1.5	9.5	72	141
281607	7 G 1.5	10.3	101	183
281609	9 G 1.5	11.9	129.6	247
281612	12 G 1.5	14.1	172.8	328
281618	18 G 1.5	16.4	259	403
281625	25 G 1.5	18.6	360	596
281403	3 G 2.5	8.9	72	125
281404	4 G 2.5	9.8	96	175
281405	5 G 2.5	10.7	120	185
281407	7 G 2.5	11.6	168	244
281203	3 G 4.0	10.6	115	165
281204	4 G 4.0	11.5	154	220
281205	5 G 4.0	12.6	192	269
281207	7 G 4.0	14.6	269	482
281004	4 G 6.0	14.5	231	382
281005	5 G 6.0	15.8	288	457
280804	4 G 10.0	17.7	384	615
280805	5 G 10.0	19.4	480	771
280604	4 G 16.0	22.5	615	864

UNITRONIC® SENSOR SH M 12
M 12 plug/socket on free conductor end, shielded



info

Other types are available on www.lappgroup.com/assemblyfinder or upon request

- Benefits
- Cost-saving due to quick and easy installation
 - Space-saving due to compact dimensions
 - Fast and easy error tracking
 - Integrated vibration protection (mechanical lock-in)
 - Gold-plated contacts for low transfer resistance

- Application range
- For increased mechanical stress and harsh operating conditions

- Product features
- UV-resistant
 - Good resistance to oils and chemicals
 - PWIS and PVC free
 - Shielding is conducted over the knurl
 - Suitable for drag chains
 - Including tag carrier

- Norm references / Approvals
- Halogenfree according to DIN VDE 0472
 - UL File Number: E249137
 - Flame-retardant according to UL 1581 FT-2

- Product Make-up
- Wire cross-section: 0,34 mm²
 - Colour-code:
 - 3-pin: bn (1), bu (3), bk (4)
 - 4-pin: bn (1), wh (2), bu (3), bk (4)
 - 5-pin: bn (1), wh (2), bu (3), bk (4), gn/ye (5)
 - 8-pin: wh (1), bn (2), gn (3), ye (4), gy (5), pk (6), bu (7), rd (8)
 - Outer sheath: PUR, black

- Suitable tools
- DATA STRIP stripping tool

Technical data

ETIM

ETIM 5.0 Class-ID: EC001855
ETIM 5.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Minimum bending radius
Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter

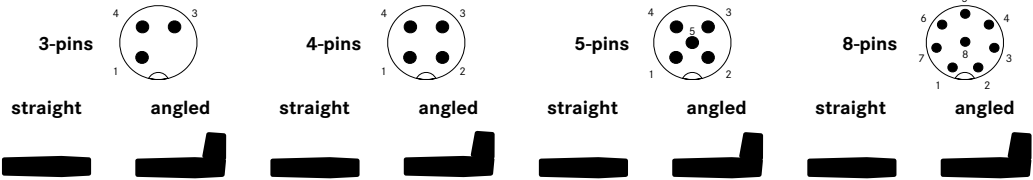
IP

Protection rating
IP 65/IP 67/IP 68

Ambient temperature (operation)
Plug/socket -25°C to +90°C
Fixed installation -25°C to +80°C
Flexing -25°C to +80°C

Coding
A-standard

Rated current (A)
4 A
2 A (8-pin)



Product	Length	Part number							
Plug, unshielded	2.0m	22260221	22260223	22260320	22260301	22260400	22260402	22260091	22260094
	5.0m	22260222	22260224	22260321	22260302	22260401	22260403	22260092	22260095
	10.0m	22260249	22260256	22260342	22260303	22260414	22260417	22260093	22260096
Socket, unshielded	2.0m	22260257	22260258	22260322	22260324	22260404	22260406	22260726	22260141
	5.0m	22260250	22260259	22260323	22260325	22260405	22260407	22260728	22260615
	10.0m	22260251	22260260	22260343	22260341	22260415	22260418	22260729	22260616
Socket with LEDs, unshielded	2.0m	22260252	22260253	22260344	22260326	On request	22260408	—	—
	5.0m	22260265	22260254	22260345	22260327		22260409		
	10.0m	22260266	22260255	22260346	22260340		22260416		
Plug, shielded	2.0m	22260453	On request	22260459	On request	22260465	22261004	On request	On request
	5.0m	22260454		22260460		22260466	22261005		
	10.0m	22260455		22260461		22260467	On request		
Socket, shielded	2.0m	22260450	22260074	22260456	22260074	22260462	22260946	On request	On request
	5.0m	22260451	22260675	22260457	22260675	22260463	22260714	22260863	22260859
	10.0m	22260452	22260680	22260458	22260680	22260464	22260991	22262001	On request

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.
UL certifications can be found in the data sheet



UNITRONIC® SENSOR
Sensor Cable



- Application range
- Cables for UNITRONIC® SENSOR sensor/actuator cabling
 - Unshielded and shielded data transmission cables to connect to M8, M12 connectors
 - Automation technology
 - Mechanical engineering
 - Plant engineering

- Product features
- Core colour code in accordance with DIN EN 50044
 - 3 x 0.25 mm² or 0.34mm²
 - 1= brown, 2= blue, 3= black
 - 4x 0.25 mm² or 0.34 mm²
 - 1= brown, 2= white, 3= blue, 4= black
 - 5 x 0.25 mm² or 0.34 mm²
 - 1= brown, 2= white, 3= blue, 4= black, 5= grey
 - 8x 0.25mm²
 - 1= white, 2=brown, 3= green, 4= yellow, 5= grey, 6= pink, 7=blue, 8= red

- Product Make-up
- UNITRONIC® SENSOR LiFY sensor/actuator cabling
Conductor: extra-fine bare copper strand in accordance with DIN VDE 0295 Class 6; core insulation: PVC, outer sheath: PVC
 - UNITRONIC® SENSOR DESINA® LiFY Stranded bare copper conductor, superfine. In accordance with VDE 0295 Class 6, special PVC insulation, cores twisted in layers, core identification in accordance with DESINA® (brown, white, blue, black). Outer sheath is made of special polyurethane-based compound; yellow colour in acc. to RAL 1021; flame retardant acc. to IEC 60332-1-2. Operating voltage= 48 V, Peak working voltage= 300 V.
 - UNITRONIC® SENSOR FD Li9Y11Y and SENSOR FD Li9YC11Y AWM UL Style 20549, 80 °C/300 V. Conductor: Cu strand, bare, extra-fine wire according to DIN VDE 0295 Class 6, core insulation: modified polypropylene (PP), outer sheath: halogen-free polyurethane (PUR), matt, adhesion-free
 - UNITRONIC® SENSOR FD series cables are specially designed for use in power chains

Technical data

ETIM

ETIM 5.0 Class-ID: EC001855
ETIM 5.0 Class-Description: Sensor-actuator patch cord

Article number	Article designation	Dimensions (mm²)	Outer diameter (mm)	Core/outer sheath material	Colour	UL	Copper index (kg/km)
UNITRONIC® SENSOR PVC							
7038898	LiFY	3 x 0.25	3.8	PVC/PVC	black	-	7.5
7038899	LiFY	4 x 0.25	4.2	PVC/PVC	black	-	10.2
7038900	LiFY	3 x 0.34	4.1	PVC/PVC	black	-	9.8
7038901	LiFY	4 x 0.34	4.4	PVC/PVC	black	-	13
7038862	LiFY	5 x 0.34	4.8	PVC/PVC	black	-	16
UNITRONIC SENSOR PVC UL							
7038903	LiFY A	3 x 0.25	4.3	PVC/PVC	black	yes	7.5
7038904	LiFY A	4 x 0.25	4.6	PVC/PVC	black	yes	10.2
7038905	LiFY A	3 x 0.34	4.4	PVC/PVC	black	yes	9.8
7038906	LiFY A	4 x 0.34	4.8	PVC/PVC	black	yes	13
7038907	LiFY A	5 x 0.34	5.2	PVC/PVC	black	yes	16
UNITRONIC® SENSOR FD screened							
7038861	LiFY11Y	4 x 0.34	4.8	PVC/PUR	black	-	13.1
7038886	LiFY11Y	5 x 0.25	4.9	PVC/PUR	black	-	12
7038887	DESNA	4 x 0.34	5.2	PVC/PUR	yellow	-	13.5

Sensor/ actuator cabling • M12 Field mountable connectors and wall ducts



EPIC® SENSOR M 12
Field mountable connectors M12



Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC002062
ETIM 5.0/6.0 Class-Description:
Sensor-actuator connector

Material
Contact: CuZn
Contact surface: CuSnZn

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

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

Coding
A-standard
4 A
2 A (8-pin)

Benefits

- For creating of individual cable lengths
- No special tools required for connecting the cables
Time-saving assembly with IDC connection technology
- Easy connection with proven screw clamp connection

Product features

- 4, 5 and 8-pin version
- Screened and non-screened version
- Screw connection or insulation displacement contacts (IDC)
- PWIS-free

Article number	Article designation	Number of pins	Connection type	Cross-section in mm ²	Cable diameter in mm	Rated voltage (V)	PU
Plug, straight							
22260132	AB-C4-M12MS-F0,34	4	IDC	0.14 - 0.34	3.5 - 6	125	1
22260134	AB-C4-M12MS-F0,75	4	IDC	0.34 - 0.75	4 - 8	250	1
22260649	AB-C4-M12MS-PG7	4	screw	0.25 - 0.75	4 - 6	250	1
22260995	AB-C4-M12MS-PG9	4	screw	0.25 - 0.75	6 - 8	250	1
22260129	AB-C5-M12MS-PG7	5	screw	0.25 - 0.75	4 - 6	60	1
22260651	AB-C5-M12MS-PG9	5	screw	0.25 - 0.75	6 - 8	60	1
22260996	AB-C5-M12MS-PG9-SKINTOP®	5	screw	0.25 - 0.75	6 - 8	60	1
Plug, straight shielded							
22260135	AB-C5-M12MS-PG9-SH	5	screw	0.25 - 0.75	6 - 8	60	1
22260825	AB-C8-M12MS-PG9-SH	8	screw	0.25 - 0.75	6 - 8	30	1
Plug, angled							
22260647	AB-C4-M12MA-PG7	4	screw	0.25 - 0.75	4 - 6	250	1
22260130	AB-C5-M12MA-PG7	5	screw	0.25 - 0.75	4 - 6	60	1
22260648	AB-C5-M12MA-PG9	5	screw	0.25 - 0.75	6 - 8	60	1
22262023	AB-C5-M12MA-PG9-SKINTOP®	5	screw	0.25 - 0.75	6 - 8	60	1
Plug angled, shielded Socket, straight							
22262108	AB-C5-M12MA-PG7-SH	5	screw	0.25 - 0.75	4 - 6	60	1
22260131	AB-C4-M12FS-F0,34	4	IDC	0.14 - 0.34	3.5 - 6	125	1
22260133	AB-C4-M12FS-F0,75	4	IDC	0.34 - 0.75	4 - 8	250	1
22260640	AB-C4-M12FS-PG7	4	screw	0.25 - 0.75	4 - 6	250	1
22260641	AB-C4-M12FS-PG9	4	screw	0.25 - 0.75	6 - 8	250	1
22260127	AB-C5-M12FS-PG7	5	screw	0.25 - 0.75	4 - 6	60	1
22260644	AB-C5-M12FS-PG9	5	screw	0.25 - 0.75	6 - 8	60	1
22260997	AB-C5-M12FS-PG9-SKINTOP®	5	screw	0.25 - 0.75	6 - 8	60	1
Socket, straight shielded							
22260136	AB-C5-M12FS-PG9-SH	5	screw	0.25 - 0.75	6 - 8	60	1
22260826	AB-C8-M12FS-PG9-SH	8	screw	0.25 - 0.75	6 - 8	30	1
Socket, angled							
22260636	AB-C4-M12FA-PG7	4	screw	0.25 - 0.75	4 - 6	250	1
22260128	AB-C5-M12FA-PG7	5	screw	0.25 - 0.75	4 - 6	60	1
22260638	AB-C5-M12FA-PG9	5	screw	0.25 - 0.75	6 - 8	60	1
22262024	AB-C5-M12FA-PG9-SKINTOP®	5	screw	0.25 - 0.75	6 - 8	60	1
Socket angled, shielded							
22262109	AB-C5-M12FA-PG7-SH	5	screw	0.25 - 0.75	4 - 6	60	1

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



Sensor / Actuator Hygienic Design for food and beverage



Benefits

- Hygienic design for ideal cleaning results
- Guaranteed density by meeting the highest protection class
- Stainless steel knurl to ensure protection against corrosion
- Bright colours to detect contamination quickly

Product make-up

- 4 x 0.34mm²
- Core colours: brown (1), white (2), blue (3) Black (4)
- Outer sheath: TPE, halogen-free
- Outer sheath colour: Grey

Product Features

- 4-pin plug/socket with M12 thread on free conductor end

Technical data

- Material**
Contact: CuSn
Contact surface: Ni/Au
Knurl: Stainless steel (4A)
Gripping body: PP
- Minimum bending radius**
Fixed installation 5 x outer diameter
Flexing: 10 x outer diameter
- Protection Rating**
IP65/IP67/IP68/IP69K
- Ambient temperature operation**
Fixed installation : -40°C to +105°C
Fixed installation: -25°C to +105°C
- Coding**
A-standard

Article Number	Article designation	Number of pins	Length (m)	Nominal voltage U _n (V)	Nominal current I _n (A)	PU
Straight connector						
22262040	AB-C4-M12MS-2,0TPE-HD	4	2	250	4	1
22262041	AB-C4-M12MS-5,0TPE-HD	4	5	250	4	1
22262060	AB-C4-M12MS-7,5TPE-HD	4	7.5	250	4	1
22262042	AB-C4-M12MS-10,0TPE-HD	4	10	250	4	1
22262061	AB-C4-M12MS-15,0TPE-HD	4	15	250	4	1
Straight socket						
22262043	AB-C4-2,0TPE-M12FS-HD	4	2	250	4	1
22262044	AB-C4-5,0TPE-M12FS-HD	4	5	250	4	1
22262062	AB-C4-7,5TPE-M12FS-HD	4	7.5	250	4	1
22262045	AB-C4-10,0TPE-M12FS-HD	4	10	250	4	1
22262063	AB-C4-15,0TPE-M12FS-HD	4	15	250	4	1
Angled socket						
22262046	AB-C4-2,0TPE-M12FA-HD	4	2	250	4	1
22262047	AB-C4-5,0TPE-M12FA-HD	4	5	250	4	1
22262064	AB-C4-7,5TPE-M12FA-HD	4	7.5	250	4	1
22262048	AB-C4-10,0TPE-M12FA-HD	4	10	250	4	1
22262065	AB-C4-15,0TPE-M12FA-HD	4	15	250	4	1



LAPP KABEL STUTTGART UNITRONIC® ROBUST C (TP)

LAPP KABEL STUTTGART UNITRONIC® ROBUST C

LAPP KABEL STUTTGART UNITRONIC® ROBUST



Ethernet cables

Industrial Ethernet cable Cat.5/ Cat.5e • Industrial Ethernet



ETHERLINE® Cat.5e
Fixed installation



Benefits

- Seamless communication from the sensor/actuator level to the Internet
- Screened against interference
- Can be used in dry or damp rooms
- Can be used for Industrial Ethernet in harsh industrial environments
- Cables with PUR jacket: 1000 V UL- rating for installation next to power cables

Application range

- 2pair: 10/100 Mbit/s for Industrial Ethernet
- 4pair: 10/100/1000 Mbit/s for Industrial Ethernet
- Suitable for EtherCAT and EtherNet/IP applications
- Industrial use
- Fixed installation

Product features

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

Norm references / Approvals

- PUR versions: UL AWM Style 21576
- Flame retardant acc. to IEC 60332-1-2
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)

Product Make-up

- Solid conductor
- Core insulation made of foam skin
- 2 or 4-pair version
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- Outer sheath as either PUR or LSZH
- Colour: water blue (RAL 5021)



info

- Industrial Ethernet cable
- Cat.5e

Technical data

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

Peak operating voltage
(not for power applications) 125 V

Minimum bending radius
Fixed installation: 7.5 x outer diameter (2 pair cable)
Fixed installation: 8 x outer diameter (4 pair cable)

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

Characteristic impedance
100 Ohm +- 15%

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: -30°C to +80°C
moved: -5°C to +60°C



info

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

Technical data

ETIM 5.0 Class-ID: EC000829
ETIM 5.0 Class-Description: Signal-/telecommunications cable

Peak operating voltage
(not for power applications) 125 V

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

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

Characteristic impedance
100 Ohm +- 15%

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: -30°C to +80°C
flexing: -5°C to +60°C
cable with PVC jacket
Fixed installation: -40°C to +80°C
flexing: -10°C to +70°C

Benefits

- Seamless communication from the sensor/actuator level to the Internet
- Screened against interference
- Can be used in dry or damp rooms
- Can be used for Industrial Ethernet in harsh industrial environments
- Cables with PUR jacket: 1000 V UL- rating for installation next to power cables

Application range

- 2pair: 10/100 Mbit/s for Industrial Ethernet
- 4pair: 10/100/1000 Mbit/s for Industrial Ethernet
- Suitable for EtherCAT and EtherNet/IP applications
- For flexible applications (7-wire stranded conductor)
- Only for patch cable applications (max. 60 m)

Product features

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

Ethernet cables

Industrial Ethernet cable Cat.5/ Cat.5e • Industrial Ethernet



ETHERLINE® Cat.5e FLEX
Flexible use



Norm references / Approvals

- PVC version with UL/CSA (CMG) certification
- PUR versions: UL AWM Style 21576
- Flame-retardant according IEC 60332-1-2
- Cable with PUR or halogenfree compound: Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)

Product Make-up

- Stranded conductor, bare, 7-wire
- Core insulation made of foam skin
- 2 or 4-pair version
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- Outer sheath as either PUR or LSZH
- Colour: water blue (RAL 5021)
- PVC jacket colour: green (based on RAL 6018)

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version					
Halogen-free jacket					
2170280	ETHERLINE® H CAT.5e	2 x 2 x AWG24/1	6.1	22	45
PUR outer sheath, halogen-free					
2170281	ETHERLINE® P CAT.5e	2 x 2 x AWG24/1	6.1	22	53
4-pair version					
Halogen-free jacket					
2170296	ETHERLINE® H CAT.5e	4 x 2 x AWG24/1	6.3	32	54
2170298	ETHERLINE® H-H CAT.5e	4 x 2 x AWG24/1	6.3 / 8.3	32	80
PUR outer sheath, halogen-free					
2170297	ETHERLINE® P CAT.5e	4 x 2 x AWG24/1	6.3	32	62

Accessories

- Field-Terminable Connector RJ45 CAT.5e FM45 contact Treotham for more information
- EPIC® DATA AX RJ45 Cat.6_A refer to page 87
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 88

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version					
Halogen-free jacket					
2170283	ETHERLINE® H Flex CAT.5e	2 x 2 x AWG26/7	5.9	19	43
PUR outer sheath, halogen-free					
2170284	ETHERLINE® P Flex CAT.5e	2 x 2 x AWG26/7	5.9	19	45
4-pair version					
Halogen-free jacket					
2170299	ETHERLINE® H Flex CAT.5e	4 x 2 x AWG26/7	6.3	25	48
PUR outer sheath, halogen-free					
2170300	ETHERLINE® P Flex CAT.5e	4 x 2 x AWG26/7	6.3	25	54
PVC outer sheath					
2170486	ETHERLINE® Y Flex CAT.5e	4 x2 x AWG26/7	6.4	30	54

Accessories

- Field-Terminable Connector RJ45 CAT.5e FM45 contact Treotham for more information
- EPIC® DATA AX RJ45 Cat.6_A refer to page 87
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 88

Ethernet cables

Industrial Ethernet cable Cat.5/ Cat.5e • PROFINET Type B - flexible application



ETHERLINE® PN Flex

Flexible use



Benefits

- For PROFINET applications type B
- Can be used in dry or damp rooms
- Screened against interference
- Can be used for Industrial Ethernet in harsh industrial environments
- 2pair: 10/100 Mbit/s for Industrial Ethernet

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 is 85 m
- Suitable for EtherCAT and EtherNet/IP applications
- For flexible applications (7-wire stranded conductor)

Product features

- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- CAT.5-Performance
- FRNC Version: Halogene free and flame retardant
- Fast Connect (FC) cable design

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)
- ETHERLINE® PN Cat.5 Y FLEX FC:ECOLAB®
- Industry standard for innovation and efficiency in the field of professional cleaning and disinfection

Product Make-up

- Stranded 7-wire bare conductor
- Core insulation: PE
- Star quad
- Inner sheath made of PVC or FRNC
- Overall screening with copper braid and plastic-laminated aluminium foil
- PVC or FRNC jacket material
- Colour: green (based on RAL 6018)

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC jacket					
2170886	ETHERLINE® PN Cat.5 Y FLEX FC	2 x 2 x AWG22/7	6.8	31.3	67
FRNC outer sheath					
2170890	ETHERLINE® PN Cat.5 FRNC FLEX FC	2 x 2 x AWG22/7	6.8	31.2	65

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
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 are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA PN AX RJ45 refer to page 87
- EPIC® DATA PN 90 RJ45 refer to page 86

FC STRIP stripping tool

Benefits

- Ready-to-connect stripping - outer sheath and copper screening braid are stripped in one simple step
- Prevents cable damage
- Adjusting screws enable the tool to be adjusted for all Fast Connect cables

Application range

- Two-level dismantling tool for Fast Connect conductors with an outer diameter
- 2,5-8,0 mm

Suitable cables

- ETHERLINE® PN Flex

Article number	FC STRIP stripping tool	Suitable for
FC STRIP stripping tool		
21124030	FC STRIP incl. blade	Fast Connect cables
21124040	FC STRIP without blade	
21124041	FC STRIP blade cartridge	



Technical data

- ETIM 5.0 Class-ID: EC001583
- ETIM 5.0 Class-Description: Accessories for bus system



ETHERLINE® Cat.6_A

Fixed installation

- Industrial Ethernet cable
- For PROFINET applications with 4 pairs
- CAT.6_A qualified for 10Gbit/s

Technical data

- ETIM 5.0 Class-ID: EC000830
- ETIM 5.0 Class-Description: Data cable
- Peak operating voltage** (not for power applications) 125 V
- Minimum bending radius** Fixed installation: 10 x outer diameter
- Characteristic impedance** 100 ohm at 1 - 100 MHz
- 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	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Halogen-free jacket					
2170466	ETHERLINE® Cat.6 _A H	4 x 2 x AWG22/1	9.0	53	99
PUR outer sheath, halogen-free					
2170465	ETHERLINE® Cat.6 _A P	4 x 2 x AWG22/1	9.0	53	91
PVC outer sheath					
2170464	ETHERLINE® Cat.6 _A Y	4 x 2 x AWG22/1	9.0	53	98



ETHERLINE® Cat.7 FLEX

Flexible use

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

Technical data

- ETIM 5.0 Class-ID: EC000830
- ETIM 5.0 Class-Description: Data cable
- Peak operating voltage** (not for power applications) 125 V
- Minimum bending radius** Fixed installation: 4 x outer diameter Flexing: 10 x outer diameter
- Characteristic impedance** nom. 100 ohm according to IEC 61156-6
- Temperature range** Fixed installation: -40°C to +80°C Flexing: -50°C to +80°C

Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to page 87
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 88
- EPIC® DATA M12X refer to page 90

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

Industrial Ethernet cables Cat.7 • Industrial Ethernet Cat.7 - Various applications



ETHERLINE® Cat.6_A

Fixed installation



Benefits

- Can be used in dry or damp rooms
- Screened against interference
- Can be used for Industrial Ethernet in harsh industrial environments
- 4pair: 100Mbit/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
- Wiring of machines, tools, devices, appliances and control cabinets
- Max. cable length for 100 Mbit/s is 100 m max. cable length for 10 Gbit/s is 100 m
- Suitable for EtherCAT and EtherNet/IP applications

Product features

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

Product Make-up

- Solid bare copper wire AWG22
- Core insulation made of polyethylene (PE)
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Colour: green (based on RAL 6018)

ETHERLINE® Cat.7 FLEX

Flexible use



Benefits

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

Application range

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

Product features

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

Ethernet cables

Industrial Ethernet • Industrial Ethernet for special applications



ETHERLINE® FIRE Cat.5e PH120

Fire integrity up to 120 minutes



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

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D

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
- F/UTP: foil screening as overall screening
- Halogen-free and flame-retardant FRNC outer sheath, colour: red (similar to RAL3000)

Info

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

Technical data

	ETIM 5.0 Class-ID: EC000829 ETIM 5.0 Class-Description: Signal-/telecommunications cable
	Peak operating voltage (not for power applications) 125 V
	Minimum bending radius Fixed installation: 15 x outer diameter
	Characteristic impedance 100 Ohm +- 15%
	Temperature range Operation: -20 °C to +70 °C

Treotham also has a full range of EPIC® connectors to suit our range of cables



Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to page 87
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 88
- EPIC® DATA M12X refer to page 90

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Ethernet cables

Ethernet Cables for structured building cabling • Cables for fixed installation



UNITRONIC® LAN 250 - Cat.6

Fixed installation



Info

- PVC or Halogen-free outer sheath
- Solid conductor
- 250 MHz

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Minimum bending radius During installation: 8 x outer diameter Fixed installation: 4 x outer diameter
	Characteristic impedance 100 Ohm +- 15%
	Temperature range Operating temperature: -20 °C to +60 °C During installation: 0 °C to +50 °C

Benefits

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

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Product features
- Transfer of digital and analogue data signals
- LAN Cat.6 cables are specified up to 350 MHz
- IEEE 802.3: 10/100/1000Base-T
IEEE 802.5: ISDN; FDDI; ATM

Norm references / Approvals

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

Product Make-up

- Solid conductor
- U/UTP: no overall or pair shielding
- F/UTP: foil screening as overall screening
- Outer sheath either as PVC (color grey RAL1015) or LSZH (color orange RAL2003)

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC versions					
2170186	250 U/UTP Cat.6	4 x 2 x AWG24/1	6.5	18	46
Halogen-free versions					
2170193	250 U/UTP Cat.6 LSZH	4x2xAWG24/1	6,5	18	46
2170194	250 F/UTP Cat.6 LSZH	4x2xAWG24/1	7,5	19	54

UNITRONIC® LAN UTP 250 - Cat.6

Fixed installation

Technical Data

	Core identification code Pair 1: blue + white/blue Pair 2: orange + white/orange Pair 3: green + white/green Pair 4: brown + white/brown
	Mutual capacitance max 56.0 pF/m (core-cor)
	Minimum bending radius Fixed installation: 4 x cable diame
	Temperature range -20 °C to +70 °C
	Characteristic impedance 100 +/-15 Ohm at 100 MHz

Application range

- Data transfer for horizontal network backbone for wiring office administration and development buildings
- Cable run should not exceed 100 m in acc. to ISO/IEC 11801 and EN 50173

Product features

- Transmission rate up to 250 MHzHF
flame retardant acc. to IEC 60332-1-2H
Halogen free acc. to IEC 60754-1 (for Halo-genfree outer sheath only)

Norm references / Approvals



- Product Make-up
- Solid bare conductor
- PE core insulation
- PVC or Halogen-free outer sheath
- Colour: pebble grey, RAL 7032
- Packaging: 305 m/box

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
3801501K	LAN 250 UTP CAT.6	4x2x23 AWG	6.4	17.9	40.0
3804000K	LAN 250 UTP-H CAT.6	4x2x23 AWG	6.4	17.9	40.0

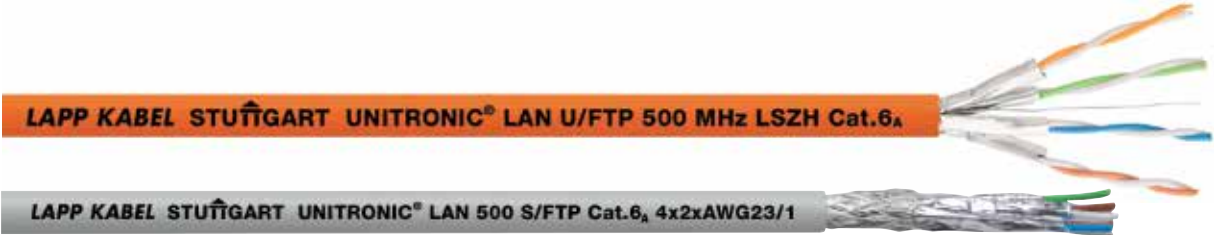
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ETHERNET cables

Ethernet cable for structured building cabling • Cables for fixed installation

UNITRONIC® LAN 500 - Cat.6_A
Fixed installation



Benefits

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

Application range

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

Product features

- Transfer of digital and analogue data signals
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T IEEE 802.5: ISDN; FDDI; ATM

Norm references / Approvals

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

Product Make-up

- Solid conductor
- U/FTP: aluminium compound foil as pair screening
- F/FTP: aluminium compound foil as overall screening and pair screening
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil • Outer sheath either as PVC (color grey RAL1015) or LSZH (color orange RAL2003)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Minimum bending radius during installation: 8 x outer diameter Fixed installation: 4 x outer diameter
	Characteristic impedance 100 Ohm +- 15%
	Temperature range Operating temperature: -20°C to +60°C During installation: 0 °C to +50 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC version					
2170143	500 S/FTP Cat.6 _A	4 x 2 x AWG23/1	7.7	27	58
Halogen-free versions					
2170195	500 U/FTP Cat.6 _A LSZH	4 x 2 x AWG23/1	7.4	21	52
2170196	500 F/FTP Cat.6 _A LSZH	4 x 2 x AWG23/1	7.6	22	56

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 100 m; Drum (500; 1000) m
CAT.6a is available as a draft
Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to page 88
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 88



ETHERNET cables

Ethernet cable for structured building cabling • Cables for flexible applications

UNITRONIC® LAN FLEX
Flexible use



Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Minimum bending radius during installation: 8 x outer diameter Fixed installation: 4 x outer diameter
	Characteristic impedance 100 Ohm +- 15%
	Temperature range Operating temperature: -20°C to +60°C During installation: 0 °C to +50 °C

Benefits

- For directly connecting two electric components
- Easy to assemble

Application range

- ndoor applications
- LAN connections
- Control cabinet wiring

Product features

- Good flexibility - easy installation with tight space requirements

Product Make-up

- F/UTP: foil screening as overall screening
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath either as PVC or LSZH (color grey RAL 7035)

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC versions					
2170127	200 F/UTP Cat.5e	4 x 2 x AWG26/7	5.6	13	28
2170129	200 SF/UTP Cat.5e	4 x 2 x AWG26/7	6.0	22	36
2170144	600 S/FTP CAT7 Y	4 x 2 x AWG26/7	6.5	22	39
Halogen-free versions					
2170172	200 F/UTP Cat.5e LSZH	4 x 2 x AWG26/7	5.6	13	28
2170139	200 SF/UTP Cat.5e LSZH	4 x 2 x AWG26/7	6.0	22	36
2170142	600 S/FTP CAT7 LSZH	4 x 2 x AWG26/7	6.2	21	40

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

Accessories

- Field-Terminable Connector RJ45 CAT.5e FM45 contact Treotham for more information
- EPIC® DATA AX RJ45 Cat.6_A refer to page 88
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 88

ETHERNET cables

Ethernet cable for structured building cabling • Cables for flexible applications

UNITRONIC® ST 2919 FPE

Flexible use

Application range

- Designed for use as a Data Highway (DH) RS 232, RS 422 and RS 485 interface
- Suitable for static laying in dry and damp conditions.

Product features

- Low capacitance
- 100% screen coverage, offers optimum protection against external interference at medium and high frequencies
- Flexible for use in environment where space is a constraint
- Flame retardant in acc. to IEC 60332-1-2
- Approvals (Norm references)



Product Make-up

- Multi-wire strands tinned copper wires
- Foam PE core insulation Cores twisted together
- Overall screening of Aluminium laminated plastic foill
- Overall screening of aluminium laminated plastic foil
- Colour: chrome grey, RAL 7005
- Tinned copperdrain wire
- PVC outer sheath
- Core insulation colour:
- Pair 1 wh/bu stripe + bu/wh stripe
- Pair 2 wh/og stripe + og/wh stripe
- Pair 3 wh/gn stripe + gn/wh stripe
- Pair 4 wh/bn stripe + bn/wh stripe
- Pair 5 wh/gy stripe + gn/wh stripe
- Pair 6 rd/bu stripe + bu/rd stripe
- Pair 7 rd/og stripe + og/rd stripe
- Pair 8 rd/gn stripe + gn/rd stripe
- Pair 9 rd/bn stripe + bn/rd stripe
- Pair 10 rd/gy stripe + gy/rd stripe
- Pair 11 bk/bu stripe + bu/bk stripe
- Pair 12 bk/og stripe + og/bk stripe
- Single conductor: Grey

Technical data

- Mutual Capacitance**
C/C: approx. 42 pF/m
C/S: approx. 72 pF/m
- Peak operating voltage**
30 V (not for power applications)
- Specific insulation resistance**
> 2 GOhm x km
- Inductivity**
approx. 0.7 mH/km
- Minimum bending voltage**
10 x cable diameter
- Test voltage**
1000 V
- Temperature Range**
-30°C to + 80°C
- Characteristic impedance**
100 Ohm

Article number	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
3800950	2 x 2 x 24 AWG	6.3	10.5	46
3804943	3 x 2 x 24 AWG	6.65	14.7	42.9
3800951	4 x 2 x 24 AWG	7.1	19.0	55
3804946	6 x 2 x 24 AWG	8.1	27.3	74.9
3804947	12 x 2 x 24 AWG + 1 x 24 AWG	10.6	54.6	121.7

UNITRONIC® ST 2919 PE

Flexible use

Application range

- Suitable for wiring of data systems with high transmission rates
- Designed for use as RS 232, RS 422 and RS 485 interface
- Suitable for use as control and instrumentation cables.
- Suitable for flexible and static laying in dry and damp locations

Product features

- 100% screen coverage, offers optimum protection against external interference at medium and high frequencies
- Low capacitance, double screened
- Excellent shielding against internal and external interference

Approvals (Norm references)



Product Make-up

- Multi-wire strands tinned copper wires
- PE core insulation
- Twisted pairll
- Aluminium / mylar
- Tinned copper drain wire
- Tinned copper braiding
- PVC outer sheath
- Colour: pebble grey, RAL 7032
- Colour: chrome grey, RAL 7005

Technical data

- Mutual Capacitance**
C/C: approx. 42 pF/m
C/S: approx. 72 pF/m
- Peak operating voltage**
30 V (not for power applications)
- Specific insulation resistance**
> 2 GOhm x km
- Inductivity**
approx. 0.7 mH/km
- Minimum bending voltage**
10 x cable diameter
- Test voltage**
1000 V
- Temperature Range**
-30°C to + 80°C
- Characteristic impedance**
100 Ohm

Article number	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
3800765	1 x 2 x 24 AWG	5.9	21.3	46
3800953	2 x 2 x 24 AWG	8.8	32.9	86
3804582	1 x 2 x 22 AWG	6.8	28.7	62



ETHERNET cables

Ethernet cable for structured building cabling • Cables for flexible applications

UNITRONIC® ST 20276

Flexible use



Technical data

- Core identification**
black/red and white/green
- Mutual capacitance**
C/C: approx. 115 pF/m
C/C: approx. 203 pF/m
- Peak operating voltage**
30 V
- Specific insulation resistance**
>2 GOhm x km
- Inductivity**
approx. 0.55mH/km
- Minimum bending radius**
10 x cable diameter
- Test voltage**
1000 V
- Temperature Range**
-20°C to + 60°C

Application range

- Suitable for wiring of data systems with high transmission rates
- Especially designed for use as control and instrumentation cables.
- For static laying in dry and damp environment

Product features

- Pair screening offers optimum protection against external interference at medium and high frequencies
- Twisted cores and individual pair shielding ensures high Near End Cross Talk attenuation
- Flame retardant in acc. IEC 60332-1-2

Approvals (Norm references)



Product Make-up

- Multi-wire strands tinned copper wires
- PE core insulation
- Cores twisted together
- Individual pair aluminium foil screening
- Tinned copper drain wire
- PVC outer sheath
- Colour: chrome grey, RAL 7005

Article number	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
3800952	2 x 2 x 22 AWG	4.3	20.5	28.1





EPIC® DATA PN AX RJ45



Product features

- For PROFINET applications
- Housing: zinc die-casting, grey
- By a multi-level relief setting the connector can accommodate a cable diameter from 5,0 mm up to 9,0 mm
- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG24/1- 22/1
- Suitable for use in industrial applications
- Colour-coded in accordance with PROFINET for Cat.5 applications

Norm references / Approvals

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- UL-listed (E-File E353543)



info

- For PROFINET applications
- Installation without tools

Technical data

	ETIM 5.0 Class-ID: EC002641 ETIM 5.0 Class-Description: Modular connector (industrial connector)
	Protection rating IP 20
	Ambient temperature (operation) -40°C to +85°C

Article number	Article designation	Min. outer diameter (mm)	Max. outer diameter (mm)	Min. Core diameter in mm	Max. Core diameter in mm	AWG solid	AWG 7-wire
EPIC® DATA PN AX RJ45							
21700605	ED-IE-AX-5-PN-20-FC	5	9	1.6	1	24 - 22	27 - 22



EPIC® DATA PN 90 RJ45



Info

- For PROFINET applications
- Installation without tools
- 4 different angled cable outlets possible

Technical data

	ETIM 5.0 Class-ID: EC001121 ETIM 5.0 Class-Description: Modular connector
	Protection rating IP 20
	Ambient temperature (operation) -40°C to +85°C

Product features

- For PROFINET applications
- Cable outlet in 4 different 90° angles possible
- Housing: zinc die-casting, grey
- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG24/1- 22/1
- Suitable for use in industrial applications
- Colour-coded in accordance with PROFINET for Cat.5 applications

Norm references / Approvals

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- UL-listed (E-File E353543)

Article number	Article designation	Min. outer diameter (mm)	Max. outer diameter (mm)	Min. Core diameter in mm	Max. Core diameter in mm	AWG solid	AWG 7-wire
EPIC® DATA PN 90 RJ45							
21700638	ED-IE-90-6 _A -PN-20-FC	5,5	10	1	1,6	24 - 22	27 - 22



EPIC® DATA AX RJ45 Cat.6_A



info

- CAT.6_A qualified for 10Gbit/s
- Installation without tools

Technical data

	ETIM 5.0 Class-ID: EC001121 ETIM 5.0 Class-Description: Modular connector
	Protection rating IP 20
	Ambient temperature (operation) -40°C to +85°C

Product features

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- Qualified for 10 Gigabit Ethernet
- Housing: zinc die-casting, grey
- By a multi-level relief setting the connector can accommodate a cable diameter from 5,0 mm up to 9,0 mm

- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG24/1- 22/1
- Suitable for use in industrial applications
- Available with colour code T568A or T568B

Norm references / Approvals

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- UL-listed (E-File E353543)

Article number	Article designation	Min. outer diameter (mm)	Max. outer diameter (mm)	Min. Core diameter in mm	Max. Core diameter in mm	AWG solid	AWG 7-wire	AWG 19-wire
RJ45 connector acc. to T568A								
21700600	EPIC® DATA ED-IE-AX-6 _A -A-20-FC	5	9	1	1.6	24 - 22	27 - 22	
RJ45 connector acc. to T568A, specifically for cables with 19-wire cores								
21700615	EPIC DATA ED-IE-AX-6 _A -A-20-FD-FC	5	9	0.85	1.1	26 - 24	27 - 24	26
RJ45 connector acc. to T568B								
21700601	EPIC® DATA ED-IE-AX-6 _A -B-20-FC	5	9	1	1.6	24 - 22	27 - 22	
RJ45 connector acc. to T568B, specifically for cables with 19-wire cores								
21700616	EPIC DATA ED-IE-AX-6 _A -B-20-FD-FC	5	9	0.85	1.1	26 - 24	27 - 24	26



Product features

- Field assembly Industrial Ethernet module RJ45 according to IEC 60603-7-51
- Qualified for 10 Gigabit Ethernet
- Housing: zinc die-casting, grey
- By a multi-level relief setting the connector can accommodate a cable diameter from 5,0 mm up to 9,0 mm
- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG26/1- 22/1
- Suitable for use in industrial applications
- Available with colour code T568A or T568B

Norm references / Approvals

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- UL-listed (E-File E353543)

EPIC® DATA RJ45F Cat.6_A
RJ45 female connector



Technical data

	ETIM 5.0 Class-ID: EC001121 ETIM 5.0 Class-Description: Modular connector
	Protection rating IP 20
	Ambient temperature (operation) -40°C to +70°C

Article number	Article designation
RJ45 Modul acc. to T568A	
21700611	ED-IE-AX-RJ45F-6 _A -A-FC
RJ45 Modul acc. to T568B	
21700612	ED-IE-AX-RJ45F-6 _A -B-FC



EPIC® DATA 90 RJ45 Cat.6_A



- Product features**
- Cable outlet in 4 different 90° angles possible
 - Qualified for 10 Gigabit Ethernet
 - Housing: zinc die-casting, grey
 - Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG24/1- 22/1
 - Suitable for use in industrial applications
 - Available with colour code T568A or T568B

- Norm references / Approvals**
- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
 - UL-listed (E-File E353543)

Article number	Article designation	Min. outer diameter (mm)	Max. outer diameter (mm)	Min. Core diameter in mm	Max. Core diameter in mm	AWG solid	AWG 7-wire	AWG 19-wire
RJ45 connector acc. to T568A								
21700636	ED-IE-90-6 _A -A-20-FC	5.5	10	1	1.6	24 - 22	27 - 22	
RJ45 connector acc. to T568A, specifically for cables with 19-wire cores								
21700639	ED-IE-90-6 _A -A-20-FD-FC	5.5	10	0.85	1.1	26 - 24	27 - 24	26
RJ45 connector acc. to T568B								
21700637	ED-IE-90-6 _B -B-20-FC	5.5	10	1	1.6	24 - 22	27 - 22	
RJ45 connector acc. to T568B, specifically for cables with 19-wire cores								
21700640	ED-IE-90-6 _A -B-20-FD-FC	5.5	10	0.85	1.1	26 - 24	27 - 24	26

EPIC® DATA AX RJ45 Cat.6_A IP68
RJ45 connector in IP68 housing



- Product features**
- Housing: brass nickel plated
 - Qualified for 10 Gigabit Ethernet
 - Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG26/1- 22/1
 - Multi-level relief setting the connector can accommodate a cable diameter from 5,0 mm up to 9,0 mm

- Norm references / Approvals**
- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
 - UL-listed (E-File E353543)

Article number	Article designation
circular connector (male) inclusive RJ45 connector	
21700630	ED-IE-AX-RJ45-6 _A -B-68-FC
dust cap for RJ45 connector	
21700631	ED-IE-AX-RJ45-AC-DC
circular bulkhead housing inclusive RJ45 Modul acc. to T568B	
21700632	ED-IE-RJ45F-6 _A -B-68-FC
dust cap for RJ45 Modul	
21700633	ED-IE-RJ45F-AC-DC



EPIC® DATA HS RJ45F Cat.6_A
Cat.6_A rail mount adapter



Technical data	
	ETIM 5.0 Class-ID: EC001121 ETIM 5.0 Class-Description: Modular connector
	Protection rating IP 20
	Ambient temperature (operation) -40°C to +70°C

- Product features**
- Plastic housing including Easy Connect RJ45 Modul Cat.6_A 10G
 - Suitable for use in industrial applications
 - Integrated strain relief for cable O.D. to 9 mm
 - Colour: light grey (RAL 7035)
 - Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG26/1- 22/1

- Norm references / Approvals**
- Field assembly Industrial Ethernet module RJ45 according to IEC 60603-7-51

Article number	Article designation
Inclusive RJ45 Modul acc. to T568A	
21700613	EPIC DATA HS RJ45 F 10G A
Inclusive RJ45 Modul acc. to T568B	
21700614	EPIC DATA HS RJ45 F 10G B

Data communication systems for ETHERNET technology
Connectors for industrial cabling • M12 Field mountable connectors and wall ducts



- info**
- CAT.5-Performance
 - Installation without tools

Technical data	
	Protection rating IP 67
	Ambient temperature (operation) Plug/socket -40°C to +85°C

- Product features**
- Field assembly Industrial Ethernet connector, M12 D-coded according to IEC 61076-2-101
 - Suitable for use in industrial applications
 - Robust and vibrations- resistant
 - Insulation displacement contacts for conductor diameter of AWG26 - AWG22; max. outer diameter 8 mm
 - Toolfree installation, small and compact design

- Norm references / Approvals**
- Data transmission is conform to category Cat.5 acc. to ISO 11801

Article number	Article designation
PROFINET/ETHERNET, 4-pin straight connector, fast-connection	
22260820	AB-C4-M12MSD-SH
PROFINET/ETHERNET, 4-pin straight socket, fast-connection	
22261016	AB-C4-M12FSD-SH

ETHERNET Connectors

Connectors for industrial cabling • M12 Field mountable connectors and wall ducts



EPIC® DATA M12X

M12 X-coded connectors



Product features

- Field assembly Industrial Ethernet connector, M12 X-coded according to IEC 61076-2-109
- Qualified for 10 Gigabit Ethernet
- Suitable for use in industrial applications
- Robust and vibrations-resistant
- Housing: zinc die-casting, grey
- Insulation displacement contacts for conductor diameter of AWG27/7 - AWG22/7 and AWG24/1 - AWG22/1; max. outer diameter 9,7 mm
- Toolfree installation, small and compact design

Norm references / Approvals

- Acc. to standard IEC 61076-2-109
- Data transmission is conform to category Cat.6_A acc. to ISO/IEC 11801:2010

info

- CAT.6_A qualified for 10Gbit/s
- Installation without tools

Technical data

ETIM 5.0 Class-ID: EC002635
ETIM 5.0 Class-Description: Circular connector (industrial connector)

Protection rating
IP 67

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

Article number	Article designation
M12 x-coded male connector straight	
21700602	ED-IE-AX-M12X-6 _A -67-FC
M12 x-coded female connector straight	
21700621	ED-IE-AX-M12XF-6 _A -67-FC
M12 x-coded female connector straight for wall mounting	
21700622	ED-IE-AX-M12XF-RM-6 _A -67-FC

EPIC® DATA FT IE

Industrial Ethernet feed through



Product features

- Designs for front and rear wall-mounting
- M12 panel feed-throughs for direct connecting with PCB
- Can be used for Industrial Ethernet in harsh industrial environments
- Housing: zinc die-casting, grey

Norm references / Approvals

- Acc. to standard IEC 61076-2
- D-coded: Cat.5 acc. to ISO 11801
- X-coded: Cat.6_A acc. to ISO 11801

Technical data

ETIM 5.0 Class-ID: EC001121
ETIM 5.0 Class-Description: Modular connector

Protection rating
IP 67

Ambient temperature (operation)
-25°C to +85°C

Article number	Article designation
M12 feed through, socket on socket, D-coded	
22262022	AB-C4-DSI-M12FSD-M12FSD-M16-SH
M12 flush-type connector socket for front-mounting, X-coded	
21700617	ED-IE-M12F-X-FM
M12 flush-type connector socket for rear-mounting, solder contacts, X-coded	
21700618	ED-IE-M12F-X-RM



info

- Lapp Kabel is a member of the PROFIBUS User Organisation (PNO)
- A for Advanced here: UL and CSA certifications

Technical data

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

Mutual capacitance
(800 Hz): max. 30 nF/km

Peak operating voltage
(not for power applications) 250 V

Conductor resistance
(loop): max. 186 Ohm/km.
See also datasheet

Minimum bending radius
Fixed installation: see data sheet

Test voltage
Core/core: 1500 V rms

Characteristic impedance
150 ± 15 Ohm

Application range

- For fixed installation
- Maximum electromagnetic screening
- Dry or damp rooms
- Item nos. 2170233, 2170333, 2170820, 2170824, 2170826 are all UV-resistant

Product features

- These bus cables can be used for PROFIBUS-DP as well as for PROFIBUS-FMS and FIP
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m

PROFIBUS cables & Connectors

Bus system PROFIBUS-DP/FMS/FIP • Fixed installation



UNITRONIC® BUS PB

Fixed installation



Norm references / Approvals

- In accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC NET, also suitable for FIP (Factory Instrumentation Protocol)
- See below for UL certification type

Product Make-up

- FC: "Fast Connect" cable design
- P: Polyurethane
- H: Halogen-free
- PE: polyethylene, black Outer sheath, e.g. for the food and beverage industry
- 7-W: 7-wire, e.g. for applications where vibrations occur
- COMBI: Data transmission and power supply in one cable

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For fixed installation - conventional cable assembly					
2170220	UNITRONIC® BUS PB	1 x 2 x 0.64	8	30.1	74
2170233	UNITRONIC® PB PE	1 x 2 x 0.64	8	30.1	57
2170226	UNITRONIC® BUS PB H 7-W	1 x 2 x 0.64	8	30.1	55
2170225	UNITRONIC® BUS PB COMBI 7-W	1 x 2 x 0,64 Ø + 3 x 1,0 mm ²	9.8	59	92
For fixed installation - UL/CSA CMX certification					
2170219	UNITRONIC® BUS PB A	1 x 2 x 0.64	8	30.1	57
For fixed installation - UL/CSA CMG certification					
2170824	UNITRONIC® BUS PB 7-W A	1 x 2 x 0.64	8	30.1	55
For fixed installation - "Fast Connect" cable assembly					
2170333	UNITRONIC® BUS PB PE FC	1 x 2 x 0.64	8	26	67
For fixed installation - UL/CSA CMX certification					
2170330	UNITRONIC® BUS PB P FC	1 x 2 x 0.64	8	26	71
For fixed installation - "Fast Connect" cable assembly - UL/CSA CMG certification					
2170820	UNITRONIC® BUS PB FC	1 x 2 x 0.64	8	26	84
2170826	UNITRONIC® BUS PB 7-W FC	1 x 2 x 0.64	8	26	67
2170326	UNITRONIC® BUS PB-H FC	1 x 2 x 0.64	8	26	72



EPIC® DATA PB M12
Field mountable M12 BUS-connectors, shielded for PROFIBUS



- Benefits**
- Quick and easy on-site assembly
 - For creating of individual cable lengths
 - Cost efficient and rational wiring for BUS installations
 - Space-saving due to compact dimensions

- Product features**
- Screened version
 - Connector M12, B-coded
 - PG9- / PG11-thread
 - Screw connection

- Suitable cables**
- Bus system PROFIBUS-DP/FMS/FIP
 - UNITRONIC® BUS PB M12 Page 352

Technical data

ETIM ETIM 5.0 Class-ID: EC002062
ETIM 5.0 Class-Description: Sensor-actuator connector

Material
Contact: CuSn
Contact surface: Au
Contact carrier: PA66
Sealing: NBR
Knurl: Nickel-plated brass
Gripping body: Zinc die-cast, nickel-plated

IP **Protection rating**
IP67

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

Coding
B - inverse (PROFIBUS)

Rated current (A)
4 A

Article number	Article designation	Number of pins	Cross-section in mm²	Cable diameter in mm	Rated voltage (V)	PU
Plug, straight						
22260653	AB-C5-M12MSB-PG9-SH-AU	5	0.25 - 0.75	6 - 8.5	60	1
22262078	AB-C5-M12MSB-PG11-SH-AU	5	0.25 - 0.75	8 - 10	60	1
Socket, straight						
22260646	AB-C5-M12FSB-PG9-SH-AU	5	0.25 - 0.75	6 - 8.5	60	1
22260889	AB-C5-M12FSB-PG11-SH-AU	5	0.25 - 0.75	8 - 10	60	1

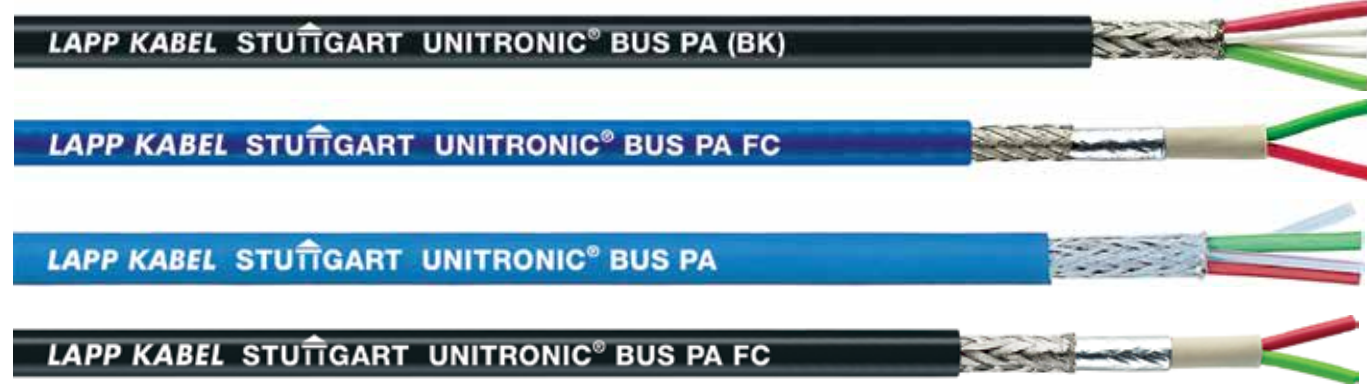
Photographs are not to scale and do not represent detailed images of the respective products.



UNITRONIC® BUS PA
PROFIBUS Connectors Fast Connect

info

- PA = Process Automation
- Variant with UL/CSA CMG



Technical data

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

Peak operating voltage
(not for power applications) 250 V

Conductor resistance
(loop): max. 186 Ohm/km.

Minimum bending radius
Fixed installation: see data sheet

Test voltage
Core/core: 1500 V rms

Characteristic impedance
150 ± 15 Ohm

Temperature range
Fixed installation:
-30° C to +80° C
During installation: -5° C to +50° C

- Benefits**
- FC (Fast Connect) version is oil and UV-resistant
- Application range**
- Process-automation application for connecting sensors and actuators -including areas with risks of explosion.
 - Fixed installation

- Product features**
- Bit rate = 31.25 kbit/s. Transmission technology RS485 also possible but bit rate is limited to 1.5 Mbit/s
 - Maximum cable length is dependent on several factors (e.g. supply voltage, current demand).
 - Technical Data: refer to the overview on “UNITRONIC® Bus Cables”
 - Flame-retardant according IEC 60332-1-2

- Norm references/Approvals**
- PROFIBUS® PA is standardised in EN 50170 as PROFIBUS® DP and PROFIBUS® FMS
 - Transmission technology for PROFIBUS-PA in accordance with international standard IEC 61158-2
 - FC variant with
 - UL/CSA certification (CMG / PLTC)

- Product Make-up**
- UNITRONIC® BUS PA (BU/BK)
 - Stranded conductor, core colours: red and green, copper braiding, PVC sheath, colour: blue (intrinsically safe area), colour: black (non-intrinsically safe area) UNITRONIC® BUS PA FC (BU/BK)
 - Solid core, UL/CSA CMG certification and “Fast Connect” cable design, which enables rapid connection of the IDC connector (Insulation Displacement Connection).

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For fixed installation - conventional cable assembly					
2170234	UNITRONIC® BUS PA (BU)	1 x 2 x 1.3	8	45	84
2170235	UNITRONIC® BUS PA BK	1 x 2 x 1.3	8	45	84
For fixed installation - “Fast Connect” cable assembly - UL CSA CMG certification					
2170334	UNITRONIC® BUS PA FC (BU)	1 x 2 x 1	8	45.5	103
2170335	UNITRONIC® BUS PA FC BK	1 x 2 x 1	8	45.5	103

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 T 17 for the definition and calculation of copper-related surcharges. Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil H80 kg or H850 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
SIMATIC® is a registered trademark of Siemens AG
Armoured
Photographs are not to scale and do not represent detailed images of the respective products.



PROFIBUS cables & Connectors

Bus system PROFIBUS-DP/FMS/FIP • Sub-D Bus-Connectors



EPIC® DATA PB Sub-D

PROFIBUS connectors with screw terminals | REPEATER function | ATEX



Benefits

- Easy connection with proven screw clamp connection
- Compact design: small space requirements
- Terminating resistor (integrated) can be switched
- REPEATER version: Regeneration of data signal (slope, power and mark-to-space ratio)
- ATEX version: For use within intrinsically-safe circuits in zone 2 areas with an explosion hazard (explosive gas atmosphere occurs only rarely and briefly)

Product features

- Max. transmission rate 12 Mbit/s possible
- Current consumption max. 12,5 mA (with LED 35 mA / REPEATER 100 mA)
- Supply voltage 4.75 - 5.25 V DC (supplied from the terminal)
- Terminating resistor "ON" - the outbound bus cable is disconnected
- REPEATER version: Easy extension of the PROFIBUS network:
 - up to 3 repeaters
 - 1 additional PROFIBUS segment
 - galvanic isolation

Norm references / Approvals

- IEC 61158, IEC 61784
- UL File: E331560
- ATEX version: DIN EN 60079-0:2006, DIN 60079-15:2005 (category 3G zone 2)

Product Make-up

- D-Sub plug, 9-pin, fixing screws 4-40 UNC
- Improved electromagnetic compatibility (EMC) by metallized housing
- Versions with additional Sub-D interface for programming/diagnostic ('PG')
- For cable outer diameter: 5 - 8 mm
- LED Version indicate:
 - bus operation - (green)
 - station transmission - (blue)
 - terminating resistor "on" - (orange)

Suitable cables

- Bus system PROFIBUS-DP/FMS/FIP

Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt®



info

- Optional with LED diagnostic
- ATEX and REPEATER Version
- Versions with 2th Sub-D ports

Technical data



ETIM 5.0 Class-ID: EC001132
ETIM 5.0 Class-Description:
D-Sub connector



Dimensions
54 mm x 40 mm x 17 mm - 35°
64 mm x 40 mm x 17 mm - 90°
68 mm x 40 mm x 17 mm - 180°
(LxWxH)

Connection type
Screwing



Protection rating
IP20

Terminating resistor
150 W

Interfaces
PROFIBUS station:
D-Sub socket, 9-pin
PROFIBUS cable:
4 terminal blocks for wires
up to 1.0 mm²
(solid/flexible 7 / 19 wire)



Permissible ambient conditions
Operating temperature:
-25°C to +85°C
*The max. temperature for UL is 60 °C.

Article number	Article designation	Version	PG-Interface	Diagnostic LEDs	PU
35° cable outlet					
21700507	ED-PB-35		no	no	1
21700506	ED-PB-35-PG		yes	no	1
90° cable outlet					
21700504	ED-PB-90		no	no	1
21700503	ED-PB-90-PG		yes	no	1
21700530	ED-PB-90-LED		no	yes	1
21700529	ED-PB-90-PG-LED		yes	yes	1
21700541	ED-PB-90-RP-PG	REPEATER	yes	yes	1
21700543	ED-PB-90-ATEX	ATEX	no	no	1
21700542	ED-PB-90-PG-ATEX	ATEX	yes	no	1
180° (AX) cable outlet					
21700505	ED-PB-AX		no	no	1



info

- CAN = Controller Area Network

Technical data



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



Mutual capacitance
UNITRONIC® BUS CAN
(800 Hz): max. 40 nF/km
UNITRONIC® BUS CAN FD P
(800 Hz): max. 60 nF/km



Peak operating voltage
UNITRONIC® BUS CAN
(not for power applications) 250 V
UNITRONIC® BUS CAN FD P
250 V (not for power transmission)



Conductor resistance
UNITRONIC® BUS CAN
(loop): max. 186 ohm/km
UNITRONIC® BUS CAN FD P
(loop): max. 159.8 ohm/km



Minimum bending radius
UNITRONIC® BUS CAN
Fixed installation: 8 x outer diameter
UNITRONIC® BUS CAN FD P
Flexing: 15 x outer diameter



Test voltage
Core/core: 1500 V rms



Characteristic impedance
120 ohm



Temperature range
UNITRONIC® BUS CAN
Fixed installation:
-30°C to +80°C
Flexing: -5°C to +70°C
UNITRONIC® BUS CAN FD P
Fixed installation: -40°C to +80°C
Flexing: -30°C to +70°C

CAN BUS & Devicenet cables & Connectors

Bus system CAN / DeviceNet • CAN - Fixed installation and high flexibility application



UNITRONIC® BUS CAN

UNITRONIC® BUS CAN FD P

LAPP KABEL STUTTGART UNITRONIC® BUS CAN

LAPP KABEL STUTTGART UNITRONIC® BUS CAN FD P

Application range

UNITRONIC® BUS CAN

- Fixed installation

UNITRONIC® BUS CAN FD P

- For highly flexible applications

Product features

UNITRONIC® BUS CAN

- Maximum bit rate: 1 Mbit/s for 40 m segment length
 - Larger conductor cross-section is necessary with increasing length. Refer to the table below (reference values from ISO 11898).
 - ISO 11898 makes recommendations for the segment length, cable cross section and bit rate
 - Flame-retardant according IEC 60332-1-2
- UNITRONIC® BUS CAN FD P**
- Halogen-free outer sheath
 - Maximum bit rate: 1 Mbit/s for 40 m segment length
 - Larger conductor cross-section is necessary with increasing length. Refer to the table below (reference values from ISO 11898).
 - ISO 11898 makes recommendations for the segment length, cable cross section and bit rate
 - Flame-retardant according IEC 60332-1-2

Norm references / Approvals

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

Product Make-up

UNITRONIC® BUS CAN

- 0.22 + 0.34 + 0.5: bare stranded conductor, 7-wire
- 0.75: bare stranded conductor, fine-wire
- Colour-coded in accordance with DIN 47100

- Copper braid

- PVC sheath

- Colour: violet (RAL 4001)

UNITRONIC® BUS CAN FD P

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

Article number	Article designation	Number of pairs/ conductor cross section (mm²)	Outer diameter (mm)	Conductor resistance	Copper index (kg/km)	Weight (kg/km)
For fixed installation						
2170260	UNITRONIC® BUS CAN	1 x 2 x 0,22	5.7	186	16.7	42
2170261	UNITRONIC® BUS CAN	2 x 2 x 0,22	7.6	186	34.8	68
2170263	UNITRONIC® BUS CAN	1 x 2 x 0,34	6.8	115	25	55
2170264	UNITRONIC® BUS CAN	2 x 2 x 0,34	8.5	115	46.4	88
2170266	UNITRONIC® BUS CAN	1 x 2 x 0,5	7.5	78	41.6	90
2170267	UNITRONIC® BUS CAN	2 x 2 x 0,5	9.6	78	59.4	106
2170269	UNITRONIC® BUS CAN	1 x 2 x 0,75	8.7	52	52.7	108
2170270	UNITRONIC® BUS CAN	2 x 2 x 0,75	11.5	52	80.6	142
For highly flexible applications (power chains, moving machine parts)						
2170272	UNITRONIC® BUS CAN FD P	1 x 2 x 0,25	6.4	159.8	24	40
2170273	UNITRONIC® BUS CAN FD P	2 x 2 x 0,25	8.4	159.8	33	65
2170275	UNITRONIC® BUS CAN FD P	1 x 2 x 0,34	6.8	122	32.8	60
2170276	UNITRONIC® BUS CAN FD P	2 x 2 x 0,34	9.6	122	52.4	88
2170278	UNITRONIC® BUS CAN FD P	1 x 2 x 0,5	8	72.8	41.9	74
2170279	UNITRONIC® BUS CAN FD P	2 x 2 x 0,5	10.8	72.8	59.4	100



EPIC® DATA CAN Sub-D
CAN Bus-Connectors with screw connection



Benefits

- Terminating resistor (integrated) can be switched
- Compact design: small space requirements
- No loose parts
- With additional 24 V DC output to supply external devices (90° version only)

Product features

- Max. transmission rate 1 Mbit/s possible
- Terminating resistor “ON” - the outbound bus cable is disconnected
- The integrated, connectable terminating resistor enable the CAN-Bus to be terminated or connected through
- Sub-D pin assignment:
 - CAN Low = Pin 2
 - CAN High = Pin 7
 - CAN Gnd = Pin 3
 - GND = Pin 6 (90° version only)
 - CAN V+ = Pin 9 (90° version only) (shield = housing)

Norm references / Approvals

- UL File: E331560

Product Make-up

- D-Sub plug, 9-pin, fixing screws 4-40 UNC
- Screw connection
- Improved electromagnetic compatibility (EMC) by metallized housing
- For cable outer diameter: 5 - 8 mm

Suitable cables

- Bus system CAN / DeviceNet
- Bus system DeviceNet

Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 1078

Technical data

	ETIM 5.0 Class-ID: EC002640 ETIM 5.0 Class-Description: I/O connector
	Dimensions 60 mm x 40 mm x 17 mm - 90° 67,5 mm x 35 mm x 17 mm - 180° (LxWxH)
	Connection type Screwing
	Protection rating IP20
	Terminating resistor 120 W
	Interfaces <u>CAN bus station:</u> D-Sub socket, 9-pin <u>CAN bus cable:</u> 6 terminal blocks for wires up to 0.8 mm²
	Permissible ambient conditions Operating temperature: -25°C to +85°C *The max. temperature for UL is 60 °C.

Article number	Article designation	Cable outlet	PG-Interface	PU
Sub-D connector				
21700537	ED-CAN-90	90°	no	1
21700536	ED-CAN-90-PG	90°	yes	1
21700538	ED-CAN-AX	180° axial	no	1

DeviceNet is a registered trademark of ODVA
Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® DATA CAN M12

Field mountable M12 BUS-connectors shielded for DeviceNet/CANopen



Technical data

	Connection type Screwing
	Material Contact: CuSn Contact surface: Au Contact carrier: PA66 Sealing: NBR Knurl: Nickel-plated brass Gripping body: Zinc die-cast, nickel-plated
	Protection rating IP67
	Ambient temperature (operation) Plug/socket -40°C to +85°C
	Coding A - Standard (CANopen/DeviceNet/CC-Link)
	Rated current (A) 4 A

Benefits

- Quick and easy on-site assembly
- For creating of individual cable lengths
- Cost efficient and rational wiring for BUS installations
- Space-saving due to compact dimensions

Product Make-up

- M12 plug, 5-pins, A-coded
- Screw connection
- PG9 thread
- Screened version

Article number	Article designation	Connection type	Number of pins	Cross-section in mm²	Cable diameter in mm	Rated voltage (V)	PU
Plug, straight							
22260135	AB-C5-M12MS-PG9-SH	screw	5	0.25 - 0.75	6.0 - 8.0	60	1
Socket, straight							
22260136	AB-C5-M12FS-PG9-SH	screw	5	0.25 - 0.75	6.0 - 8.0	60	1

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EPIC® DATA CAN M12/M12

M12 control cabinet feed-through, shielded for CAN/DeviceNet/ S/A cabling



Technical data

	Material Contact: CuZn Contact surface: Au (gold) Contact carrier: PA 66 Knurl: Nickel-plated brass Sealing: FKM
	Protection rating IP67
	Ambient temperature (operation) Plug/socket -25°C to +85°C
	Coding A - Standard (CANopen/DeviceNet/CC-Link)
	Rated current (A) 4 A

Benefits

- M12 connector on both sides
- Plug & Play for flexible connection solutions

Product features

- For CANopen/DeviceNet applications
- For sensor/actuator cabling
- Bipolar/screw mounting

Product Make-up

- 5-pin control cabinet feed-through, M12 A-coded
- M12 plug on M12 socket
- Screened version

Article number	Article designation	Number of pins	Rated voltage (V)	PU
Control cabinet feed through				
22262020	AB-C5-DSI-M12MS-M12FS-M16-SH	5	24	1

DeviceNet is a registered trademark of ODVA
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CAN BUS & Devicenet cables & Connectors

Bus system CAN / DeviceNet • DeviceNet - fixed installation



UNITRONIC® DeviceNet THICK + THIN



Application range

- Fixed installation
- DeviceNet™ connects industrial devices e.g. limit switches, photoelectric switches, valve islands, motor starters, drives, PLCs, etc.

Product features

- Resistant to oils
- Based on proven CAN (Controller Area Network) technology.
- Permissible cable lengths vary with the data rate and the cable thickness
- FRNC Version: Halogene free and flame retardant

Norm references / Approvals

- CMG UL/CSA certification 75 °C or PLTC, Sun Res
- FRNC variant additionally with Germanischer Lloyd certification

Product Make-up

- Core insulation made of foam skin
- Outer sheath: Halogene free (FRNC) or Polyvinylchlorid (PVC)

Article number	Article designation	Number of pairs and AWG size	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Halogen-free					
2170340	UNITRONIC® BUS DN THICK FRNC	1x2xAWG18 + 1x2xAWG15	12.2	82.8	195
2170341	UNITRONIC® BUS DN THIN FRNC	1x2xAWG24 + 1x2xAWG22	6.9	33.4	69.5
With PVC outer sheath					
2170342	UNITRONIC® BUS DN THICK Y	1x2xAWG18 + 1x2xAWG15	12.2	88.4	192
2170343	UNITRONIC® BUS DN THIN Y	1x2xAWG24 + 1x2xAWG22	6.9	33.4	66.9

UNITRONIC® DeviceNet THICK + THIN



Application range

- Stationary application
- DeviceNet™ connects industrial devices e.g. limit switches, photoelectric switches, valve islands, motor starters, drives, PLCs, etc.
- DeviceNet™ Bus system (Rockwell Automation)

Product features

- Based on proven CAN (Controller Area Network) technology.
- Permissible cable lengths vary with the data rate and the cable thickness
- THICK cable total trunk length
 - 125 kbit/s = 500 m
 - 250 kbit/s = 250 m
 - 500 kbit/s = 100 m
- THIN cable total trunk length
 - 125 kbit/s = 6 m
 - 250 kbit/s = 6 m
 - 500 kbit/s = 6 m

Approvals



Product Make-up

- Strained tinned copper conductor
- PE core insulation
- PVC outer sheath
- Colour: chrome grey, RAL 7005

Article number	Article designation	Number of pairs and AWG size	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
3801234	DeviceNet THICK	1x2x18AWG + 1x2x15AWG	12.0	80.9	158.7
3801235	DeviceNet THIN	1x2x24AWG + 1x2x22AWG	7.2	30.5	66.9



Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Core identification code Data pair: light blue + white Power supply: red + black
	Mutual capacitance (800 Hz): max. 39.8 nF/km
	Peak operating voltage 300 V (not for power applications)
	Conductor resistance Thick (loop): max. 45 ohm/km Thin (loop): max. 180 ohm/km
	Minimum bending radius Fixed installation: 15 x outer diameter
	Test voltage Core/core: 2000 V
	Characteristic impedance 120 ohm
	Temperature range Fixed installation: -25 °C to +80 °C

info

DeviceNet

Technical data

	Core identification code Data pair: light blue + white Power supply: red + black
	Mutual capacitance (800 Hz): max. 4 nF/km
	Peak operating voltage 300 V (not for power applications)
	Conductor resistance Thick (loop): max. 45 ohm/km Thin (loop): max. 180 ohm/km
	Minimum bending radius Fixed installation: 10 x outer diameter
	Test voltage 1000 V
	Characteristic impedance at 1 MHz: 120+/- 10 Ohm
	Temperature range Fixed installation: -20 °C to +70 °C



Info

- LD is a LAPP abbreviation for long distance

Technical data

	ETIM 5.0 Class-ID: EC001855 ETIM 5.0 Class-Description: Sensor-actuator patch cord
	Mutual capacitance (800 Hz): max. 60 nF/km
	Peak operating voltage (not for power applications) 250 V
	Conductor resistance (loop): max. 186 ohm/km
	Minimum bending radius Fixed installation: 8 x outer diameter
	Test voltage Core/core: 1500 V rms
	Characteristic impedance 100 - 120 Ohm
	Temperature range Fixed installation: -40 °C to +80 °C Flexing: -5 °C to +70 °C

Article number	Article designation	Number of pairs and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
for fixed installation					
2170203	UNITRONIC® BUS LD	1 x 2 x 0,22	5.7	18	37
2170204	UNITRONIC® BUS LD	2 x 2 x 0,22	7.1	28	45
2170205	UNITRONIC® BUS LD	3 x 2 x 0,22	7.2	37	72
For fixed installation - UL/CSA CMX certification					
2170803	UNITRONIC® BUS LD A	1 x 2 x 0,22	5.7	18	39

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).

Modbus is owned by the Modbus-IDA Organisation. SUCOnet P is a registered trademark of the Moeller Group. Modulink P is a registered trademark of Weidmüller GmbH & Co. VariNet is a registered trademark of Pepperl+Fuchs GmbH.

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

RS485/RS422, ASI, EIB cables

Bus systems with interface RS485/RS422 • Fixed installation



UNITRONIC® BUS LD



Benefits

- Suitable for multiple Bus systems based on RS485 / RS422

Application range

- For fixed installation
Maximum electromagnetic screening
- Bus cables for bus systems such as e.g. Modbus, SUCOnet P, Modulink P, VariNet-P)
- Dry or damp rooms

Product features

- The stated bit rates result in the following cable lengths (maximum) of one bus segment:
 - 9.6-93.75 kbit/s = 1200m
 - 187.5 kbit/s = max. 1,000 m
 - 500 kBit/s = max. 400 m
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- UL versions with certification: UL/CSA type CMX acc. to UL 444 and CSA C22.2 no. 214-02

Product Make-up

- Stranded bare 7-wire conductor, colour-coded according to DIN 47100
- Copper braid
- PVC sheath
- Colour: violet (RAL 4001)
- UNITRONIC® BUS LD A as UNITRONIC® BUS LD, but with UL/CSA certification



UNITRONIC® BUS ASI



Benefits

- The new BUS ASI LD 2 x 2.5 (Long Distance) allows even modules located further away to be connected. AS-I power supplies can be reduced. The BUS ASI LD is downwards-compatible with version 1.5.
- The rubber versions are halogen-free

Application range

- Communication at sensor/actuator level
- UNITRONIC® Fieldbus sensor-/actuator wiring
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- The TPE version has an oil-resistant outer sheath. It is suitable for wet areas, in particular in conjunction with water-soluble cooling lubricants.

Product features

- Data and power are transmitted via an unscreened, geometrically coded two-core flat cable (protection against polarity reversal).
- The conductor is contacted by “piercing technology” within the ASI modules.
- The sensors are connected to the ASI modules (coupling modules) using round cables (connection cables).

Article number	Article designation	Outer sheath material	Outer sheath colour	Application	Number of cores and mm² per conductor	Copper index (kg/km)	Weight (kg/km)
For fixed and flexible applications (19-wire stranded conductor)							
2170228	UNITRONIC® BUS ASI (G)	EPDM (rubber)	yellow	Data and power transmission	2 x 1,5	29	85
2170229	UNITRONIC® BUS ASI (G)	EPDM (rubber)	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29	85
2170371	UNITRONIC® BUS ASI LD (G)	EPDM (rubber)	yellow	Data and power transmission	2 x 2,5	48	85
2170372	UNITRONIC® BUS ASI LD (G)	EPDM (rubber)	black	Transmission of 30 V DC auxiliary power	2 x 2,5	48	85
2170230	UNITRONIC® BUS ASI (TPE)	TPE	yellow	Data and power transmission	2 x 1,5	29	64
2170231	UNITRONIC® BUS ASI (TPE)	TPE	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29	64
2170232	UNITRONIC® BUS ASI (TPE)	TPE	red	Transmission of 230 V AC auxiliary power	2 x 1,5	29	64
2170842	UNITRONIC® BUS ASI (PVC) A	PVC UL/CSA (CMG)	yellow	Data and power transmission	2 x 1,5	29	70
2170843	UNITRONIC® BUS ASI (PVC) A	PVC UL/CSA (CMG)	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29	70
2170844	UNITRONIC® BUS ASI (PVC) A	PVC UL/CSA (CMG)	red	Transmission of 230 V AC auxiliary power	2 x 1,5	29	70

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 Lapp Kabel is a member of the AS-International Association Photographs are not to scale and do not represent detailed images of the respective products.



i

info

- “LD” = Long Distance

Technical data

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

Peak operating voltage
Yellow: 300 V
(not for power applications)
Black: 300 V
(not for power applications)
Red: 300 V

Conductor resistance
1.5 mm²: max. 13.7 Ohm/km
2.5 mm²: max. 8.21 Ohm/km

Minimum bending radius
Fixed installation: 12 mm
Flexible use 24 mm

Test voltage
Core/core: 2000 V

Temperature range
Dependent on outer sheath material:
PVC: -30°C to +90°C
Other materials: -40°C to +85°C
During installation:
PVC -20 °C to +90 °C
Other materials:
-30 °C to +85 °C



UNITRONIC® BUS EIB / KNX



i

info

- EIB / European Installation Bus
- KNX/communication in building management

Technical data

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

Mutual capacitance
(800 Hz): max. 100 nF/km

Peak operating voltage
(not for power applications) 250 V

Conductor resistance
(loop): max. 73.2 ohm/km

Minimum bending radius
Fixed installation:
10 x outer diameter

Test voltage
Core/core: 4000 V

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

Application range

- The product is designed for use in building management, e.g. for decentralised control of lighting, heating, air-conditioning, ventilation, energy management, blinds, time management, locking systems etc.
- The cable can be laid on or under plaster; in pipes, cable ducts; in dry, damp or wet environments.
- EIB installation mainly consists of sensors/ command-transmitters (e.g. light barriers, switches, thermostats, infrared, wind meters, timers), and actuators (e.g. engines, heaters, ventilators, lights, blinds).
- KNX technology was formed from the merging of three established European bus standards: EIP, EHS (household appliances and consumer electronics) and Batibus (heating/ventilation/air conditioning)

Product features

- Serial data transmission
- EIB cable has been tested at 4 kV (1 min.) in a water bath

Product Make-up

- Screened installation cable based on type J-Y(ST)Y according to DIN VDE 0815, solid bare copper conductor, ø 0.8 mm, measurements 2 x 2 x 0.8 ø. 4 solid cores twisted to a star quad; colours of cores: 1st pair red + black, 2nd pair white + yellow.
- Screening: wrapped with aluminium-laminated plastic foil
- Outer sheath: Based on PVC
- Colour: green
- COMBI version with additional power supply cables 3 x 1.5 mm²; core colours: blue, black, green-yellow

Article number	Article designation	Number of pairs and mm or mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/m)
PVC versions					
2170240	UNITRONIC® BUS EIB	2 x 2 x 0.8	6.6	21	54
2170242	UNITRONIC® BUS EIB COMBI	2 x 2 x 0,8 mm + 3 x 1,5 mm²	12.7	64	128
Halogen-free versions					
2170241	UNITRONIC® BUS EIB H	2 x 2 x 0.8	6.6	21	54

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 100/100 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 are not to scale and do not represent detailed images of the respective products.





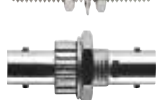
HITRONIC®

Optical transmission systems

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

Application range

- Telecommunications and network technology
- Industrial cabling and automation level
- Industrial machinery and plant engineering
- Data transmission under harsh conditions (mining and tunnel construction, oil and gas platforms, wind power plants)

Type of fibre	Cables	Connectors & Adapters	Accessories
POF Polymer Optical Fibre	POF SIMPLEX PE		
	POF DUPLEX PE		
	POF SIMPLEX PE-PUR		
	POF DUPLEX PE-PUR		
	POF DUPLEX Heavy		
	POF SIMPLEX/DUPLEX FD PE-PUR		
	POF DUPLEX for PROFINET® applications		
PCF Plastic Cladded Fibre	PCF SIMPLEX Outdoor		
	PCF DUPLEX Outdoor		
	PCF DUPLEX Indoor		
	PCF DUPLEX FD Universal		
	PCF DUPLEX for PROFINET® applications		
GOF Glass Optical Fibre	HITRONIC® FIRE		
	HITRONIC® TORSION		
	HRM-FD Flexible		
	HDM Reel		
	HQN Outdoor		
	HVN Stranded Outdoor		
	HVN-Mini Outdoor (air blowable)		
	HQW Armoured Outdoor		
	HVW Armoured Stranded Outdoor		
	HQW-Plus Armoured Outdoor		
	HQA Aerial ADSS		
	HQA-Plus Aerial ADSS		
	HUN Universal		
	HUW Armoured Universal		
	HRH Breakout		
	HDH Mini Breakout		



1 HITRONIC® HUN UNIVERSAL FIBRE Cable

Universal cable with central loose tube and non-metallic strain relief



Construction	Minimum Bending Radius	Temperature Rating	Fibre Type
• Glass fibres with primary coding • Gel-filled loose tube • Water-blocking reinforced glass yarn strain relief • LSZH outer sheath	• Dynamic flexing: 20 x outer diameter • Static installation: 15 x outer diameter	• Fixed installation: -30°C to +70°C	• GOF - Glass Optical Fibre
		Permissible Tensile Force	
		• Fixed installation: 1500 N • Short-term: 2000 N	

Part No.	Number Of Fibres Single-mode E 9 OS2	OD(mm)
27400904	4	7.3mm
27400908	8	7.3mm
27400912	12	7.3mm
Multimode G 62.5 OM1		
27400104	4	7.3mm
27400108	8	7.3mm
27400112	12	7.3mm
Multimode G 50 OM2		
27400204	4	7.3mm
27400208	8	7.3mm
27400212	12	7.3mm
Multimode G 50 OM3		
27400304	4	7.3mm
27400308	8	7.3mm
27400312	12	7.3mm
Multimode G 50 OM4		
27400404	4	7.3mm
27400408	8	7.3mm
27400412	12	7.3mm

HITRONIC® HUW ARMoured UNIVERSAL FIBRE CABLE
Universal cable with central loose tube, corrugated steel tape and non metallic strain relief



Construction	Minimum Bending Radius	Temperature Rating	Fibre Type
• Glass fibres with primary coding • Gel-filled loose tube • Water-blocking reinforced glass yarn strain relief • LSZH outer sheath	• Dynamic flexing: 20 x outer diameter • Static installation: 15 x outer diameter	• Fixed installation: -30°C to +70°C	• GOF - Glass Optical Fibre
		Permissible Tensile Force	
		• Fixed installation: 1500 N • Short-term: 2000 N	

Part No.	Number Of Fibres Single-mode E 9 OS2	OD(mm)
27500904	4	9.6mm
27500908	8	9.6mm
27500912	12	9.6mm
Multimode G 62.5 OM1		
27500104	4	9.6mm
27500108	8	9.6mm
27500112	12	9.6mm
Multimode G 50 OM2		
27500204	4	9.6mm
27500208	8	9.6mm
27500212	12	9.6mm
Multimode G 50 OM3		
27500304	4	9.6mm
27500308	8	9.6mm
27500312	12	9.6mm
Multimode G 50 OM4		
27500404	4	9.6mm
27500408	8	9.6mm
27500412	12	9.6mm

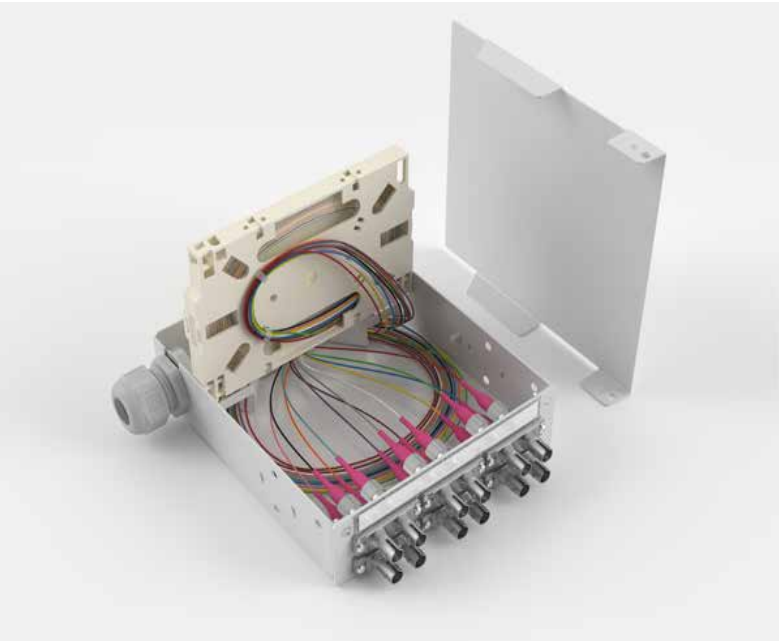


HITRONIC® SBX - INDUSTRIAL SPLICE BOXES

The joining of glass fibres - the so-called splicing - requires a lot of experience and fine motor skills. These splice boxes come with pre-assembled fibre optic pigtails and fitting adapters.

The splice boxes comply with IP20, the protection class required in control cabinets, temperature range extends from -40°C to +70°C and can be used in a wide variety of applications.

They are available in different versions with six or twelve ST Duplex, LC Duplex, SC Duplex or SC-RJ couplings and in all optical classes (OM1, OM2, OM3, OM4 OS2).



Learn more and explore the full HITRONIC® SBX range at lappaustralia.com.au/en/fibre-distribution-boxes



ÖLFLEX® SOLAR XLR-E

Cross-linked solar cables - type H1Z2Z2-K, certified according to EN 50618



Benefits

- Fine wire tinned copper conductor
- Core insulation made of electron beam cross linked copolymer
- Colour of core insulation: white
- Outer sheath made of electron beam cross-linked copolymer
- Outer sheath colour: black respectively black with red stripe

Temperature Rating

- -40°C to + 120° G max

Test Voltage

- AC 65000 V

Norm references / Approvals

- H 1 Z2Z2-K (type according to EN50618)

Application range

- For use in photovoltaic-systems with rated voltage 1500 V DC
- For the cabling between the solar modules and as extension cable between the module strings and the DC/AC inverter
- Gable and flat roof photovoltaic systems
- Photovoltaic plants and solar parks
- Not suitable for direct burial. Installation according to IEC 60364-5-52, respectively HD 60364-5-52

Special features

- Halogen-free and flame-retardant
- Weather/UV-resistant acc. to EN 50618
- Ozone-resistant according to EN 50396
- XLR-E = X-Linked Radiated-EN Standard Proven electron beam cross-linked quality



info

- H1Z2Z2-K (type according to EN 50618)

Technical data



Classification

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



Conductor stranding

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



Minimum bending radius

Fixed installation: 4 x outer diameter



Nominal voltage

AC U0/U : 1,0/1,0 kV
DC U0/U : 1,5/1,5 kV
Max. permissible operating voltage: DC 1,8 kV



Test voltage

AC 6500 V



Current rating

Im compliance with EN 50618, Table A.3



Temperature range

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

Article number	Cores	Conductor	Conductor Colours	Cable OD	Drum Size
ÖLFLEX® SOLAR XLR-E					
Single Core					
1023652S	1	4mm	White	5.2mm	100m
1023652	1	4mm	White	5.2mm	500m
1023653S	1	6mm	White	5.8mm	100m
1023653	1	6mm	White	5.8mm	500m
Twin Core					
1023712S	2	4mm	Red/Blue	12mm x 5.2mm	100m
1023713	2	6mm	Red/Blue	12mm x 5.8mm	500m



ÖLFLEX® SOLAR XLR-E T

Electron beam cross-linked solar twin-cables, separable - EN 50618 type



info

- Optimised cable design - thin, light and robust
- Time-saving installation
- Ideal for stand-alone PV power systems

Technical data



Classification

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



Core identification code

black / red



Conductor stranding

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



Minimum bending radius

Fixed installation: 4 x outer diameter



Nominal voltage

AC U0/U : 1,0/1,0 kV
DC U0/U : 1,5/1,5 kV
Max. permissible operating voltage: DC 1,8 kV



Test voltage

AC 6500 V



Current rating

Im compliance with EN 50618, Table A.3



Temperature range

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

Benefits

- Easy to split into two separate cables
- Reduced outer diameters enable space and weight saving installation
- Robust against mechanical impacts
- Reduction of flame propagation and of toxic combustion gases in the event of fire
- Exact quantity control during installation by meter marking on the cable sheath

Application range

- For use in photovoltaic-systems with rated voltage 1500 V DC
- Ideal for stand-alone PV power systems
- Gable and flat roof photovoltaic systems
- Photovoltaic plants and solar parks
- Flexible or building-integrated PV systems

Product features

- Weather/UV-resistant acc. to EN 50618
- Ozone-resistant according to EN 50396
- Good notch and abrasion resistance
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)

Norm references / Approvals

- H1Z2Z2-K (type according to EN 50618)

Product Make-up

- Fine-wire, tinned-copper conductor
- Core insulation made of electron beam cross-linked copolymer
- Outer sheath made of electron beam cross-linked copolymer
- Outer sheath colour: Black
- Cores connected in parallel with a separating strip



info

- Optimised cable design - thin, light and robust
- Time-saving installation
- Ideal for stand-alone PV power systems

ÖLFLEX® SOLAR GN/YE

Electron beam cross-linked solar twin-cables, separable - EN 50618 type



Construction

- Flexible class 5 fine wire stranding, copolymer insulation, tinned copper conductor

Temperature Rating

- -40 to 120°C
- Test Voltage
- 3000V

Special features

- Designed for long outdoor lifespan
- Small cable OD
- Excellent weather and UV resistance
- Meter marked on sheath

Article number	Cores	Conductor	Conductor Colours	Cable OD	Drum Size
25814S	1	4mm	Earth	6mm	100m
25823S	1	6mm	Earth	7.1mm	100m

1 INSTRUMENTATION CABLE

Applications

The instrumentation cables described in this catalogue are manufactured strictly based on the requirement of EN50288 as well as relevant Australian Standards. Instrumentation cables are mainly used in data processing and process control i.e. electrical measuring device to instrument panel. Instrument to instrument connection, and electrical sensing device to control cabinets. It can be used also for general transmission of electrical signals in any systems of remote control, indication, telemetering, monitoring and analysis which it needs to be protected from interference to the transmission signal by other electrical circuits. Instrumentation cable with the identification colour blue is specified for intrinsically safe circuits use.

Cable configuration

Conductor	Plain annealed copper (class 2 strands) of the type specified in AS/NZS 1125.		
Insulation	V90 PVC complying to AS/NZS3808		
Laying-up core	Twisted to pair or triple with optimum pitch to minimise the cross talk.		
Core identification	Pair element:	Black, White, and all cores numbered	
	Triple element:	Black, White, Red, and all cores numbered	
Overall screened	A stranded tinned annealed copper drain wire (7/0.2mm) is helically applied between the lapping polyester tape and the aluminium foil (100% coverage) for extra protection against external noise and interference (i.e. electrostatic from external high voltages and electromagnetic from external high currents)		
Outer sheath	V90 PVC complying to AS/NZS3808		
Sheath identification	Black sheath (Ultraviolet - UV stabilised) Blue sheath - instrumentation cable for intrinsically safe circuits		
Operating temperature	Minimum conductor continuous operating temperature: -20°C Maximum conductor operating temperature: 90°C		

Electrical Properties

Rated Voltage:	Max. 110/150V	
Inductance	0.5SQMM:	1.1mH/km @1KHz
	1.5SQMM:	0.95mH/km @1KHz
Capacitance	0.5SQMM:	0.145uF/km @1KHz
	1.5SQMM:	0.20uF/km @1KHz
L/R ratio	0.5SQMM:	0.0157mH/Ω
	1.5SQMM:	0.0365mH/Ω
Insulation Resistance	140MΩ.km @ 20°C	
Conductor Resistance	0.5SQMM	38.4Ω/km @ 20°C
	1.5SQMM	13.6Ω/km @ 20°C

Flame retardant PVC is tested to standard IEC 60332-1

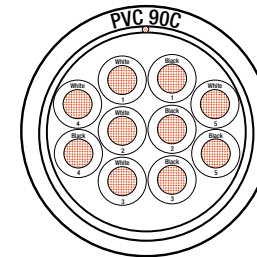
Mechanical Properties

The recommended bending radius is as follows:

Unarmoured Cable:	12 x Cable Outer Diameter (during installation)
	6 x Cable Outer Diameter (after installation)
Armoured Cable:	18 x Cable Outer Diameter (during installation)
	12 x Cable Outer Diameter (after installation)



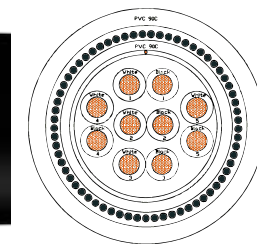
Overall Screened, Pairs



Nominal Area mm ² (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA10.05.01.02	1	5.71	41
(7/0.30mm)	TA10.05.02.02	2	7.25	60
	TA10.05.03.02	3	7.67	75
	TA10.05.04.02	4	8.35	91
	TA10.05.06.02	6	10.07	128
	TA10.05.08.02	8	11.45	165
	TA10.05.10.02	10	13.30	211
	TA10.05.12.02	12	13.72	239
	TA10.05.16.02	16	15.93	329
	TA10.05.18.02	18	16.72	361
	TA10.05.20.02	20	17.99	410
(7/0.40mm)	TA10.05.24.02	24	19.74	478
	TA10.05.36.02	36	22.77	677
	TA10.05.50.02	50	25.79	887
1.00 (18)	TA10.10.01.02	1	5.5	42
(7/0.40mm)	TA10.10.02.02	2	8.2	79
	TA10.10.03.02	3	8.7	104

Nominal Area mm ² (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA10.15.01.02	1	7.33	70
(7/0.50mm)	TA10.15.02.02	2	9.57	113
	TA10.15.03.02	3	10.14	149
	TA10.15.04.02	4	11.27	190
	TA10.15.06.02	6	13.55	271
	TA10.15.08.02	8	15.36	351
	TA10.15.10.02	10	17.34	427
	TA10.15.12.02	12	17.91	493
	TA10.15.16.02	16	20.04	641
	TA10.15.18.02	18	21.12	711
	TA10.15.20.02	20	22.70	803
(7/0.50mm)	TA10.15.24.02	24	25.10	947
	TA10.15.36.02	36	29.09	1378
	TA10.15.50.02	50	33.21	1852

Overall Screened, Armoured Pairs



Nominal Area mm ² (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA11.05.01.02	1	10.98	198
(7/0.30mm)	TA11.05.02.02	2	12.85	246
	TA11.05.04.02	4	14.15	304
	TA11.05.06.02	6	15.67	360
	TA11.05.08.02	8	17.05	430
	TA11.05.10.02	10	18.9	534
	TA11.05.12.02	12	19.92	570
	TA11.05.16.02	16	22.33	760
	TA11.05.20.02	20	23.99	899
	TA11.05.24.02	24	25.74	1010
	TA11.05.36.02	36	29.57	1365
(7/0.30mm)	TA11.05.50.02	50	32.59	1658

Nominal Area mm ² (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA11.15.01.02	1	12.08	238
(7/0.50mm)	TA11.15.02.02	2	14.97	330
	TA11.15.04.02	4	16.87	455
	TA11.15.06.02	6	19.45	623
	TA11.15.08.02	8	21.06	730
	TA11.15.10.02	10	24.34	940
	TA11.15.12.02	12	25.31	1075
	TA11.15.16.02	16	27.64	1282
	TA11.15.20.02	20	29.9	1491
	TA11.15.24.02	24	32.3	1702
	TA11.15.36.02	36	36.29	2497
(7/0.50mm)	TA11.15.50.02	50	40.41	3124

1 Individual & Overall Screened, Pairs



Nominal Area mm ² (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA12.05.02.02	2	8.3	79
(7/0.30mm)	TA12.05.03.02	3	8.8	98
	TA12.05.04.02	4	9.5	119
	TA12.05.06.02	6	11.2	161
	TA12.05.08.02	8	12.5	200
	TA12.05.10.02	10	14.5	255
	TA12.05.12.02	12	15.3	304
	TA12.05.16.02	16	17.1	381
	TA12.05.18.02	18	17.9	428
	TA12.05.20.02	20	18.9	468
	TA12.05.24.02	24	21.2	567
	TA12.05.36.02	36	24.4	809
	TA12.05.50.02	50	27.7	1068

Nominal Area mm ² (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA12.15.02.02	2	10.2	127
(7/0.50mm)	TA12.15.03.02	3	10.9	165
	TA12.15.04.02	4	12.1	211
	TA12.15.06.02	6	14.3	294
	TA12.15.08.02	8	16.2	382
	TA12.15.10.02	10	18.7	482
	TA12.15.12.02	12	19.3	556
	TA12.15.16.02	16	21.6	719
	TA12.15.18.02	18	22.7	798
	TA12.15.20.02	20	24.4	899
	TA12.15.24.02	24	26.9	1060
	TA12.15.36.02	36	31.2	1537
	TA12.15.50.02	50	36	2096

Overall Screened, Triads



Nominal Area mm ² (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA14.05.01.03	1	5.3	43
(7/0.30mm)	TA14.05.02.03	2	7.9	78
	TA14.05.03.03	3	8.3	100
	TA14.05.04.03	4	9.3	128
	TA14.05.06.03	6	11	176
	TA14.05.08.03	8	12.9	240
	TA14.05.10.03	10	14.5	291
	TA14.05.12.03	12	15	334
	TA14.05.16.03	16	16.6	424
	TA14.05.18.03	18	18.2	502
	TA14.05.20.03	20	19.2	550
	TA14.05.24.03	24	22	686
	TA14.05.36.03	36	24.9	955

Nominal Area mm ² (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA14.15.01.03	1	7	82
(7/0.50mm)	TA14.15.02.03	2	10.3	152
	TA14.15.03.03	3	11	203
	TA14.15.04.03	4	12.2	262
	TA14.15.06.03	6	14.7	378
	TA14.15.08.03	8	16.5	485
	TA14.15.10.03	10	19.5	630
	TA14.15.12.03	12	20.1	730
	TA14.15.16.03	16	23	980
	TA14.15.18.03	18	24.2	1088
	TA14.15.20.03	20	25.5	1196
	TA14.15.24.03	24	28.2	1414
	TA14.15.36.03	36	32.1	2027

Individual & Overall Screened, Armoured Pairs



Nominal Area mm ² (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA13.05.02.02	2	13.49	277
(7/0.30mm)	TA13.05.04.02	4	14.72	334
	TA13.05.06.02	6	17.33	481
	TA13.05.08.02	8	18.66	555
	TA13.05.10.02	10	20.28	630
	TA13.05.12.02	12	21.55	691
	TA13.05.16.02	16	23.84	885
	TA13.05.20.02	20	25.89	1026
	TA13.05.24.02	24	28.66	1297
	TA13.05.36.02	36	31.61	1619
	TA13.05.50.02	50	35.19	2021

Nominal Area mm ² (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA13.15.02.02	2	16.51	435
(7/0.50mm)	TA13.15.04.02	4	18.75	548
	TA13.15.06.02	6	21.01	682
	TA13.15.08.02	8	23.47	887
	TA13.15.10.02	10	25.62	1039
	TA13.15.12.02	12	26.64	1125
	TA13.15.16.02	16	29.15	1395
	TA13.15.20.02	20	32.21	1647
	TA13.15.24.02	24	35.22	1971
	TA13.15.36.02	36	39.13	2540
	TA13.15.50.02	50	44.02	3319
	TA12.05.36.02	36	24.4	809
	TA12.05.50.02	50	27.7	1068

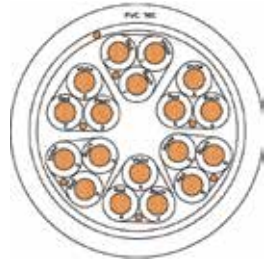
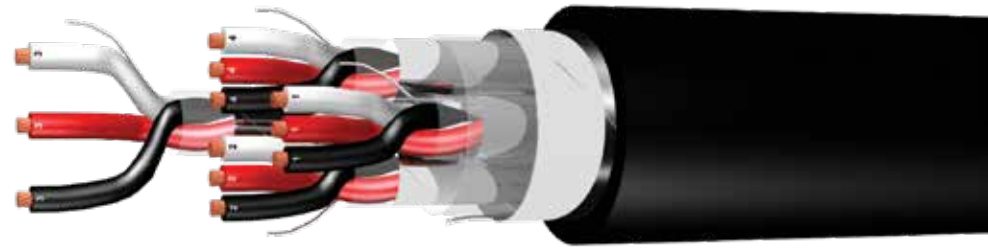
Overall Screened, Armoured, Triads



Nominal Area mm ² (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA15.05.01.03	1	9.63	173
(7/0.30mm)	TA15.05.02.03	2	12.65	242
	TA15.05.03.03	3	13.9	277
	TA15.05.04.03	4	15.04	347
	TA15.05.06.03	6	17.58	449
	TA15.05.08.03	8	18.85	530
	TA15.05.10.03	10	20.2	599
	TA15.05.12.03	12	22.16	756
	TA15.05.16.03	16	23.68	887
	TA15.05.20.03	20	26.26	1083
	TA15.05.24.03	24	28.16	1234
	TA15.05.36.03	36	32.18	1767

Nominal Area mm ² (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA15.15.01.03	1	10.82	224
(7/0.50mm)	TA15.15.02.03	2	14.72	341
	TA15.15.03.03	3	16.34	416
	TA15.15.04.03	4	18.64	559
	TA15.15.06.03	6	21.68	743
	TA15.15.08.03	8	23.42	886
	TA15.15.10.03	10	26.64	1152
	TA15.15.12.03	12	27.26	1266
	TA15.15.16.03	16	29.34	1529
	TA15.15.20.03	20	32.17	2168
	TA15.15.24.03	24	35.96	2604
	TA15.15.36.03	36	40.62	3600

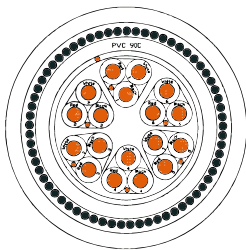
1 Individual & Overall Screened, Triads



Nominal Area mm² (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA16.05.02.03	2	10	117
(7/0.30mm)	TA16.05.04.03	4	11.4	177
	TA16.05.06.03	6	13.5	243
	TA16.05.08.03	8	15	306
	TA16.05.10.03	10	16.9	372
	TA16.05.12.03	12	17.5	425
	TA16.05.16.03	16	19.4	539
	TA16.05.18.03	18	20.4	598
	TA16.05.20.03	20	21.6	658
	TA16.05.24.03	24	23.9	781
	TA16.05.36.03	36	27.4	1106

Nominal Area mm² (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA16.15.02.03	2	12.2	193
(7/0.50mm)	TA16.15.04.03	4	14.1	314
	TA16.15.06.03	6	16.8	444
	TA16.15.08.03	8	18.8	569
	TA16.15.10.03	10	21.4	701
	TA16.15.12.03	12	22.1	812
	TA16.15.16.03	16	24.6	1048
	TA16.15.18.03	18	25.9	1168
	TA16.15.20.03	20	27.5	1291
	TA16.15.24.03	24	30.5	1539
	TA16.15.36.03	36	35.1	2222

Individual & Overall Screened, Armoured, Triads



Nominal Area mm² (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA17.05.02.03	2	14.3	117
(7/0.30mm)	TA17.05.03.03	3	15.02	177
	TA17.05.04.03	4	16.46	177
	TA17.05.06.03	6	18.95	243
	TA17.05.08.03	8	21.21	306
	TA17.05.10.03	10	23.4	372
	TA17.05.12.03	12	25.12	425
	TA17.05.16.03	16	26.87	539
	TA17.05.20.03	20	28.92	658
	TA17.05.24.03	24	32.5	781
	TA17.05.36.03	36	36.15	1106

Nominal Area mm² (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA17.15.02.03	2	16.7	415
(7/0.50mm)	TA17.15.03.03	3	18.55	567
	TA17.15.04.03	4	19.67	561
	TA17.15.06.03	6	23.65	933
	TA17.15.08.03	8	25.18	1044
	TA17.15.10.03	10	27.53	1216
	TA17.15.12.03	12	29.42	1447
	TA17.15.16.03	16	32.33	1725
	TA17.15.20.03	20	35.03	2020
	TA17.15.24.03	24	39.1	2615
	TA17.15.36.03	36	43.78	3861



UNITRONIC® SPIRAL

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

info

- Secure against electrical interferences
- PUR outer sheath



Technical data

ETIM	ETIM 5.0 Class-ID: EC000247 ETIM 5.0 Class-Description: Spiralised cable
Core identification code	DIN 47100
Peak operating voltage	250 V (not for power transmission)
Conductor stranding	Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6
Test voltage	1200 V
Temperature range	Flexing: -5 °C to +50 °C

Benefits

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

Application range

- In measurement and control engineering
- Wherever screened cables with smallest dimensions are required

Product features

- Abrasion and cut-resistant
- Very high flexibility

Product Make-up

- Strands of bare copper wires
- Core insulation: Based on PVC
- Screening: wrapped with braided copper wires
- Outer sheath: PUR compound
- Length of straight ends: 1st end = 200 mm, 2nd end = 600 mm
- Versions without the mandatory LAPP designation, but with other solid lengths, end lengths and end forms available on request

Article number	Number of cores and mm² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)	Pieces / PU
UNITRONIC® SPIRAL						
73220200	2 x 0.14	400	100	4.1	15	5
73220201	2 x 0.14	800	200	4.1	15	5
73220202	2 x 0.14	1200	300	4.1	15	5
73220203	2 x 0.14	1600	400	4.1	15	5
73220204	2 x 0.14	2000	500	4.1	15	5
73220205	3 x 0.14	400	100	4.3	18	5
73220206	3 x 0.14	800	200	4.3	18	5
73220207	3 x 0.14	1200	300	4.3	18	5
73220208	3 x 0.14	1600	400	4.3	18	5
73220209	3 x 0.14	2000	500	4.3	18	5
73220210	4 x 0.14	400	100	4.5	19	5
73220211	4 x 0.14	800	200	4.5	19	5
73220212	4 x 0.14	1200	300	4.5	19	5
73220213	4 x 0.14	1600	400	4.5	19	5
73220214	4 x 0.14	2000	500	4.5	19	5
73220215	5 x 0.14	400	100	4.8	20	5
73220216	5 x 0.14	800	200	4.8	20	5
73220217	5 x 0.14	1200	300	4.8	20	5
73220218	5 x 0.14	1600	400	4.8	20	5
73220219	5 x 0.14	2000	500	4.8	20	5
73220220	6 x 0.14	400	100	5.5	21	5
73220221	6 x 0.14	800	200	5.5	21	5
73220222	6 x 0.14	1200	300	5.5	21	5
73220223	6 x 0.14	1600	400	5.5	21	5
73220224	6 x 0.14	2000	500	5.5	21	5
73220230	12 x 0.14	400	100	7.2	27	1
73220231	12 x 0.14	800	200	7.2	27	1
73220232	12 x 0.14	1200	300	7.2	27	1
73220233	12 x 0.14	1600	400	7.2	27	1
73220234	12 x 0.14	2000	500	7.2	27	1
73220235	18 x 0.14	400	100	8	29	1
73220236	18 x 0.14	800	200	8	29	1
73220237	18 x 0.14	1200	300	8	29	1
73220238	18 x 0.14	1600	400	8	29	1
73220239	18 x 0.14	2000	500	8	29	1



ÖLFLEX® SPIRAL 400 P

PUR spiral cable with increased chemical resistance



info

- High resistance to benzols, benzines and other substances
- Good oil resistance
- High mechanical strength

Benefits

- High restoring forces and extension lengths up to 3 times the unextended spiral length
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media

Application range

- As control and power cables in machines
- Mechanical engineering
- Apparatus construction
- Product features
- Resistant to microbes, hydrolysis and almost all mineral oils
- High chemical-resistance to benzols, benzenes and other agents
- Abrasion and notch-resistant

Norm references / Approvals

- Core based on VDE 0812/0285
- Outer sheath based on VDE 0250/0285

Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation: Special PVC P8/ 1
- Use of talcum
- Outer sheath made of special polyurethane
- Length of straight ends: 1st end = 200 mm, 2nd end = 600 mm
- Versions without the mandatory LAPP designation, but with other solid lengths, end lengths and end forms available on request

Technical data

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

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

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

Nominal voltage
U₀/U: 300/500 V

Test voltage
3000 V

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

Temperature range
Flexible use: +5 °C to +50 °C

Article number	Number of cores and mm² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)
ÖLFLEX® SPIRAL 400 P					
70002622	2 X 0.75	1500	500	5.4	19.5
70002623	2 X 0.75	3000	1000	5.4	19.5
70002624	2 X 0.75	4500	1500	5.4	19.5
70002625	2 X 0.75	6000	2000	5.4	19.5
70002628	3 G 0.75	1500	500	5.7	20
70002629	3 G 0.75	3000	1000	5.7	20
70002630	3 G 0.75	4500	1500	5.7	20
70002631	3 G 0.75	6000	2000	5.7	20
70002634	4 G 0.75	1500	500	6.2	21
70002635	4 G 0.75	3000	1000	6.2	21
70002636	4 G 0.75	4500	1500	6.2	21
70002637	4 G 0.75	6000	2000	6.2	21
70002640	5 G 0.75	1500	500	6.7	24
70002641	5 G 0.75	3000	1000	6.7	24
70002642	5 G 0.75	4500	1500	6.7	24
70002643	5 G 0.75	6000	2000	6.7	24
70002726	7 G 0.75	1500	500	7.3	27
70002727	7 G 0.75	3000	1000	7.3	27
70002728	7 G 0.75	4500	1500	7.3	27
70002729	7 G 0.75	6000	2000	7.3	27
70002731	12 G 0.75	1500	500	9.9	35
70002732	12 G 0.75	3000	1000	9.9	35
70002734	18 G 0.75	1500	500	11.7	40
70002735	18 G 0.75	3000	1000	11.7	40



Article number	Number of cores and mm² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)
70002646	2 X 1	1500	500	5.7	20
70002647	2 X 1	3000	1000	5.7	20
70002648	2 X 1	4500	1500	5.7	20
70002649	2 X 1	6000	2000	5.7	20
70002651	3 G 1	1500	500	6	21
70002652	3 G 1	3000	1000	6	21
70002653	3 G 1	4500	1500	6	21
70002654	3 G 1	6000	2000	6	21
70002656	4 G 1	1500	500	6.5	24
70002657	4 G 1	3000	1000	6.5	24
70002658	4 G 1	4500	1500	6.5	24
70002659	4 G 1	6000	2000	6.5	24
70002661	5 G 1	1500	500	7.1	25
70002662	5 G 1	3000	1000	7.1	25
70002663	5 G 1	4500	1500	7.1	25
70002664	5 G 1	6000	2000	7.1	25
70002666	7 G 1	1250	500	8	30
70002667	7 G 1	2500	1000	8	30
70002668	7 G 1	3750	1500	8	30
70002669	7 G 1	5000	2000	8	30
70002670	12 G 1	1500	500	10.5	37
70002671	12 G 1	3000	1000	10.5	37
70002672	18 G 1	1500	500	12.7	45
70002673	18 G 1	3000	1000	12.7	45
70002681	2 X 1.5	1500	500	6.3	23
70002682	2 X 1.5	3000	1000	6.3	23
70002683	2 X 1.5	4500	1500	6.3	23
70002684	2 X 1.5	6000	2000	6.3	23
70002687	3 G 1.5	1500	500	6.7	24
70002688	3 G 1.5	3000	1000	6.7	24
70002689	3 G 1.5	4500	1500	6.7	24
70002690	3 G 1.5	6000	2000	6.7	24
70002699	5 G 1.5	1250	500	8.1	30
70002700	5 G 1.5	2500	1000	8.1	30
70002701	5 G 1.5	3750	1500	8.1	30
70002702	5 G 1.5	5000	2000	8.1	30
70002705	7 G 1.5	1250	500	8.9	31
70002706	7 G 1.5	2500	1000	8.9	31
70002707	7 G 1.5	3750	1500	8.9	31
70002708	7 G 1.5	5000	2000	8.9	31
70002709	12 G 1.5	1500	500	12	46
70002710	12 G 1.5	3000	1000	12	46
70002711	18 G 1.5	1500	500	13.4	52
70002712	18 G 1.5	3000	1000	13.4	52
70002716	3 G 2.5	1250	500	8.1	28.5
70002717	3 G 2.5	2500	1000	8.1	28.5
70002718	3 G 2.5	3750	1500	8.1	28.5
70002719	3 G 2.5	5000	2000	8.1	28.5
70002721	5 G 2.5	1250	500	10	37
70002722	5 G 2.5	2500	1000	10	37
70002723	5 G 2.5	3750	1500	10	37
70002724	5 G 2.5	5000	2000	10	37





ÖLFLEX® SPIRAL 540 P

Robust, halogen-free PUR spiral cable with high restoring forces



Benefits

- Extension lengths of up to 3.5 times the unextended spiral length, high recoiling forces
- The signal colour of the outer sheath increases safety and visual perception
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- 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

Application range

- Harsh conditions
- Mechanical engineering
- Construction industry
- Medical equipment
- In damp interiors or outdoors

Product features

- Halogen-free
- Good resistance of the outer sheath to cutting and abrasion
- High resistance to oil, low temperatures, microbes and hydrolysis
- Flexible down to -30°C

Product Make-up

- Strands of tinned-copper wires
- Core insulation: TPE
- Outer sheath made of special polyurethane
- Length of straight ends: 1st end = 200 mm, 2nd end = 600 mm
- Versions without the mandatory LAPP designation, but with other solid lengths, end lengths and end forms available on request



info

- High restoring forces
- Halogen-free
- Voltage class from 1.5 mm² 450/750 V

Technical data



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



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



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



Nominal voltage
0.75 - 1 mm²: U₀/U: 300/500 Vac
As from 1.5 mm²: U₀/U = 450/750 Vac



Test voltage
3000 V



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



Temperature range
Flexible use: -30°C to +50°C

Article number	Number of cores and mm² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)
U ₀ /U: 300/500 V					
73220107	2 X 0.75	1000	300	6.6	23
73220108	2 X 0.75	2000	600	6.6	23
73220109	2 X 0.75	3500	1000	6.6	23
73220110	2 X 0.75	5000	1500	6.6	23
73220111	3 G 0.75	1000	300	7	24
73220112	3 G 0.75	2000	600	7	24
73220113	3 G 0.75	3500	1000	7	24
73220114	3 G 0.75	5000	1500	7	24
71220115	4 G 0.75	1000	300	7.6	29
71220116	4 G 0.75	2000	600	7.6	29
71220117	4 G 0.75	3500	1000	7.6	29
71220118	4 G 0.75	5000	1500	7.6	29
71220119	5 G 0.75	1000	300	8.5	31
71220120	5 G 0.75	2000	600	8.5	31
71220121	5 G 0.75	3500	1000	8.5	31
71220122	5 G 0.75	5000	1500	8.5	31
73220123	2 X 1	1000	300	7	24
73220124	2 X 1	2000	600	7	24
73220125	2 X 1	3500	1000	7	24
73220126	2 X 1	5000	1500	7	24
73220127	3 G 1	1000	300	7.4	29
73220128	3 G 1	2000	600	7.4	29
73220129	3 G 1	3500	1000	7.4	29
73220130	3 G 1	5000	1500	7.4	29
71220131	4 G 1	1000	300	8.2	30
71220132	4 G 1	2000	600	8.2	30
71220133	4 G 1	3500	1000	8.2	30
71220134	4 G 1	5000	1500	8.2	30



Article number	Number of cores and mm² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)
71220135	5 G 1	1000	300	9	32
71220136	5 G 1	2000	600	9	32
71220137	5 G 1	3500	1000	9	32
71220138	5 G 1	5000	1500	9	32
73220139	7 G 1	1000	350	10.9	40
73220140	7 G 1	2000	700	10.9	40
73220141	7 G 1	3500	1200	10.9	40
73220142	7 G 1	5000	1700	10.9	40
U ₀ /U: 450/750 V					
73220143	2 X 1.5	1000	300	8.4	31
73220144	2 X 1.5	2000	600	8.4	31
73220145	2 X 1.5	3500	1000	8.4	31
73220146	2 X 1.5	5000	1500	8.4	31
73220147	3 G 1.5	1000	300	8.9	32
73220148	3 G 1.5	2000	600	8.9	32
73220149	3 G 1.5	3500	1000	8.9	32
73220150	3 G 1.5	5000	1500	8.9	32
71220151	5 G 1.5	1000	350	10.9	40
71220152	5 G 1.5	2000	700	10.9	40
71220153	5 G 1.5	3500	1200	10.9	40
71220154	5 G 1.5	5000	1700	10.9	40
73220155	7 G 1.5	1000	350	13.5	52
73220156	7 G 1.5	2000	700	13.5	52
73220157	7 G 1.5	3500	1200	13.5	52
73220158	7 G 1.5	5000	1700	13.5	52
73220159	3 G 2.5	1000	350	10.6	40
73220160	3 G 2.5	2000	700	10.6	40
73220161	3 G 2.5	3500	1200	10.6	40
73220162	3 G 2.5	5000	1700	10.6	40
71220163	5 G 2.5	1000	350	13.4	51
71220164	5 G 2.5	2000	700	13.4	51
71220165	5 G 2.5	3500	1200	13.4	51
71220166	5 G 2.5	5000	1700	13.4	51



Curly cords

ÖLFLEX® CONNECT Systems Solutions • Spiralled



SPIRAL H07BQ-F BLACK

Black, robust PUR spiral cable with high recoiling forces



Benefits

- Good cost-benefit ratio
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide application range

Application range

- Construction of engines and appliances with flexible power connections as well as at dockyards
- Construction of machinery and powered doors
- Measurement and control technology
- Any commercial/industrial/agricultural facility: connection of tools, appliances and mobile motors
- For indoor and outdoor use

Product features

- Black, robust outer PUR sheath
- High tensile strength and abrasion-resistance
- High restoring forces
- High resistance to oil, low temperatures, microbes and hydrolysis

Norm references / Approvals

- Based on EN 50525-2-21 H07BQ-F
- The spiralling modifies the properties of the <HAR> certified H07BQ-F cable (sold by the metre) that certain technical requirements stipulated by the H07BQ-F standards are no longer complied with following spiralling. As a result, the <HAR> H07BQ-F design certification of the H07BQ-F cable, also identifiable on the spiral cable, is no longer valid in conjunction with the spiralled piece good design of the "SPIRAL H07BQ-F BLACK". This is a completely logical consequence of the spiralling processing steps.

Product Make-up

- Tinned stranded copper wire of braided conductor class 5 according to IEC 60228 / VDE 0295
- Core insulation: El6 rubber according to EN 50525-1 & EN 50363-1 / VDE 0207-363-1; coloured according to HD 308 / VDE 0293-308; VDE and HAR marking of the unspiralled H07BQ-F (sold by the metre) as the basic material for the spiralling
- Use of talcum
- Black, outer PUR sheath made of TMPU according to EN 50525-2-21; marking "H07BQ-F ..."
- For the 4 standard solid lengths available, please see the article table below
- Radial outflow shape at cable ends - length of ends: 200 mm at the first end/600 mm at the other end
- Versions with other solid lengths, end lengths and end forms available on request

Article number	Number of cores and mm² per conductor	Spiral length, extended (mm)	Spiral length, unextended (mm)	Cable diameter (mm)	Spiral outer diameter (mm)
SPIRAL H07BQ-F BLACK					
70002750	3 G 1.5	1500	500	9	31
70002751	3 G 1.5	3000	1000	9	31
70002752	3 G 1.5	4500	1500	9	31
70002753	3 G 1.5	6000	2000	9	31
70002754	4 G 1.5	1500	500	10	38
70002755	4 G 1.5	3000	1000	10	38
70002756	4 G 1.5	4500	1500	10	38
70002757	4 G 1.5	6000	2000	10	38
70002758	5 G 1.5	1500	500	11	40
70002759	5 G 1.5	3000	1000	11	40
70002760	5 G 1.5	4500	1500	11	40
70002761	5 G 1.5	6000	2000	11	40



info

- Heavy construction type
- Outer sheath: PUR, with high recoiling forces
- Voltage rating 450/750 V

Technical data

	ETIM 5.0 Class-ID: EC000247 ETIM 5.0 Class-Description: Spiralized cable
	Core identification code Coloured according to VDE 0293-308 (HD 308)
	Conductor stranding Fine wire according to IEC 60228 / VDE 0295, class 5 tinned strands
	Minimum bending radius Flexible use: 12.5 x outer diameter
	Nominal voltage U ₀ /U: 450/750 V
	Test voltage 3000 V
	Protective conductor G = with GN-YE protective conductor
	Temperature range -25 °C to +50 °C (spiralled)

COLOUR CODING FOR POWER CABLES

Accepted Standards AS/NZS 3000:2007

For industrial factory and machine applications many of the cables are being designed and manufactured in Europe. Some cables use AS/NZS colour coding but many of the high end cables (including flex's and robotic cables) will use the European VDE colour coding standard.

AS/NZS Standard, European and number coded standards are accepted in Australia (AS/NZS 3000:2007 ref 3.8.3.3)



AS/NZS STANDARD

Cores
Application
Earth
Neutral
Phases



3	4	5
Single Phase	Three Phase	3 Phase + N
Green/Yellow	Green/Yellow	Green/Yellow
Black		Black
Red	Red	Red
	White	White
	Blue	Blue



VDE EUROPEAN STANDARD

Cores
Application
Earth
Neutral
Phases



3	4	5
Single Phase	Three Phase	3 Phase + N
Green/Yellow	Green/Yellow	Green/Yellow
Blue		Blue
Brown	Brown	Brown
	Black	Black
	Grey	Grey



NUMBER CODED

Cores
Application
Earth
Neutral
Phases



3	4	5
Single Phase	Three Phase	3 Phase + N
Green/Yellow	Green/Yellow	Green/Yellow
2		4
1	1	1
	2	2
	3	3

CROSS-REFERENCE BETWEEN STANDARDS

	AS/NZS	European	Number Coded
Phase 1	Red	Brown	1
Phase 2	White	Black	2
Phase 3	Blue	Grey	3
Neutral	Black	Blue	4
Earth	Green/Yellow	Green/Yellow	Green/Yellow



1

Strand make-up according to DIN VDE 0295, IEC 60228 and HD 383

cross section mm²	stranded wires		multistranded wires		fine wires		extra-fine wires							
	class 2 DIN VDE 0295				class 5 DIN VDE 0295		class 6 DIN VDE 0295							
	column 1		column 2		column 3		column 4		column 5		column 6		column 7	
	Number ³⁾ of wires	single x wire ø mm	Number of wires	single x wire ø mm	Number ¹⁾ of wires	single ²⁾ x wire ø mm	Number ¹⁾ of wires	single ²⁾ x wire ø mm	Number ¹⁾ of wires	single x wire ø mm	Number ¹⁾ of wires	single x wire ø mm	Number ¹⁾ of wires	single x wire ø mm
0,05											~14 x 0,07		~26 x 0,05	
0,08													~40 x 0,05	
0,09											~24 x 0,07*			
0,14					~18 x 0,1		~18 x 0,1		~18 x 0,1		~36 x 0,07		~72 x 0,05	
0,25					~14 x 0,15		~32 x 0,1		~32 x 0,1		~65 x 0,07		~128 x 0,05	
0,34			7 x 0,25		~19 x 0,15		~42 x 0,1		~42 x 0,1		~88 x 0,07		~174 x 0,05	
0,38			7 x 0,27		~12 x 0,2		~21 x 0,15		~48 x 0,1		~100 x 0,07		~194 x 0,05	
0,5	7 x 0,30		7 x 0,30		~16 x 0,2		~28 x 0,15		~64 x 0,1		~131 x 0,07		~256 x 0,05	
0,75	7 x 0,37		7 x 0,37		~24 x 0,2		~42 x 0,15		~96 x 0,1		~195 x 0,07		~384 x 0,05	
1,0	7 x 0,43		7 x 0,43		~32 x 0,2		~56 x 0,15		~128 x 0,1		~260 x 0,07		~512 x 0,05	
1,5	7 x 0,52		7 x 0,52		~30 x 0,25		~84 x 0,15		~192 x 0,1		~392 x 0,07		~768 x 0,05	
2,5	7 x 0,67		19 x 0,41		~50 x 0,25		~140 x 0,15		~320 x 0,1		~651 x 0,07		~1280 x 0,05	
4	7 x 0,85		19 x 0,52		~56 x 0,3		~224 x 0,15		~512 x 0,1		~1040 x 0,07			
6	7 x 1,05		19 x 0,64		~84 x 0,3		~192 x 0,2		~768 x 0,1		~1560 x 0,07			
10	7 x 1,35		49 x 0,51		~80 x 0,4		~320 x 0,2		~1280 x 0,1		~2600 x 0,07			
16	7 x 1,70		49 x 0,65		~128 x 0,4		~512 x 0,2		~2048 x 0,1					
25	7 x 2,13		84 x 0,62		~200 x 0,4		~800 x 0,2		~3200 x 0,1					
35	7 x 2,52		133 x 0,58		~280 x 0,4		~1120 x 0,2							
50	19 x 1,83		133 x 0,69		~400 x 0,4		~705 x 0,3							
70	19 x 2,17		189 x 0,69		~356 x 0,5		~990 x 0,3							
95	19 x 2,52		259 x 0,69		~485 x 0,5		~1340 x 0,3							
120	37 x 2,03		336 x 0,67		~614 x 0,5		~1690 x 0,3							
150	37 x 2,27		392 x 0,69		~765 x 0,5		~2123 x 0,3							
185	37 x 2,52		494 x 0,69		~944 x 0,5		~1470 x 0,4							
240	37 x 2,87		627 x 0,70		~1225 x 0,5		~1905 x 0,4							
300	61 x 2,50		790 x 0,70		~1530 x 0,5		~2385 x 0,4							
400	61 x 2,89				~2035 x 0,5									
500	61 x 3,23				~1768 x 0,6									
630	91 x 2,97				~2228 x 0,6									

- 1)

The number of individual wires are without obligation.

2)

The diameters of the single wires for each conductor are not allowed to exceed the values stated to DIN VDE 0295. The single wires of a stranded conductor must have all the same nominal diameters.

3)

Minimum-number of single wires of stranded conductor. The single wires of a stranded conductor must have all the same nominal diameters.

2)

Note:

permissible maximal diameter of single wires:

nominal value
mm

maximal value
mm

0,2

0,21

0,25

0,26

0,3

0,31

0,4

0,41

0,5

0,51

0,6

0,61
- Conversion AWG to (mm²)
- | AWG | mm² | AWG | mm² | AWG | mm² | kcmil | mm² |
|-----|------|-----|------|-----|-----|------------|-----|
| 30 | 0,05 | 18 | 0,75 | 6 | 16 | 300 kcmil | 150 |
| 28 | 0,08 | 17 | 1,00 | 4 | 25 | 350 kcmil | 185 |
| 26 | 0,14 | 16 | 1,50 | 2 | 35 | 500 kcmil | 240 |
| 24 | 0,25 | 14 | 2,50 | 1 | 50 | 600 kcmil | 300 |
| 22 | 0,34 | 12 | 4 | 2/0 | 70 | 750 kcmil | 400 |
| 21 | 0,38 | 10 | 6 | 3/0 | 95 | 1000 kcmil | 500 |
| 20 | 0,50 | 8 | 10 | 4/0 | 120 | | |
- This cross reference list shows equivalent nominal values. Actual cross sections may vary. The AWG values are approximate, if the cables are made to European Standards (mm²) and vice versa. In critical applications, where the current reaches upper limits. The deviating operation conditions for installation and laying according to standards are to be taken into consideration.
- 1

Current ratings (general) for flexible cables, for non-existing cable types in the previous tables
- The indicated values stated in the following table are considered as guiding values in an abbreviate form, extracted from DIN VDE 0298 part 4 and DIN VDE 0100 part 430. In a critical situation the DIN VDE recommendations should be considered. For industrial machines the DIN VDE 0113, part 1 (EN 60204 part 1/IEC 204-1) is valid; for telephone and information systems DIN VDE 0891 part 1; for telephone aerial cables DIN VDE 0891 part 8 and for flat cables DIN VDE 0891 part 10. General terms and recommended values are contained in DIN VDE 0298 part 2 and part 4.
- Power rating values for 1,5–120 mm² (group 3 up to 35 mm²) according to DIN VDE 0100 part 430 at an:
- Ambient temperature up to 30°C
- | Nominal cross-section
mm² | Group 1 | | Group 2 | | Group 3 | |
|------------------------------|--------------|-----------------|--------------|-----------------|--------------|-----------------|
| | power rating | protective fuse | power rating | protective fuse | power rating | protective fuse |
| | A | A | A | A | A | A |
| 0,05 | 1 | – | 1 | – | 2 | – |
| 0,14 | 2 | – | 2 | – | 3,5 | – |
| 0,25 | 4 | – | 4,5 | – | 6 | – |
| 0,34 | 6 | – | 6 | – | 9 | – |
| 0,5 | 9 | – | 9 | – | 12 | – |
| 0,75 | 12 | – | 12 | 10 | 15 | 10 |
| 1 | 15 | 10 | 15 | 10 | 19 | 16 |
| 1,5 | 18 | 16 | 18 | 16 | 24 | 20 |
| 2,5 | 26 | 25 | 26 | 25 | 32 | 25 |
| 4 | 34 | 25 | 34 | 25 | 42 | 35 |
| 6 | 44 | 35 | 44 | 35 | 54 | 50 |
| 10 | 61 | 50 | 61 | 50 | 73 | 63 |
| 16 | 82 | 80 | 82 | 63 | 98 | 80 |
| 25 | 108 | 100 | 108 | 80 | 129 | 100 |
| 35 | 135 | 125 | 135 | 100 | 158 | 125 |
| 50 | 168 | 160 | 168 | 125 | 198 | 160 |
| 70 | 207 | 200 | 207 | 160 | 245 | 200 |
| 95 | 250 | 250 | 250 | 200 | 292 | 250 |
| 120 | 292 | 250 | 292 | 250 | 344 | 315 |
| 150 | 335 | 315 | 335 | 315 | 391 | 355 |
| 185 | 382 | 355 | 382 | 355 | 448 | 400 |
| 240 | – | – | 453 | 425 | 528 | 500 |
| 300 | – | – | 523 | 500 | 608 | 600 |
| 400 | – | – | – | – | 726 | 630 |
- group 1

One or more single core cables and insulated wires laid in duct i. e. PVC-sheathed single cores H 03V. ./H 05V. ./H 07V. . according to VDE 0281.

group 2

Multi core cables, i. e. light PVC-sheathed cables, flexible cables, metal-clad wiring cables in open or ventilated conduits.

group 3

Single core cables, laid open in air with a spacing at least equal to cable diameter, such as single core wirings for switch- and distribution cabinets and rail line distributors.
- Conversion factors for deviating ambient temperatures:
- | Ambient temperature over 30°C | | | Ambient temperature over 50°C (heat-resistant) | | | |
|-------------------------------|--|---|---|------|--|------|
| Ambient temperature
°C | Conversion factors, applied to the above current ratings table | | Conversion factors, applied to the above current ratings table | | | |
| | Rubber insulation
Permissible operating temp. at conductor
Conversion factors up to 60°C | PVC insulation
Permissible operating temp. at conductor
Conversion factors up to 70°C | Permissible operating temperature at conductor
Conversion factors up to 90°C | | Permissible operating temperature at conductor
Conversion factors up to 110°C | |
| over 30 bis 35 | 0,91 | 0,94 | over 50 bis 55 | 0,94 | over 50 bis 55 | 1,00 |
| over 35 bis 40 | 0,82 | 0,87 | over 55 bis 60 | 0,87 | over 55 bis 60 | 1,00 |
| over 40 bis 45 | 0,71 | 0,79 | over 60 bis 65 | 0,79 | over 60 bis 65 | 1,00 |
| over 45 bis 50 | 0,58 | 0,71 | over 65 bis 70 | 0,71 | over 65 bis 70 | 1,00 |
| over 50 bis 55 | 0,41 | 0,61 | over 70 bis 75 | 0,61 | over 70 bis 75 | 1,00 |
| over 55 bis 60 | – | 0,50 | over 75 bis 80 | 0,50 | over 75 bis 80 | 1,00 |
| over 60 bis 65 | – | 0,35 | over 80 bis 85 | 0,35 | over 80 bis 85 | 0,91 |
| | | | over 85 bis 90 | – | over 85 bis 90 | 0,82 |
| | | | | | over 90 bis 95 | 0,71 |
| | | | | | over 95 bis 100 | 0,58 |
| | | | | | over 100 bis 105 | 0,41 |
| | | | | | over 105 bis 110 | – |
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- 121

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Colour code according to DIN 47100

with colour repetition from core no. 45 and above

Electronic control and computer cable: **single cores** stranding

The insulation of the conductor gives the first basic colour. The codes of the multi-coloured identification are combined with a basic colour and colour rings. The second and third colour is printed on the basic colour as a form of ring. The ring width is 2–3 mm.

The cores are to be counted continuously through all layers in the same direction, beginning with the outer layer towards inside.

No. Basic-Ring-colours	No. Basic-Ring-colours	No. Basic-Ring-colours	No. Basic-Ring-colours
1 white	17 white-grey	33 green-red	45 white
2 brown	18 grey-brown	34 yellow-red	46 brown
3 green	19 white-pink	35 green-black	47 green
4 yellow	20 pink-brown	36 yellow-black	48 yellow
5 grey	21 white-blue	37 grey-blue	49 grey
6 pink	22 brown-blue	38 pink-blue	50 pink
7 blue	23 white-red	39 grey-red	51 blue
8 red	24 brown-red	40 pink-red	52 red
9 black	25 white-black	41 grey-black	53 black
10 violet	26 brown-black	42 pink-black	54 violet
11 grey-pink	27 grey-green	43 blue-black	55 grey-pink
12 red-blue	28 yellow-grey	44 red-black	56 red-blue
13 white-green	29 pink-green		57 white-green
14 brown-green	30 yellow-pink		58 brown-green
15 white-yellow	31 green-blue		59 white-yellow
16 yellow-brown	32 yellow-blue		60 yellow-brown
			61 white-grey

Colour code adapted* to DIN 47100

without colour repetition

No. Basic-Ring-colours	No. Basic-Ring-colours	No. Basic-Ring-colours	No. Basic-Ring-colours
1 white	17 white-grey	33 green-red	45 white-brown-black
2 brown	18 grey-brown	34 yellow-red	46 yellow-green-black
3 green	19 white-pink	35 green-black	47 grey-pink-black
4 yellow	20 pink-brown	36 yellow-black	48 red-blue-black
5 grey	21 white-blue	37 grey-blue	49 white-green-black
6 pink	22 brown-blue	38 pink-blue	50 brown-green-black
7 blue	23 white-red	39 grey-red	51 white-yellow-black
8 red	24 brown-red	40 pink-red	52 yellow-brown-black
9 black	25 white-black	41 grey-black	53 white-grey-black
10 violet	26 brown-black	42 pink-black	54 grey-brown-black
11 grey-pink	27 grey-green	43 blue-black	55 white-pink-black
12 red-blue	28 yellow-grey	44 red-black	56 pink-brown-black
13 white-green	29 pink-green		57 white-blue-black
14 brown-green	30 yellow-pink		58 brown-blue-black
15 white-yellow	31 green-blue		59 white-red-black
16 yellow-brown	32 yellow-blue		60 brown-red-black
			61 black-white

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Current ratings for silicone cables and wires

The indicated values stated in the following table are considered as guiding values. These are to be selected for each individual application.

Heat-resistance at an ambient **temperature up to 150°C**

	Group 1		Group 2		Group 3	
Nominal-cross-section	current-carrying capacity A	protective fuse A	current-carrying capacity A	protective fuse A	current-carrying capacity A	protective fuse A
0,25	2,8	–	–	–	5	–
0,5	6	–	7	–	10	–
0,75	9	6	12	6	15	10
1,0	12	10	15	10	19	20
1,5	16	16	18	16	24	25
2,5	21	20	26	25	32	35
4	28	25	34	35	42	50
6	36	35	44	50	54	63
10	49	50	61	63	73	80
16	65	63	82	80	98	100
25	85	83	108	100	129	125
35	105	100	135	–	158	160
50	140	125	168	–	198	200
70	175	160	207	–	245	250
95	210	200	250	–	292	300
120	250	250	292	–	344	335
150	–	–	335	–	391	–
185	–	–	382	–	448	–
240	–	–	453	–	528	–
300	–	–	523	–	608	–

- Group 1:** One or more single core cables laid in duct.
Group 2: Multicore cables, flexible cables laid in open or ventilated conduits.
Group 3: Single core cables laid in open air with a spacing at least equal to cable diameter.

Power ratings for
ambient temperature over 150°C
The following conversion factors are valid:

Temperature °C	current-carrying capacity values in %
up to 150	100
over 150 to 155	91
over 155 to 160	82
over 160 to 165	71
over 165 to 170	58
over 170 to 175	41