ÖLFLEX®

UNITRONIC®

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ELECTROUSTIC
DISTRIBUTION OF CONNECTIVITY SOLUTIONS

The Little Lapp Book - 2nd Edition

LAPP GROUP

The Little Lapp Book

2nd Edition

Welcome to the 2nd edition of our updated product guide from the Lapp Group.

In response to comments from Lapp customers we have included a section containing a range of technical tables to assist in the selection of the correct cable for your application. However if you require a more detailed specification on any of the products we supply, visit our extensive website at

www.lappgroup.co.uk

Lapp products are used in a wide variety of demanding industrial and commercial applications, including factory automation and robotics, materials handling, processing, packaging and building services.

As a manufacturer we ensure the end product is of the highest order. All of the cable, glands and connectors we sell have been tested to meet stringent quality and durability requirements prior to delivery. Such testing ensures reliability on site, making for cost effective installation.

The more complex the application, the more bespoke cables have to be produced. With many years of experience of materials such as PVC, PUR, Rubber, Silicone, TPE and Low smoke halogen free compounds, from basic multi-core cables to composite cables Lapp Group can design and manufacture a cable to a customers exact requirements.
Of course, a custom cable does not always have to be highly complex, and from printing customer details to a change of outer sheath colour, Lapp is always willing to assist in solving your requirements.

With our extensive range of cables, glands and connectors, Lapp are in a great position to offer their customers assembled components to meet their requirements at competitive prices.

Whatever you application, you can be confident that the Lapp Group will have the solution.

ÖLFLEX® CLASSIC 100

The ÖLFLEX® Classic 100 colour coded range is ideally suited for use as control, signal and power cables in a variety of applications. Its high flexibility ensures easy installation whilst the tough external sheathing will resist the effects of many acids, caustic solutions and various oils.

Areas of use include machine tool engineering, plant installations, car production lines, bottling plants and other automated production facilities.

SPECIFICATION

Cores are of plain electrolytic fine copper wire strands with a PVC based insulation. Cores laid up in various colours to the ÖLFLEX® colour code. Outer sheath of a special PVC-based compound in silver-grey.

TECHNICAL DATA

Minimum bending radius for flexing:	15x Cable Diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -40°C to +80°C
Working Voltage:	300/500V ≤ 1.5mm² 450/750V ≥ 2.5mm²
Conductor Stranding:	To IEC 60228 Class 5, VDE 0295 Class 5
Colour Code:	Up to 5 cores: VDE 0293, BS 6500 From 6 cores: ÖLFLEX® Colour Code
In accordance with VDE Regulations:	Cores to VDE 0245/0281 Sheath to VDE 0245/0281

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	00100004	2 X 1.0	00100414	2 X 4.0	0010100
3 G 0.5	00100014	3 G 1.0	00100424	4 G 4.0	00101013
3 X 0.5	00101224	3 X 1.0	00102034	5 G 4.0	00101023
4 G 0.5	00100024	4 G 1.0	00100434	7 G 4.0	0010103
4 X 0.5	00101234	5 G 1.0	00100444		
5 G 0.5	00100034	5 X 1.0	00102054	3 G 6.0	0010105
5 X 0.5	00101244	6 G 1.0	0010045	4 G 6.0	00101063
6 G 0.5	0010004	7 G 1.0	0010046	5 G 6.0	00101073
7 G 0.5	0010005	8 G 1.0	0010047	7 G 6.0	0010108
8 G 0.5	0010006	10 G 1.0	0010049		
10 G 0.5	0010007	12 G 1.0	0010050	3 G 10.0	0010301
12 G 0.5	0010008	16 G 1.0	0010052	4 G 10.0	00101093
14 G 0.5	0010009	18 G 1.0	0010053	5 G 10.0	00101103
16 G 0.5	0010010	20 G 1.0	0010054	7 G 10.0	0010111
21 G 0.5	0010011	25 G 1.0	0010056		
24 G 0.5	0010012			3 G 16.0	0010302
27 G 0.5	0010013	2 X 1.5	00100663	4 G 16.0	00101123
40 G 0.5	0010016	3 G 1.5	00100664	5 G 16.0	00101133
		3 X 1.5	00101284		
2 X 0.75	00100214	4 G 1.5	00100654	3 G 25.0	0010303
3 G 0.75	00100224	4 X 1.5	00101294	4 G 25.0	00101153
3 X 0.75	00101254	5 G 1.5	00100664	5 G 25.0	00101163
4 G 0.75	00100234	5 X 1.5	00101304		
4 X 0.75	00101264	7 G 1.5	0010068	3 G 35.0	0010304
5 G 0.75	00100244	8 G 1.5	0010069	4 G 35.0	00101173
5 X 0.75	00101274	12 G 1.5	0010071	5 G 35.0	00101183
6 G 0.75	0010025	14 G 1.5	0010072		
7 G 0.75	0010026	18 G 1.5	0010074	3 G 50.0	0010305
8 G 0.75	0010027	25 G 1.5	0010076	4 G 50.0	00101193
9 G 0.75	0010028				
10 G 0.75	0010029	2 X 2.5	0010086	3 G 70.0	0010306
12 G 0.75	0010030	3 G 2.5	0010087	4 G 70.0	00101203
15 G 0.75	0010031	4 G 2.5	00100883		
18 G 0.75	0010032	5 G 2.5	00100893	3 G 95.0	0010307
21 G 0.75	0010033	7 G 2.5	0010091	4 G 95.0	00101213
25 G 0.75	0010034	8 G 2.5	0010092		
40 G 0.75	0010036			3 G 120.0	0010308
50 G 0.75	0010037			4 G 120.0	00103093

G = With Protective Conductor X = Without Protective Conductor

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ÖLFLEX® CLASSIC 110

The ÖLFLEX® Classic 110 number coded range is similar to the colour coded version and is therefore ideally suited for use as control, signal and power cable in a variety of applications. Its high flexibility ensures easy installation whilst the tough external sheathing will resist the effects of many acids, caustic solutions and various oils.

Areas of use include machine tool engineering, plant installations, car production lines, bottling plants and other automated production facilities.

SPECIFICATION

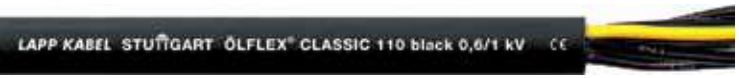
Cores are of electrolytic fine copper wire strands with a PVC-based insulation. Cores laid up in black with white consecutive numbering. Outer sheath of a special PVC-based compound in a silver-grey.

TECHNICAL DATA

Minimum bending radius for flexing:	15x Cable Diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -40°C to +80°C
Working Voltage:	300/500V
Conductor Stranding:	To IEC 60228 Class 5, VDE 0295 Class 5
Colour Code:	Black cores, white numbers (VDE 0293)
In accordance with VDE Regulations:	VDE Reg No. 7030 up to and including 60 cores

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	1119752	2 X 1.0	1119852	16 G 1.5	1119316
3 G 0.5	1119003	3 G 1.0	1119203	18 G 1.5	1119318
3 X 0.5	1119753	3 X 1.0	1119853	21 G 1.5	1119321
4 G 0.5	1119004	4 G 1.0	1119204	25 G 1.5	1119325
4 X 0.5	1119754	4 X 1.0	1119854	26 G 1.5	1119326
5 G 0.5	1119005	5 G 1.0	1119205	32 G 1.5	1119332
5 X 0.5	1119755	5 X 1.0	1119855	34 G 1.5	1119334
7 G 0.5	1119007	6 G 1.0	1119206	41 G 1.5	1119341
7 G 0.5	1119757	7 G 1.0	1119207	50 G 1.5	1119350
10 G 0.5	1119010	7 X 1.0	1119857	61 G 1.5	1119361
12 G 0.5	1119012	8 G 1.0	1119208	65 G 1.5	1119365
14 G 0.5	1119014	9 G 1.0	1119209	80 G 1.5	1119380
18 G 0.5	1119018	10 G 1.0	1119210	2 X 2.5	1119952
21 G 0.5	1119021	12 G 1.0	1119212	3 G 2.5	1119403
25 G 0.5	1119025	12 X 1.0	1119862	4 G 2.5	1119404
30 G 0.5	1119030	14 X 1.0	1119214	5 G 2.5	1119405
35 G 0.5	1119035	16 G 1.0	1119216	7 G 2.5	1119407
40 G 0.5	1119040	18 G 1.0	1119218	12 G 2.5	1119412
52 G 0.5	1119052	18 X 1.0	1119868	14 G 2.5	1119414
61 G 0.5	1119061	20 G 1.0	1119220	18 G 2.5	1119418
65 G 0.5	1119065	20 X 1.0	1119870	25 G 2.5	1119425
80 G 0.5	1119080	25 G 1.0	1119225	34 G 2.5	1119434
100 G 0.5	1119100	26 G 1.0	1119226	50 G 2.5	1119450
2 X 0.75	1119802	34 G 1.0	1119234	3 G 4.0	1119503
3 G 0.75	1119103	36 G 1.0	1119236	4 G 4.0	1119504
3 X 0.75	1119803	40 G 1.0	1119240	5 G 4.0	1119505
4 G 0.75	1119104	41 G 1.0	1119241	7 G 4.0	1119507
4 X 0.75	1119804	50 G 1.0	1119250	11 G 4.0	1119511
5 G 0.75	1119105	56 G 1.0	1119256	3 G 6.0	1119603
5 X 0.75	1119805	61 G 1.0	1119261	4 G 6.0	1119604
7 G 0.75	1119107	65 G 1.0	1119265	5 G 6.0	1119605
7 G 0.75	1119807	80 G 1.0	1119280	7 G 6.0	1119607
9 G 0.75	1119109	100 G 1.0	1119300	3 G 10.0	1119613
10 G 0.75	1119110	2 X 1.5	1119902	4 G 10.0	1119614
12 G 0.75	1119112	3 G 1.5	1119303	5 G 10.0	1119615
12 X 0.75	1119812	3 X 1.5	1119903	7 G 10.0	1119617
15 G 0.75	1119115	4 G 1.5	1119304	4 G 16.0	1119624
16 X 0.75	1119116	4 X 1.5	1119904	5 G 16.0	1119625
18 G 0.75	1119118	5 G 1.5	1119305	7 G 16.0	1119627
21 G 0.75	1119121	5 X 1.5	1119905	4 G 25.0	1119634
25 G 0.75	1119125	7 G 1.5	1119307	5 G 25.0	1119635
26 G 0.75	1119126	7 X 1.5	1119907	4 G 35.0	1119644
34 G 0.75	1119134	8 G 1.5	1119308	5 G 35.0	1119645
41 G 0.75	1119141	9 G 1.5	1119309		
50 G 0.75	1119150	10 G 1.5	1119310	G = With Protective Conductor	
61 G 0.75	1119161	11 G 1.5	1119311		
65 G 0.75	1119165	12 G 1.5	1119312	X = Without Protective Conductor	
80 G 0.75	1119180	12 X 1.5	1119912		
100 G 0.75	1119200	14 G 1.5	1119314		

ÖLFLEX® CLASSIC 110 BLACK/110 BLACK CY



The ÖLFLEX® Classic 110 Black 0.6/1 kV number coded range is ideally suited for use as control, signal and power cable in a variety of applications. It is UV resistant and is possible to be used outdoors when considering the temperature range. It's flexibility ensures easy installation whilst the tough external sheathing will resist the effects of many acids, caustic solutions and various oils. The CY version contains a copper wire braid for EMC protection.

Areas of use include machine tool engineering, plant installations, car production lines, bottling plants and other automated production facilities.

SPECIFICATION

Cores are of electrolytic fine copper wire strands with a PVC-based insulation. Core identification is black with white consecutive numbering. Outer sheath of a special PVC-based compound in black. CY version contains an additional inner sheath of black PVC and a tinned copper wire braid.

TECHNICAL DATA

Minimum bending radius for flexing:	15 x cable diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -40°C to +80°C
Working Voltage:	600/1000V
Conductor Stranding:	To IEC 60228 Class 5, VDE 0295 Class 5
Colour identification:	Black cores, white numbers (VDE 2093)
UV Resistant:	acc. to ISO 4892-2
Ozone Resistant:	acc. to EN 50396

ÖLFLEX® CLASSIC 110 BLACK 0.6/1KV

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.75	1120232	2 X 1.5	1120306	4 G 4.0	1120360
3 G 0.75	1120233	3 G 1.5	1120307	5 G 4.0	1120361
4 G 0.75	1120235	4 G 1.5	1120309	7 G 4.0	1120362
5 G 0.75	1120237	5 G 1.5	1120311	4 G 6.0	1120366
7 G 0.75	1120241	7 G 1.5	1120314	5 G 6.0	1120367
12 G 0.75	1120248	12 G 1.5	1120320	7 G 6.0	1120368
18 G 0.75	1120251	18 G 1.5	1120324	4 G 10.0	1120370
41 G 0.75	1120259	25 G 1.5	1120328	5 G 10.0	1120371
		34 G 1.5	1120330	4 G 16.0	1120374
2 X 1.0	1120266	50 G 1.5	1120333	5 G 16.0	1120375
3 G 1.0	1120267			7 G 16.0	1120376
4 G 1.0	1120269	2 X 2.5	1120339	4 G 25.0	1120378
5 G 1.0	1120271	3 G 2.5	1120340	5 G 25.0	1120379
7 G 1.0	1120274	4 G 2.5	1120342	4 G 35.0	1120382
12 G 1.0	1120280	5 G 2.5	1120344	5 G 35.0	1120383
18 G 1.0	1120284	7 G 2.5	1120346	5 G 50.0	1120385
25 G 1.0	1120290	12 G 2.5	1120349	4 G 70.0	1120387
34 G 1.0	1120294	18 G 2.5	1120351	4 G 95.0	1120389
41 G 1.0	1120298	25 G 2.5	1120353	4 G120.0	1120390

ÖLFLEX® CLASSIC 110 BLACK CY 0.6/1KV

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.75	1121232	2 X 1.5	1121306	4 G 6.0	1121367
3 G 0.75	1121233	3 G 1.5	1121307	5 G 6.0	1121368
4 G 0.75	1121235	4 G 1.5	1121309	7 G 6.0	1121369
5 G 0.75	1121237	5 G 1.5	1121311	4 G 10.0	1121372
7 G 0.75	1121241	7 G 1.5	1121314	5 G 10.0	1121373
12 G 0.75	1121247	12 G 1.5	1121320	4 G 16.0	1121377
18 G 0.75	1121251	18 G 1.5	1121324	5 G 16.0	1121378
25 G 0.75	1121254	25 G 1.5	1121328	4 G 25.0	1121381
				5 G 25.0	1121382
2 X 1.0	1121266	3 G 2.5	1121340	4 G 35.0	1121385
3 G 1.0	1121267	4 G 2.5	1121342	5 G 50.0	1121388
4 G 1.0	1121269	5 G 2.5	1121344	4 G 70.0	1121391
5 G 1.0	1121271	7 G 2.5	1121346	4 G 95.0	1121394
7 G 1.0	1121274	12 G 2.5	1121349	4 G120.0	1121397
12 G 1.0	1121280				
18 G 1.0	1121284	4 G 4.0	1120360		
25 G 1.0	1121290	5 G 4.0	1120361		
		7 G 4.0	1120362		

G = With Protective Conductor
X = Without Protective Conductor

ÖLFLEX® CLASSIC 100 SY

Having all of the benefits of the standard ÖLFLEX® Classic range, SY cable has the additional protection of a galvanised steel wire braid and transparent PVC outer sheath. It retains flexibility and ease of installation and offers a high degree of mechanical protection often extending the service life of an installation.

Ideal for many industrial applications including the machine tool industry, where the extra protection of SY will prove invaluable.

SPECIFICATION

Plain electrolytic fine copper wire strands with PVC-based conductor insulation. Cores laid up in various colour to the ÖLFLEX® colour code. Grey inner sheath of special PVC compound, galvanised steel wire braid and transparent PVC outer sheath.

TECHNICAL DATA

Minimum bending radius for flexing:	20x Cable Diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -40°C to +80°C
Working Voltage:	300/500V ≤ 1.5mm² 450/750V ≤ 2.5mm²
Conductor Stranding:	Fine wire to VDE 0295 Class 5, IEC 60228
Colour Code:	Up to 5 cores: VDE 0293, BS 6500 From 6 cores: ÖLFLEX® Colour Code
In accordance with VDE Regulations:	Cores to VDE 0245/0281 Sheath to VDE 0245/0281

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm per conductor	Part No.
2 X 0.75	0016022	2 X 1.5	0016064	2 X 4.0	0016101
3 G 0.75	0016023	3 G 1.5	0016065	4 G 4.0	00161023
4 G 0.75	00160243	4 G 1.5	00160663	5 G 4.0	00161033
5 G 0.75	00160253	5 G 1.5	00160673		
6 G 0.75	0016026	7 G 1.5	0016069	3 G 6.0	00161063
7 G 0.75	0016027	12 G 1.5	0016072	4 G 6.0	00161073
8 G 0.75	0016028	18 G 1.5	0016075	5 G 6.0	00161083
10 G 0.75	0016030	25 G 1.5	0016077		
12 G 0.75	0016031	32 G 1.5	0016078	4 G 10 .0	00161103
				5 G 10.0	00161113
2 X 1.0	0016042	2 X 2.5	0016087		
3 G 1.0	0016043	3 G 2.5	0016088	4 G 16.0	00161133
4 G 1.0	00160443	4 G 2.5	00160893	5 G 16.0	00161143
5 G 1.0	00160453	5 G 2.5	00160903		
7 G 1.0	0016047	7 G 2.5	0016092	4 G 25.0	00161163
25 G 1.0	0016057			5 G 25.0	00161173
				4 G 35.0	00161183
				5 G 35.0	00161193
				4 G 50.0	00161203

G = With Protective Conductor X = Without Protective Conductor

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ÖLFLEX® CLASSIC 110 SY

The numbered range of ÖLFLEX® Classic SY cables has the protection of a galvanised steel wire braid and transparent PVC outer sheath. It retains flexibility and ease of installation and offers a high degree of mechanical protection often extending the service life of an installation.

Ideal for many industrial applications, including the machine tool industry where the extra protection of SY will prove invaluable.

SPECIFICATION

Plain electrolytic fine copper wire strands with PVC-based conductor insulation. Cores are laid up in black with white consecutive numbering. Grey inner sheath of special PVC compound galvanised steel wire braid and transparent PVC outer sheath.

TECHNICAL DATA

Minimum bending radius for flexing:	20x Cable Diameter
Temperature Range:	Occasional flexing: -5°C to +70°C Static: -40°C to +80°C
Working Voltage:	300/500V
Conductor Stranding:	Fine wire to VDE 0295 Class 5, IEC 60228 Class 5
Colour Code:	Black cores, white numbers (VDE 2093)
In accordance with VDE Regulations:	VDE Reg No. 7030 for sizes up to 60 cores

No. of cores & mm^2 per conductor	Part No.	No. of cores & mm^2 per conductor	Part No.	No. of cores & mm^2 per conductor	Part No.
2 X 0.5	1125752	2 X 1.0	1125852	3 G 2.5	1125403
3 G 0.5	1125003	3 G 1.0	1125203	4 G 2.5	1125404
4 G 0.5	1125004	4 G 1.0	1125204	5 G 2.5	1125405
5 G 0.5	1124005	5 G 1.0	1125205	7 G 2.5	1125407
7 G 0.5	1125007	7 G 1.0	1125207	12 G 2.5	1125412
10 G 0.5	1125010	8 G 1.0	1125208	18 G 2.5	1125418
12 G 0.5	1125012	9 G 1.0	1125209	25 G 2.5	1125425
14 G 0.5	1125014	12 G 1.0	1125212		
18 G 0.5	1125018	14 G 1.0	1125214	3 G 4.0	1125503
21 G 0.5	1125021	18 G 1.0	1125218	4 G 4.0	1125504
25 G 0.5	1125025	20 G 1.0	1125220	5 G 4.0	1125505
30 G 0.5	1125030	25 G 1.0	1125225	7 G 4.0	1125507
40 G 0.5	1125040	34 G 1.0	1125234		
61 G 0.5	1125061	41 G 1.0	1125241	4 G 6.0	1125604
		50 G 1.0	1125250	5 G 6.0	1125605
2 X 0.75	1125802	65 G 1.0	1125265	7 G 6.0	1125607
3 G 0.75	1125103				
4 G 0.75	1125104	2 X 1.5	1125902	4 G 10.0	1125614
5 G 0.75	1125105	3 G 1.5	1125303	5 G 10.0	1125615
7 G 0.75	1125107	4 G 1.5	1125304	7 G 10.0	1125617
9 G 0.75	1125109	5 G 1.5	1125305		
12 G 0.75	1125112	7 G 1.5	1125307	4 G 16.0	1125624
15 G 0.75	1125115	8 G 1.5	1125308	5 G 16.0	1125625
18 G 0.75	1125118	12 G 1.5	1125312		
25 G 0.75	1125125	14 G 1.5	1125314	4 G 25.0	1125626
34 G 0.75	1125134	18 G 1.5	1125318	5 G 25.0	1125630
50 G 0.75	1125150	25 G 1.5	1125325		
		32 G 1.5	1125332	4 G 35.0	1125629
		41 G 1.5	1125341		
		50 G 1.5	1125350		

G = With Protective Conductor X = Without Protective Conductor

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ÖLFLEX® CLASSIC 100 CY

Having a larger conductor cross section, ÖLFLEX® Classic 100 CY provides the electronics engineer with a colour coded cable for the transmission of low or medium voltage signals free from external interference. It can be utilised where the power engineer needs to use screened cables to prevent interference from electro-magnetic fields generated in the network.

Suitable for use where a high degree of circuit integrity is required and where interference can prevent accurate signal transmission in low or medium voltage installations.

SPECIFICATION

Cores of fine wire strands of plain electrolytic copper with PVC-based conductor insulation in various colours to the ÖLFLEX® colour code. Cores twisted in layers with an internal sheath covering of a special PVC-based compound and screening braid of tinned copper wire. Outer sheath of transparent PVC-based compound.

TECHNICAL DATA

Minimum bending radius for flexing:	20x Cable Diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -30°C to +70°C
Working Voltage:	300/500V ≤ 1.0mm 450/750V ≤ 1.5mm
Conductor Stranding:	Fine wire to IEC 60228 Class 5, VDE 0295 Class 5
Colour Code:	BUp to 5 cores: VDE 0293, BS 6500 from 6 cores: ÖLFLEX® Colour Code
In accordance with VDE Regulations:	Conductors to VDE 0245/0281 Sheath to VDE 0245/0281

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0035001	2 X 1.5	0035000	3 G 16.0	0034954
3 G 0.5	0035002	3 G 1.5	0035458	4 G 16.0	00350223
4 G 0.5	00350033	4 G 1.5	00354593	5 G 16.0	00350153
5 G 0.5	00352013	5 G 1.5	00354603		
7 G 0.5	0035200	7 G 1.5	0035461	3 G 25.0	0034955
				4 G 25.0	00350233
2 X 0.75	0035004	3 G 2.5	0035011	5 G 25.0	00350243
3 G 0.75	0035004	4 G 2.5	00350173		
4 G 0.75	00350063	5 G 2.5	00350123	3 G 35.0	0034956
5 G 0.75	00350163	7 G 2.5	0035289	4 G 35.0	00350253
7 G 0.75	0035203			5 G 35.0	00350263
		4 G 4.0	00350183		
2 X 1.0	0035220	5 G 4.0	00350133	3 G 50.0	0034956
3 G 1.0	0035221			4 G 50.0	00350273
4 G 1.0	00352223	4 G 6.0	00350193		
5 G 1.0	00352233	5 G 6.0	00350143	4 G 70.0	00350283
7 G 1.0	0035204				
		3 G 10.0	0034953	4 G 95.0	00350293
		4 G 10.0	00350213		
		5 G 10.0	00352903	4 G 120.0	00354303

G = With Protective Conductor X = Without Protective Conductor

LAPP GROUP

ÖLFLEX® CLASSIC 110 CY

ÖLFLEX® Classic 110 CY provides the electronics engineer with a number coded cable for the transmission of low or medium voltage signals free from external inference. It can also be utilised where the power engineer needs to use screened cables to prevent interference from electro magnetic fields generated in the network.

Suitable for use where interference can prevent accurate signal transmission in low or medium voltage installations.

SPECIFICATION

Cores of fine wire strands of plain electrolytic copper with PVC based conductor insulation. Black with consecutive white numbering. Cores twisted in layers with an internal sheath covering of a special PVC-based compound and screening braid of tinned copper wire. Outer sheath of transparent PVC-based compound.

TECHNICAL DATA

Minimum bending radius for flexing:	15x Cable Diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -40°C to +80°C
Working Voltage:	300/500V
Conductor Stranding:	Fine wire to IEC 60228 Class 5, VDE 0295 Class 5
Colour Code:	Black cores, white numbers (VDE 2093)
In accordance with VDE Regulations:	VDE Reg No. 7030

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	1135752	2 X 1.0	1135852	2 X 2.5	1135402
3 G 0.5	1135003	3 G 1.0	1135203	3 G 2.5	1135403
3 X 0.5	1135753	3 X 1.0	1135853	4 G 2.5	1135404
4 G 0.5	1135004	4 G 1.0	1135204	5 G 2.5	1135405
4 X 0.5	1135754	4 X 1.0	1135854	7 G 2.5	1135407
5 G 0.5	1135005	5 G 1.0	1135205	12 G 2.5	1135412
5 X 0.5	1135755	7 G 1.0	1135207		
7 G 0.5	1135007	12 G 1.0	1135212	2 X 4.0	1135502
7 X 0.5	1135757	18 G 1.0	1135218	4 G 4.0	1135504
12 G 0.5	1135012	25 G 1.0	1135225	5 G 4.0	1135505
12 X 0.5	1135762	34 G 1.0	1135234		
18 G 0.5	1135018	41 G 1.0	1135241	2 X 6.0	1135602
25 G 0.5	1135025	50 G 1.0	1135250	3 G 6.0	1135604
30 G 0.5	1135030			5 G 6.0	1135605
40 G 0.5	1135040	2 X 1.5	1135902	7 G 6.0	1135607
		3 G 1.5	1135303		
2 X 0.75	1135802	3 X 1.5	1135903	2 X 10.0	1135702
3 G 0.75	1135103	4 G 1.5	1135304	3 G 10.0	1135615
3 X 0.75	1135803	4 X1.5	1135904	4 G 10.0	1135614
4 G 0.75	1135104	5 G 1.5	1135305	5 G 10.0	1135616
4 X 0.75	1135804	5 X 1.5	1135905		
5 G 0.75	1135105	7 G 1.5	1135307	3 G 16.0	1135622
5 X 0.75	1135805	7 X 1.5	1135907	4 G 16.0	1135624
7 G 0.75	1135107	12 G 1.5	1135312	5 G 16.0	1135623
7 X 0.75	1135807	18 G 1.5	1135318		
12 G 0.75	1135112	25 G 1.5	1135325	4 G 25.0	1135626
12 X 0.75	1135812	34 G 1.5	1135334	5 G 25.0	1135627
18 G 0.75	1135118	41 G 1.5	1135341		
18 X 0.75	1135818	50 G 1.5	1135350	4 G 35.0	1135625
25 G 0.75	1135125			5 G 35.0	1135628
34 G 0.75	1135134				
41 G 0.75	1135141				

G = With Protective Conductor X = Without Protective Conductor

LAPP GROUP

ÖLFLEX® CLASSIC 115 CY

The ÖLFLEX® Classic 115 CY is the slimmer lighter alternative for all applications where the ÖLFLEX® Classic CY range is utilised, with particular reference to EMC critical installations. This flexible alternative, ÖLFLEX® Classic 115 CY, can be used in fixed installations or where non-continuous but flexible movement is required.

SPECIFICATION

Cores of fine wire strands of plain copper wire with PVC-based conductor insulation, black with white consecutive numbering. Wrapping of insulating plastic foil, screen braiding of tinned copper wire. Outer sheath silver-grey PVC-based, flame retardant and self extinguishing.

TECHNICAL DATA

Minimum bending radius for flexing:	20x Cable Diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -40°C to +80°C
Working Voltage:	300/500V
Conductor Stranding:	Fine wire to IEC 60228 Class 5, VDE 0295 Class 5
Colour Identification:	Black cores, white numbers (VDE 2093)
In accordance with VDE Regulations:	Cores to VDE 0245/0250/0281 Sheath to VDE 0250/0281

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	1136752	2 X 1.0	1136852	3 G 2.5	1136403
3 G 0.5	1136003	3 G 1.0	1136203	4 G 2.5	1136404
3 X 0.5	1136753	3 X 1.0	1136853	5 G 2.5	1136405
4 G 0.5	1136004	4 G 1.0	1136204	7 G 2.5	1136407
4 X 0.5	1136754	4 X 1.0	1136854	12 G 2.5	1136412
5 G 0.5	1136005	5 G 1.0	1136205	18 G 2.5	1136418
5 X 0.5	1136755	5 X 1.0	1136855	25 G 2.5	1136425
7 G 0.5	1136007	7 G 1.0	1136207		
7 X 0.5	1136757	7 X 1.0	1136857	4 G 4.0	1136504
12 G 0.5	1136012	12 G 1.0	1136212	7 G 4.0	1136507
12 X 0.5	1136762	18 G 1.0	1136218		
18 G 0.5	1136018	25 G 1.0	1136225	4 G 6.0	1136604
18 X 0.5	1136768			7 G 6.0	1136605
25 G 0.5	1136025	2 X 1.5	1136902		
25 X 0.5	1136775	3 G 1.5	1136303	4 G 10.0	1136614
		3 X 1.5	1136903	5 G 10.0	1136615
2 X 0.75	1136802	4 G 1.5	1136304		
3 G 0.75	1136103	4 X 1.5	1136904	4 G 16.0	1136624
3 X 0.75	1136803	5 G 1.5	1136305	5 G 16.0	1136625
4 G 0.75	1136104	5 X 1.5	1136905		
4 X 0.75	1136804	7 G 1.5	1136307	4 G 25.0	1136634
5 G 0.75	1136105	7 X 1.5	1136907	5 G 25.0	1136635
5 X 0.75	1136805	12 G 1.5	1136312		
7 G 0.75	1136107	18 G 1.5	1136318	4 G 35.0	1136638
7 X 0.75	1136807	25 G 1.5	1136325		
12 G 0.75	1136112	34 G 1.5	1136334		
18 G 0.75	1136118				
25 G 0.75	1136125				
25 X 0.75	1136825				

G = With Protective Conductor X = Without Protective Conductor

LAPP GROUP

ÖLFLEX® 140 & 140 CY

A *harmonised* control cable for use indoors in dry, damp or wet conditions, where free movement is required without tensile stress and without positive guidance systems. Both the screened and unscreened versions are intended as connection cables for control equipment on machine tools, conveyor belts, handling systems and production lines.

SPECIFICATION

Harmonised Code: 140: HO5VV5-F; 140 CY: HO5VVC4V5-F
Cores of fine wire strands of plain copper wire with PVC based core insulation, black with white consecutive numbering, cores twisted in layers. Outer sheath of special PVC compound with enhanced oil resistance, sheath colour silver-grey. The CY version has an additional PVC inner sheath and tinned copper wire braid screen under the grey outer sheath.

TECHNICAL DATA

Minimum bending radius for flexing:	140: 12.5x Cable Diameter 140 CY: 20x Cable Diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -40°C to +80°C
Working Voltage:	300/500V
Conductor Stranding:	Fine wire to VDE 0295 Class 5, IEC 60228 Class 5,
Colour Identification:	Black cores, white numbers (VDE 2093)
In accordance with VDE Regulations:	VDE 0281 Part 13/HD21.13S1

ÖLFLEX® 140

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
3 G 0.5	0011000	3 G 1.0	0011018	12 G 1.5	0011030
4 G 0.5	0011104	4 G 1.0	0011304	18 G 1.5	0011031
5 G 0.5	0011001	5 G 1.0	0011019	25 G 1.5	0011032
7 G 0.5	0011002	7 G 1.0	0011020	34 G 1.5	0011033
12 G 0.5	0011003	12 G 1.0	0011021		
18 G 0.5	0011004	18 G 1.0	0011022	3 G 2.5	0011036
25 G 0.5	0011005	25 G 1.0	0011023	4 G 2.5	0011504
34 G 0.5	0011006	34 G 1.0	0011024	5 G 2.5	0011037
		41 G 1.0	0011341	7 G 2.5	0011038
3 G 0.75	0011009	50 G 1.0	0011025	12 G 2.5	0011039
4 G 0.75	0011204	61 G 1.0	0011026	18 G 2.5	0011040
5 G 0.75	0011010			25 G 2.5	0011041
7 G 0.75	0011011	3 G 1.5	0011027		
12 G 0.75	0011012	4 G 1.5	0011404		
18 G 0.75	0011013	5 G 1.5	0011028		
25 G 0.75	0011014	7 G 1.5	0011029		
34 G 0.75	0011015				
41 G 0.75	0011241				

ÖLFLEX® 140 CY

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
3 G 0.5	0035700	3 G 1.0	0035720	12 G 1.5	0035734
4 G 0.5	0035701	4 G 1.0	0035721	18 G 1.5	0035735
5 G 0.5	0035702	5 G 1.0	0035722	25 G 1.5	0035736
7 G 0.5	0035703	7 G 1.0	0035723		
12 G 0.5	0035704	12 G 1.0	0035724	3 G 2.5	0035740
		18 G 1.0	0035725	4 G 2.5	0035741
3 G 0.75	0035710	25 G 1.0	0035726	5 G 2.5	0035742
4 G 0.75	0035711	34 G 1.0	0035727	7 G 2.5	0035743
5 G 0.75	0035712			12 G 2.5	0035744
7 G 0.75	0035713	3 G 1.5	0035730		
12 G 0.75	0035714	4 G 1.5	0035731		
18 G 0.75	0035715	5 G 1.5	0035732		
25 G 0.75	0035716	7 G 1.5	0035733		
34 G 0.75	0035717				

G = With Protective Conductor

LAPP GROUP

ÖLFLEX® 150 Quattro & 150 CY Quattro

These control cables are internationally approved, having the three approvals: HAR, UL and CSA. These cables are suitable for a wide range of applications including control equipment on machine tools, conveyor, and assembly lines where moderate mechanical stresses occur.

SPECIFICATION

Cores of fine wire strands of plain copper wire with PVC based core insulation, cores twisted in layers. Outer sheath of special PVC compound with enhanced oil resistance, silver-grey. Black cores with white numbers. The CY version has a protective braid of copper wire, under the outer sheath.

TECHNICAL DATA

Minimum bending radius for flexing:	150: 12.5x Cable Diameter 150 CY: 20x Cable Diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -40°C to +80°C
UL/CSA:	Flexing: -5°C to +90°C Static: -40°C to +90°C
Working Voltage:	300/500V; UL & CSA 600V
Conductor Stranding:	Fine wire to VDE 0295 Class 5, IEC 60228 Class 5,
Colour Identification:	Black cores, white numbers (VDE 2093)
In accordance with VDE Regulations:	150: HO5VV5-F HAR, UL-AWM style 2587, CSA-AWM IA/B II A/B 150 CY: HO5VVC4V5-K HAR AWM style 2587, AWM IA/B II A/B

ÖLFLEX® 150 Quattro

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0015002	2 X 1.0	0015202	12 G 1.5	0015312
3 G 0.5	0015003	3 G 1.0	0015203	18 G 1.5	0015318
4 G 0.5	0015004	4 G 1.0	0015204	25 G 1.5	0015325
5 G 0.5	0015005	5 G 1.0	0015205	34 G 1.5	0015334
7 G 0.5	0015007	7 G 1.0	0015207	41 G 1.5	0015341
12 G 0.5	0015012	12 G 1.0	0015212	50 G 1.5	0015350
25 G 0.5	0015025	18 G 1.0	0015218	*61 G 1.5	0015361
34 G 0.5	0015034	25 G 1.0	0015225		
41 G 0.5	0015041	34 G 1.0	0015234	2 X 2.5	0015402
		41 G 1.0	0015241	3 G 2.5	0015403
2 X 0.75	0015102	50 G 1.0	0015250	4 G 2.5	0015404
3 G 0.75	0015103	*61 G 1.0	0015261	5 G 2.5	0015405
4 G 0.75	0015103	*65 G 1.0	0015262	7 G 2.5	0015407
5 G 0.75	0015104			12 G 2.5	0015412
7 G 0.75	0015105	2 X 1.5	0015302	18 G 2.5	0015418
12 G 0.75	0015107	3 G 1.5	0015303	25 G 2.5	0015425
18 G 0.75	0015112	4 G 1.5	0015304		
25 G 0.75	0015118	5 G 1.5	0015305		
34 G 0.75	0015134				
41 G 0.75	0015141				

ÖLFLEX® 150 CY Quattro

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
3 G 0.75	0015603	5 G 1.0	0015705	12 G 1.5	0015812
4 G 0.75	0015604	7 G 1.0	0015707		
5 G 0.75	0015605	12 G 1.0	0015712	3 G 2.5	0015903
7 G 0.75	0015607			4 G 2.5	0015904
12 G 0.75	0015612	3 G 1.5	0015803	5 G 2.5	0015905
		4 G 1.5	0015804	7 G 2.5	0015907
3 G 1.0	0015703	5 G 1.5	0015805		
4 G 1.0	0015704	7 G 1.5	0015807		

G = With Protective Conductor X = Without Protective Conductor
* In accordance with HD 21 part 13

LAPP GROUP

ÖLFLEX® Control TM & TM CY

OLFLEX® CONTROL TM/TM CY is a flexible and oil resistant Tray and Machine Cable. The TM & TM CY cables have a broad application range due to the multiple approvals. In accordance to NFPA 79 Edition 2007 Article 12. CE compliant usage for Europe due to metric adapted sizes of the AWG conductors.

SPECIFICATION

Cores of fine wire strands of plain copper wire with PVC/Nylon based core insulation, cores twisted in layers. Black cores with white numbers. Outer sheath of special PVC compound with enhanced oil resistance, silver-grey. The CY version has a double screen of braided tinned copper wire and aluminium foil, under the outer sheath.

TECHNICAL DATA

Minimum bending radius for flexing:	TM: 6x Cable Diameter TM CY: 6x Cable Diameter
Temperature Range:	Occasional Flexing: -5°C to +90°C Static: -40°C to +70°C
Working Voltage:	UL & CSA: 600V (TC, MTW, CIC) UL & CSA: 1000V (AWM)
Conductor Stranding:	Fine wire metric adapted AWG sizes
Colour Code:	Black cores, white numbers
In accordance with VDE Regulations:	UL MTW and UL TC-ER c(UL) Type TC and CIC FT4 UL/CSA AWM I/II A/B FT4 NOM (Normas Oficiales Mexicanas)

ÖLFLEX® Control TM

No. of cores & mm² per conductor (AWG)	Part No.	No. of cores & mm² per conductor (AWG)	Part No.	No. of cores & mm² per conductor (AWG)	Part No.
3 G 1.0 (18)	281803	7 G 1.5 (16)	281607	5 G 4.0 (12)	281205
4 G 1.0 (18)	281804	12 G 1.5 (16)	281612	7 G 4.0 (12)	281207
5 G 1.0 (18)	281805	18 G 1.5 (16)	281618		
7 G 1.0 (18)	281807	25 G 1.5 (16)	281625	4 G 6.0 (10)	281004
12 G 1.0 (18)	281812			5 G 6.0 (10)	281005
18 G 1.0 (18)	281818	3 G 2.5 (14)	281403		
25 G 1.0 (18)	281825	4 G 2.5 (14)	281404	4 G 10.0 (8)	280804
		5 G 2.5 (14)	281405	5 G 10.0 (8)	280805
2 X 1.5 (16)	281602	7 G 2.5 (14)	281407		
3 G 1.5 (16)	281603			4 G 16.0 (6)	280604
4 G 1.5 (16)	281604	3 G 4.0 (12)	281203		
5 G 1.5 (16)	281605	4 G 4.0 (12)	281204		

ÖLFLEX® Control TM CY

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
3 G 1.0 (18)	281803CY	7 G 1.5 (16)	281607CY	5 G 4.0 (12)	281205CY
4 G 1.0 (18)	281804CY	12 G 1.5 (16)	281612CY	7 G 4.0 (12)	281207CY
5 G 1.0 (18)	281805CY	18 G 1.5 (16)	281618CY		
7 G 1.0 (18)	281807CY	25 G 1.5 (16)	281625CY	4 G 6.0 (10)	281004CY
12 G 1.0 (18)	281812CY			5 G 6.0 (10)	281005CY
18 G 1.0 (18)	281818CY	3 G 2.5 (14)	281403CY		
25 G 1.0 (18)	281825CY	4 G 2.5 (14)	281404CY	4 G 10.0 (8)	280804CY
		5 G 2.5 (14)	281405CY	5 G 10.0 (8)	280805CY
2 X 1.5 (16)	281602CY	7 G 2.5 (14)	281407CY		
3 G 1.5 (16)	281603CY			4 G 16.0 (6)	280604CY
4 G 1.5 (16)	281604CY	3 G 4.0 (12)	281203CY		
5 G 1.5 (16)	281605CY	4 G 4.0 (12)	281204CY		

G = With Protective Conductor X = Without Protective Conductor

LAPP GROUP

SINGLE CORE CABLES

H05V-K / H07V-K

A range of Harmonised approved PVC single core cables for use in the internal wiring of devices or for conduit or trunking wiring. Available from 0.5mm² up to 240mm² in a various range of colours.

TECHNICAL DATA

Minimum bending radius for flexing:	6 x cable diameterr
Temperature Range:	Static: -30°C to +80°C
Working Voltage:	H05V-K - 300/500V H07V-K - 450/750V
Conductor stranding:	Fine wire to VDE 0295, Class 5
Approvals:	HD21/VDE 0281

H05Z-K / H07Z-K

A range of Harmonised approved Low Smoke Halogen Free single core cables for use in applications where the protection of human life and the environment is at risk from the formation of acid from fire conditions. Available from 0.5mm² up to 95mm² in a various range of colours.

TECHNICAL DATA

Minimum bending radius for flexing:	6 x cable diameter
Temperature Range:	Static: -15°C to +90°C
Working Voltage:	H05VZ-K - 300/500V H07VZ-K - 450/750V
Conductor stranding:	Fine wire to VDE 0295, Class 5
Low Smoke Density:	EN 61034-2/VDE 0482-1034-2 & HD22.9
Halogen content:	EN 50267-2-2 / HD22.9 / VDE 0282-9
Approvals:	HD22.9

MULTI STANDARD APPROVED SINGLE CORE CABLES

Multi Standard SC 2.1 / Multi Standard SC 2.2

These multi standard wiring cables SC2.1 & SC2.2 are UL, CSA and HAR (VDE) approved and are designed for use in control panels as well as for installation in conduits and trunking, applicable within the scope of the UL or Canadian or European standard specifications. They are particularly designed for use in the wiring of industrial machines in accordance with NFPA 79. Available in sizes from 0.5mm² up to 120mm², and in a range of various colours.

TECHNICAL DATA

Minimum bending radius for flexing:	6 x cable diameter	
Temperature Range:		
Multi Standard SC2.1	HAR	-40°C to +70°C
	UL MTW	-40°C to +90°C
	UL(AWM)/CSA(TEW)	-40°C to +105°C
Multi Standard SC2.2	HAR / UL MTW	-40°C to +90°C
	UL(AWM)/CSA(TEW)	-40°C to +105°C
Working Voltage:	HAR - 450/750V	
	UL/CSA - 600V	
Conductor stranding:	Fine wire to VDE 0295, Class 5	
Design / Approvals:		
Multi Standard SC2.1	H07V-K acc to HD 21.3 S3+A1	
	UL MTW acc to UL 1063	
	UL (AWM) Style 1015 acc. to UL 758	
	CSA (TEW) acc. to C22.2 No. 127	
Multi Standard SC2.2	H07V2-K acc to HD 21.3 S3+A1	
	UL MTW acc to UL 1063	
	UL (AWM) Style 10269 acc. to UL 758	
	CSA (TEW) acc. to C22.2 No. 127	

ÖLFLEX® 110 H & 110 CH

A low smoke halogen free control cable suitable for use in damp or dry conditions under industrial environmental conditions. It is suitable as a control cable for static installation or for occasional flexing operations. Particularly useful where fire hazard is a consideration and areas where high value property is concentrated. The CH version contains a copper wire braid for EMC protection

SPECIFICATION

Cores of fine wire strands of plain copper wire with halogen free polymer compound. Outer sheath silver-grey halogen free polymer compound, oil resistant, flame retardant. Black cores with white numbers. 110 CH version contains an additional halogen free inner sheath and tinned copper wire braid.

TECHNICAL DATA

Minimum bending radius for flexing:	Occasional flexing: 10x Cable Diameter Static: 4x Cable Diameter
Temperature Range:	Flexing: -30°C to +70°C Fixed: -40°C to +80°C
Working Voltage:	300/500V
Flammability:	Flame retardant in acc. to IEC 60332-1-2 resp. VDE 0482-332-1-2 no flame propagation In acc. to IEC 60332-3-24 resp. EN50266-2-4 resp. VDE 0482 part 266-2-4 or in acc. to IEC 60332-3-25
Halogen Free:	acc. to IEC 60754-1 resp. VDE 0472 part 815
Corrosivity:	acc. to IEC 60754-2 resp. VDE 0472 part 267-2-3
Toxicity Index:	≤3 in acc. to NES 02-713 part 3
Smoke Density:	acc to IEC 61034-2 resp. VDE 0482 part 268
Tests:	acc to IEC 60811 resp. VDE 0473 and VDE 0472

ÖLFLEX® 110

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	10019900	12 G 1.0	10019969	4 G 4.0	10019950
3 G 0.5	10019901	18 G 1.0	10019971	5 G 4.0	10019951
4 G 0.5	10019903	25 G 1.0	10019972	7 G 4.0	10019952
5 G 0.5	10019905	2 X 1.5	10019930	4 G 6.0	10019953
7 G 0.5	10019906	3 G 1.5	10019931	5 G 6.0	10019954
12 G 0.5	10019907	4 G 1.5	10019932	7 G 6.0	10019975
2 X 0.75	10019910	5 G 1.5	10019933	4 G 10.0	10019851
3 G 0.75	10019911	7 G 1.5	10019934	5 G 10.0	10019852
4 G 0.75	10019913	12 G 1.5	10019935	4 G 16.0	10019849
5 G 0.75	10019915	18 G 1.5	10019937	5 G 16.0	10019853
7 G 0.75	10019917	25 G 1.5	10019938	4 G 25.0	10019854
12 G 0.75	10019920	34 G 1.5	10019927	5 G 25.0	10019855
18 G 0.75	10019921	2 X 2.5	10019944	4 G 35.0	10019856
25 G 0.75	10019922	3 G 2.5	10019945		
2 X 1.0	10019960	4 G 2.5	10019946	G = With Protective Conductor	
3 G 1.0	10019961	5 G 2.5	10019947		
4 G 1.0	10019963	7 G 2.5	10019948	X = Without Protective Conductor	
5 G 1.0	10019965	12 G 2.5	10019949		
7 G 1.0	10019967				

ÖLFLEX® 110 CH

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	10035030	12 G 1.0	10035062	4 G 4.0	10035094
3 G 0.5	10035031	18 G 1.0	10035063	5 G 4.0	10035095
4 G 0.5	10035033	25 G 1.0	10035064	7 G 4.0	10035096
5 G 0.5	10035035	2 X 1.5	10035067	4 G 6.0	10035097
7 G 0.5	10035036	3 G 1.5	10035068	5 G 6.0	10035098
12 G 0.5	10035037	4 G 1.5	10035070	7 G 6.0	10035099
2 X 0.75	10035040	5 G 1.5	10035071	4 G 10.0	10035380
3 G 0.75	10035041	7 G 1.5	10035072	5 G 10.0	10035381
4 G 0.75	10035043	12 G 1.5	10035073	4 G 16.0	10035382
5 G 0.75	10035045	18 G 1.5	10035074	5 G 16.0	10035383
7 G 0.75	10035047	25 G 1.5	10035075	4 G 25.0	10035384
12 G 0.75	10035050	3 G 2.5	10035089	5 G 25.0	10035385
18 G 0.75	10035051	4 G 2.5	10035090	4 G 35.0	10035386
25 G 0.75	10035052	5 G 2.5	10035091		
2 X 1.0	10035055	7 G 2.5	10035092	G = With Protective Conductor	
3 G 1.0	10035056	12 G 2.5	10035093		
4 G 1.0	10035058			X = Without Protective Conductor	
5 G 1.0	10035060				
7 G 1.0	10035061				

Other sizes and dimensions available on request

ÖLFLEX® 130 H & 135 CH

A low smoke halogen free flame retardant range of cables, which are suitable for control on static installation or for occasional flexing operations. This range of cables can be used in public facilities, airports, railway stations and constructions, particularly where human and animal life as well as valuable property are exposed to a high risk of fire hazards. The 135CH version contains a copper wire braid for EMC protection.

SPECIFICATION

Cores of fine wire strands of plain copper wire with halogen free polymer compound. Black cores with white numbers. Outer sheath silver-grey halogen free polymer compound, flame retardant. 135 CH version contains a tinned copper wire braid with a nominal 85% coverage.

TECHNICAL DATA

Minimum bend Radius:	130H: 15x Cable Diameter, Occasional flexing 135CH: 20x Cable Diameter, Occasional flexing 130H: 4x Cable Diameter, Static 135CH: 6x Cable Diameter, Static
Temperature Range:	Flexing: -15°C to +70°C Fixed: -40°C to +70°C
Working Voltage:	300/500V
Flammability:	Flame retardant in acc. to IEC 60332-1-2 resp. VDE 0482-332-1-2 no flame propagation In acc. to IEC 60332-3-24 resp. VDE 0482 part 266-2-4
Halogen Free:	acc. to IEC 60754-1 resp. VDE 0472 part 815
Corrosivity:	acc. to IEC 60754-2 resp. VDE 0472 part 267-2-3
Toxicity Index:	In acc. to NES 02-713 part 3
Smoke Density:	acc to IEC 61034-2
Tests:	acc to IEC 60811 resp. VDE 0473 and VDE 0472

ÖLFLEX® 130 H

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	1123000	12 G 1.0	1123080	4 G 4.0	1123160
3 G 0.5	1123001	18 G 1.0	1123084	5 G 4.0	1123161
4 G 0.5	1123003	25 G 1.0	1123090	7 G 4.0	1123162
5 G 0.5	1123005	2 X 1.5	1123106	4 G 6.0	1123167
7 G 0.5	1123008	3 G 1.5	1123107	5 G 6.0	1123168
12 G 0.5	1123013	4 G 1.5	1123109	7 G 6.0	1123169
2 X 0.75	1123032	5 G 1.5	1123111	4 G 10.0	1123172
3 G 0.75	1123033	7 G 1.5	1123114	5 G 10.0	1123173
4 G 0.75	1123035	12 G 1.5	1123120	4 G 16.0	1123177
5 G 0.75	1123037	18 G 1.5	1123124	5 G 16.0	1123178
7 G 0.75	1123041	25 G 1.5	1123128	4 G 25.0	1123181
12 G 0.75	1123047	34 G 1.5	1123130	5 G 25.0	1123182
18 G 0.75	1123051	2 X 2.5	1123139	4 G 35.0	1123185
25 G 0.75	1123054	3 G 2.5	1123140	5 G 35.0	1123186
2 X 1.0	1123066	4 G 2.5	1123142		
3 G 1.0	1123067	5 G 2.5	1123144		
4 G 1.0	1123069	7 G 2.5	1123146		
5 G 1.0	1123071	12 G 2.5	1123149		
7 G 1.0	1123074	25 G 2.5	1123151		

ÖLFLEX® 135 CH

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	1123200	12 G 1.0	1123280	4 G 4.0	1123359
3 G 0.5	1123201	18 G 1.0	1123284	5 G 4.0	1123360
4 G 0.5	1123203	25 G 1.0	1123290	7 G 4.0	1123361
5 G 0.5	1123205	2 X 1.5	1123306	4 G 6.0	1123367
7 G 0.5	1123208	3 G 1.5	1123307	5 G 6.0	1123368
12 G 0.5	1123213	4 G 1.5	1123309	7 G 6.0	1123369
2 X 0.75	1123232	5 G 1.5	1123311	4 G 10.0	1123372
3 G 0.75	1123233	7 G 1.5	1123314	5 G 10.0	1123373
4 G 0.75	1123235	12 G 1.5	1123320	4 G 16.0	1123377
5 G 0.75	1123237	18 G 1.5	1123324	5 G 16.0	1123378
7 G 0.75	1123241	25 G 1.5	1123328	4 G 25.0	1123381
12 G 0.75	1123247	3 G 2.5	1123340	5 G 25.0	1123382
18 G 0.75	1123251	4 G 2.5	1123342	4 G 35.0	1123385
25 G 0.75	1123254	5 G 2.5	1123344		
2 X 1.0	1123266	7 G 2.5	1123346		
3 G 1.0	1123267	12 G 2.5	1123349		
4 G 1.0	1123269				
5 G 1.0	1123271				
7 G 1.0	1123274				

G = With Protective Conductor X = Without Protective Conductor

ÖLFLEX® 130 H & 135 CH BK 0.6/1kV

A low smoke halogen free flame retardant range of cables that are suitable for power and control on static installation or for occasional flexing operations. This range of cables can be used in public facilities, airports, railway stations and constructions, particularly where human and animal life, as well as valuable property are exposed to a high risk of fire hazards. The 135CH version contains a copper wire braid for EMC protection.

SPECIFICATION

Cores of fine wire strands of plain copper wire with halogen free polymer compound. Colour coded cores up to 5 cores, 6 cores and up black cores with white numbers. Outer sheath black halogen free polymer compound, flame retardant. 135 CH version contains a tinned copper wire braid with a nominal 85% coverage.

TECHNICAL DATA

Minimum Bend Radius: 130H: 15x Cable Diameter, Occasional flexing
135CH: 20x Cable Diameter, Occasional flexing
130H: 4x Cable Diameter, Static
135CH: 6x Cable Diameter, Static

Temperature Range: Flexing: -15°C to +70°C
Fixed: -40°C to +70°C

Working Voltage: 600/1000V

Flammability: Flame retardant in acc. to IEC 60332-1-2 resp. VDE 0482-332-1-2 no flame propagation
In acc. to IEC 60332-3-24 resp. VDE 0482 part 266-2-4

Halogen Free: acc. to IEC 60754-1 resp. VDE 0472 part 815

Corrosivity: acc. to IEC 60754-2 resp. VDE 0472 part 267-2-3

Toxicity Index: In acc. to NES 02-713 part 3

Smoke Density: acc to IEC 61034-2

Tests: acc to IEC 60811 resp. VDE 0473 and VDE 0472

ÖLFLEX® 130 BK 0.6/1kV

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 1.0	1123410	12 G 1.5	1123423	3 G 6.0	1123437
3 G 1.0	1123411	18 G 1.5	1123424	4 G 6.0	1123438
4 G 1.0	1123412	25 G 1.5	1123425	5 G 6.0	1123439
5 G 1.0	1123413				
7 G 1.0	1123414	2 X 2.5	1123426	4 G 10.0	1123440
12 G 1.0	1123415	3 G 2.5	1123427	5 G 10.0	1123441
18 G 1.0	1123416	4 G 2.5	1123428		
25 G 1.0	1123417	5 G 2.5	1123429	4 G 16.0	1123442
		7 G 2.5	1123430	5 G 16.0	1123443
2 X 1.5	1123418	12 G 2.5	1123431		
3 G 1.5	1123419	25 G 2.5	1123433	4 G 25.0	1123444
4 G 1.5	1123420				
5 G 1.5	1123421	3 G 4.0	1123434		
7 G 1.5	1123422	4 G 4.0	1123435		
		5 G 4.0	1123436		

ÖLFLEX® 135 CH BK 0.6/1kV

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 1.0	1123460	12 G 1.5	1123473	3 G 6.0	1123487
3 G 1.0	1123461	18 G 1.5	1123474	4 G 6.0	1123488
4 G 1.0	1123462	25 G 1.5	1123475	5 G 6.0	1123489
5 G 1.0	1123463				
7 G 1.0	1123464	2 X 2.5	1123476	4 G 10.0	1123490
12 G 1.0	1123465	3 G 2.5	1123477	5 G 10.0	1123491
18 G 1.0	1123466	4 G 2.5	1123478		
25 G 1.0	1123467	5 G 2.5	1123479	4 G 16.0	1123492
		7 G 2.5	1123480	5 G 16.0	1123493
2 X 1.5	1123468	12 G 2.5	1123481		
3 G 1.5	1123469	25 G 2.5	1123483	4 G 25.0	1123494
4 G 1.5	1123470				
5 G 1.5	1123471	3 G 4.0	1123484		
7 G 1.5	1123472	4 G 4.0	1123485		
		5 G 4.0	1123486		

G = With Protective Conductor X = Without Protective Conductor

ÖLFLEX® ROBUST 200

ÖLFLEX® ROBUST 200 cables are connecting cables for flexible use and fixed installation for robust mechanical use. At room temperature they have increased resistance against acids, caustic solutions and certain vegetable, animal and mineral oils. This range of cables is ideally suited for use in agricultural, food, beverage and pharmaceutical industries.

SPECIFICATION

Cores of fine wire strands of plain copper wire with a special TPE compound. Colour coded cores up to 5 cores, 6 cores and up black cores with white numbers. Outer sheath black TPE compound, oil resistant, flame retardant.

TECHNICAL DATA

Minimum Bend Radius: 10x Cable Diameter, Flexing
4x Cable Diameter, Static

Temperature Range: Flexing: -40°C to +80°C
Fixed: -50°C to +80°C

Working Voltage: 450/750V

Tests: In acc. to VDE 0472 and IEC 60811 that is VDE 0473

No. of cores & mm^2 per conductor	Part No.	No. of cores & mm^2 per conductor	Part No.	No. of cores & mm^2 per conductor	Part No.
2 X 1.0	0021800	2 X 2.5	0021810	4 G 10.0	0021825
3 G 1.0	0021801	3 G 2.5	0021811	5 G 10.0	0021826
4 G 1.0	0021802	4 G 2.5	0021812		
5 G 1.0	0021803	5 G 2.5	0021813	4 G 16.0	0021828
		7 G 2.5	0021814	5 G 16.0	0021829
2 X 1.5	0021805				
3 G 1.5	0021806	3 G 4.0	0021816	4 G 25.0	0021831
4 G 1.5	0021807	4 G 4.0	0021817		
5 G 1.5	0021808	5 G 4.0	0021818	4 G 35.0	0021833
7 G 1.5	0021809				
		4 G 6.0	0021822	4 G 50.0	0021834
		5 G 6.0	0021823		

G = With Protective Conductor X = Without Protective Conductor
Other sizes and dimensions available on request

LAPP GROUP

ÖLFLEX® Robust 210 & 215C

ÖLFLEX® ROBUST 210 & 215C are control cables for flexible use and fixed installation for robust mechanical use. At room temperature they have increased resistance against acids, caustic solutions and certain vegetable, animal and mineral oils. This range of cables is ideally suited for use in agricultural, food, beverage and pharmaceutical industries.

SPECIFICATION

Cores of fine wire strands of plain copper wire with a special TPE compound. Number coding core identification, black cores with white numbers. Outer sheath black TPE compound, oil resistant, flame retardant. 215C has a tinned copper wire braid for EMC protection.

TECHNICAL DATA

Minimum Bend Radius: 210: 15x Cable Diameter, Flexing
210: 4x Cable Diameter, Static
215C: 20x Cable Diameter, Flexing
215C: 6x Cable Diameter, Static

Temperature Range: Flexing: -40°C to +80°C
Fixed: -50°C to +80°C

Working Voltage: 300/500V

Tests: In acc. to VDE 0472 and IEC 60811 that is VDE 0473

ROBUST 210

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0021880	12 G 1.0	0021922	3 G 4.0	0021963
3 G 0.5	0021881	18 G 1.0	0021923	4 G 4.0	0021964
4 G 0.5	0021883	25 G 1.0	0021824	5 G 4.0	0021965
5 G 0.5	0021885	2 X 1.5	0021928	4 G 6.0	0021967
7 G 0.5	0021888	3 G 1.5	0021929	5 G 6.0	0021968
12 G 0.5	0021891	4 G 1.5	0021931	4 G 10.0	0021969
2 X 0.75	0021897	5 G 1.5	0021933	5 G 10.0	0021970
3 G 0.75	0021898	7 G 1.5	0021936	4 G 16.0	0021971
4 G 0.75	0021900	12 G 1.5	0021940	4 G 25.0	0021972
5 G 0.75	0021902	18 G 1.5	0021941	4 G 35.0	0021973
7 G 0.75	0021904	25 G 1.5	0021942		
12 G 0.75	0021907	34 G 1.5	0021943		
18 G 0.75	0021908	2 X 2.5	0021946		
25 G 0.75	0021909	3 G 2.5	0021947		
2 X 1.0	0021913	4 G 2.5	0021949		
3 G 1.0	0021914	5 G 2.5	0021951		
4 G 1.0	0021916	7 G 2.5	0021953		
5 G 1.0	0021918	12 G 2.5	0021954		
7 G 1.0	0021920				

ROBUST 215C

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0022700	12 G 1.0	0022742	4 G 4.0	0022774
3 G 0.5	0022701	18 G 1.0	0022743	4 G 6.0	0022776
4 G 0.5	0022703	25 G 1.0	0022744	4 G 10.0	0022777
5 G 0.5	0022705	2 X 1.5	0022748	4 G 16.0	0022778
7 G 0.5	0022708	3 G 1.5	0022749	4 G 25.0	0022771
12 G 0.5	0022711	4 G 1.5	0022751	4 G 35.0	0022780
2 X 0.75	0022717	5 G 1.5	0022751		
3 G 0.75	0022718	7 G 1.5	0022753		
4 G 0.75	0022720	12 G 1.5	0022756		
5 G 0.75	0022722	18 G 1.5	0022760		
7 G 0.75	0022724	25 G 1.5	0022761		
12 G 0.75	0022727	34 G 1.5	0022762		
18 G 0.75	0022728	3 G 2.5	0022767		
25 G 0.75	0022729	4 G 2.5	0022768		
2 X 1.0	0022733	5 G 2.5	0022769		
3 G 1.0	0022734	7 G 2.5	0022770		
4 G 1.0	0022736				
5 G 1.0	0022738				
7 G 1.0	0022740				

G = With Protective Conductor

X = Without Protective Conductor

Other sizes and dimensions available on request

ÖLFLEX® Classic 400 P & 400 CP

This cable is ideal for outdoor or indoor use because of the extremely tough polyurethane sheathing materials. The ÖLFLEX® Classic 400 P and 400 CP range is designed for heavy duty industrial applications, for machine tool and plant manufacturing, or other instances where cables are exposed to heavy wear and tear.

SPECIFICATION

Cores of fine wire strands of plain copper wire with PVC core insulation twisted in layers. Outer sheath silver-grey PUR, bacteria and hydrolysis resistant and flame retardant. Cores black with white numbers. The 400 CP has an additional PVC inner sheath and tinned copper wire braid for EMC protection.

TECHNICAL DATA

Minimum bending radius: for flexing	400 P: 12.5x Cable Diameter 400 CP: 20 x Cable Diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -40°C to +80°C
Working Voltage:	300/500V
Conductor Stranding:	Fine wire to IEC 60228 Class 5, VDE 0295 Class 5
Core Identification:	Black cores, white numbers (VDE 0293)
In accordance with VDE Regulations:	Cores to VDE 0812/0245 Sheath to VDE 0250

ÖLFLEX® Classic 400 P

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	1312802	2 X 1.0	1312902	3 G 2.5	1312403
3 G 0.5	1312003	3 G 1.0	1312203	4 G 2.5	1312404
4 G 0.5	1312004	4 G 1.0	1312204	5 G 2.5	1312405
5 G 0.5	1312005	5 G 1.0	1312205	7 G 2.5	1312407
7 G 0.5	1312007	7 G 1.0	1312207	12 G 2.5	1312412
10 G 0.5	1312010	12 G 1.0	1312212	4 G 4.0	1312504
12 G 0.5	1312012	18 G 1.0	1312218	5 G 4.0	1312505
18 G 0.5	1312018	25 G 1.0	1312225	7 G 4.0	1312507
25 G 0.5	1312025	34 G 1.0	1312234	4 G 6.0	1312604
34 G 0.5	1312034	41 G 1.0	1312241	5 G 6.0	1312605
41 G 0.5	1312041	2 X 1.5	1312952	7 G 6.0	1312607
2 X 0.75	1312852	3 G 1.5	1312303	4 G 10.0	1312614
3 G 0.75	1312103	4 G 1.5	1312304	5 G 10.0	1312615
4 G 0.75	1312104	5 G 1.5	1312305	7 G 10.0	1312617
5 G 0.75	1312105	7 G 1.5	1312307	4 G 16.0	1312624
7 G 0.75	1312107	12 G 1.5	1312312		
12 G 0.75	1312112	18 G 1.5	1312318		
18 G 0.75	1312118	25 G 1.5	1312325		
25 G 0.75	1312125	34 G 1.5	1312334		
34 X 0.75	1312134	41 G 1.5	1312341		
41 G 0.75	1312141				

ÖLFLEX® Classic 400 CP

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.75	1313852	12 G 1.0	1313212	3 G 2.5	1313403
3 G 0.75	1313103	18 G 1.0	1313218	4 G 2.5	1313404
4 G 0.75	1313104	25 G 1.0	1313225	5 G 2.5	1313405
5 G 0.75	1313105	34 G 1.0	1313234	7 G 2.5	1313407
7 G 0.75	1313107	41 G 1.0	1313241	12 G 2.5	1313412
12 G 0.75	1313112	2 X 1.5	1313952	4 G 4.0	1313504
18 G 0.75	1313118	3 G 1.5	1313303	5 G 4.0	1313505
25 G 0.75	1313125	4 G 1.5	1313304	4 G 6.0	1313604
34 X 0.75	1313134	5 G 1.5	1313305	5 G 6.0	1313605
41 G 0.75	1313141	7 G 1.5	1313307	4 G 10.0	1313614
2 X 1.0	1313902	18 G 1.5	1313318	4 G 16.0	1313624
3 G 1.0	1313203	25 G 1.5	1313325		
4 G 1.0	1313204	34 G 1.5	1313334		
5 G 1.0	1313205	41 G 1.5	1313341		
7 G 1.0	1313207				

G = With Protective Conductor X = Without Protective Conductor

ÖLFLEX® 440 P & 440 CP

A VDE registered polyurethane sheathed control cable for use in all applications where very heavy wear is expected under arduous conditions. Can be used in machine plant manufacture and other heavy duty applications and is also ideal for use outdoors.

SPECIFICATION

Cores of fine wire strands of tinned copper wire with TPE core insulation twisted in layers. Outer sheath silver-grey PUR, bacteria and hydrolysis resistant, halogen free and flame retardant. Black cores with white numbers. The CP version has an additional screen braiding of copper wire.

TECHNICAL DATA

Minimum bending radius for flexing:	15x Cable Diameter
Temperature Range:	Flexing: -40°C to +90°C Static: -50°C to +90°C
Working Voltage:	300/500V
Conductor stranding:	Fine wire to IEC 60228 Class 5, VDE 0295 Class 5
Core identification:	Black cores, white numbers (VDE 0293)
In accordance with VDE Regulations:	VDE tested: VDE reg no.6582

ÖLFLEX® 440 P

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0012800	25 G 0.75	0012820	5 G 1.5	0012840
3 G 0.5	0012801	34 X 0.75	0012821	7 G 1.5	0012841
4 G 0.5	0012802	41 G 0.75	0012822	12 G 1.5	0012842
5 G 0.5	0012803			18 G 1.5	0012843
7 G 0.5	0012804	2 X 1.0	0012825	25 G 1.5	0012844
12 G 0.5	0012805	3 G 1.0	0012826	34 G 1.5	0012845
18 G 0.5	0012806	4 G 1.0	0012827	41 G 1.5	0012846
25 G 0.5	0012807	5 G 1.0	0012828		
34 G 0.5	0012809	7 G 1.0	0012829	3 G 2.5	0012850
41 G 0.5	0012810	12 G 1.0	0012830	4 G 2.5	0012851
		18 G 1.0	0012831	5 G 2.5	0012852
2 X 0.75	0012813	25 G 1.0	0012832	7 G 2.5	0012853
3 G 0.75	0012814	34 G 1.0	0012833	12 G 2.5	0012854
4 G 0.75	0012815	41 G 1.0	0012834		
4 G 0.75	0012816			7 G 4.0	0012890
7 G 0.75	0012817	2 X 1.5	0012837		
12 G 0.75	0012818	3 G 1.5	0012838	7 G 6.0	0012891
18 G 0.75	0012819	4 G 1.5	0012839		

ÖLFLEX® 440 CP

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0012900	18 G 0.75	0012918	4 G 1.5	0012942
3 G 0.5	0012901	25 G 0.75	0012919	5 G 1.5	0012943
4 G 0.5	0012902			7 G 1.5	0012944
5 G 0.5	0012903	2 X 1.0	0012925	12 G 1.5	0012945
7 G 0.5	0012904	3 G 1.0	0012926	18 G 1.5	0012946
12 G 0.5	0012906	4 G 1.0	0012927	25 G 1.5	0012947
18 G 0.5	0012907	5 G 1.0	0012928	34 G 1.5	0012948
25 G 0.5	0012908	7 G 1.0	0012929	41 G 1.5	0012949
		12 G 1.0	0012931		
2 X 0.75	0012911	18 G 1.0	0012932	3 X 2.5	0012950
3 G 0.75	0012912	25 G 1.0	0012933	4 G 2.5	0012951
4 G 0.75	0012913	34 G 1.0	0012934	5 G 2.5	0012952
4 G 0.75	0012914			7 G 2.5	0012953
7 G 0.75	0012915	2 X 1.5	0012940	12 G 2.5	0012954
12 G 0.75	0012917	3 G 1.5	0012941		

G = With Protective Conductor X = Without Protective Conductor

ÖLFLEX® 450 P

A cable with outstanding strength for use as a general extension or connection cable or where additional safety features are required.

SPECIFICATION

Cores of fine, bare copper wire strands with core insulation and special PVC sheath, compound twisted in layers. Cores coloured to VDE 0293. Inner red PVC sheath for safety purposes, highlights damage to outer sheath.
Outer sheath yellow (RAL 1016) PUR, bacteria and hydrolysis resistant, and flame retardant.

TECHNICAL DATA

Minimum bending radius for flexing:	15x Cable Diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -40°C to +80°C
Working Voltage:	300/500V
Conductor Stranding:	Fine wire to IEC 60228 Class 5, VDE 0295 Class 5
Colour Code:	Coloured to VDE 0293, BS 6500
In accordance with VDE Regulations:	VDE 2050/0281

No. of cores & mm^2 per conductor	Part No.	No. of cores & mm^2 per conductor	Part No.	No. of cores & mm^2 per conductor	Part No.
2 X 1.0	0012101	3 G 1.5	0012202	3 G 2.5	0012302
3 G 1.0	0012102	4 G 1.5	00122033	5 G 2.5	00123043
		5 G 1.5	00122043		

ÖLFLEX® 500 P

An arctic grade polyurethane cable that can be used as a general purpose extension lead for power tools. It is extremely tough and particularly suited to use outside under difficult or arduous conditions.

SPECIFICATION

Cores of superfine wire strands of plain copper wire with core insulation of polyurethane based compound twisted in layers. Cores coloured to VDE 0293. Outer sheath orange (RAL 2003) PUR, bacteria and hydrolysis resistant, halogen free and flame retardant.

TECHNICAL DATA

Minimum bending radius for flexing:	15x Cable Diameter
Temperature range:	Flexing: -40°C to +80°C Static: -50°C to +80°C
Working Voltage:	300/500V
Conductor stranding:	Superfine wire to VDE 0295 Class 6, IEC 60228 Class 6
Colour code:	Coloured to VDE 0293
In accordance with VDE Regulations:	VDE 0281/0282

No. of cores & mm^2 per conductor	Part No.	No. of cores & mm^2 per conductor	Part No.	No. of cores & mm^2 per conductor	Part No.
2 X 1.0	0012345	2 X 1.5	0012351	3 G 2.5	0012365
3 G 1.0	0012346	3 G 1.5	0012352	4 G 2.5	0012355
4 G 1.0	0012347	4 G 1.5	0012354	5 G 2.5	0012366
5 G 1.0	0012348	5 G 1.5	0012353		

ÖLFLEX® 540 P & 540 CP

A polyurethane cable that can be used in dry or wet conditions with equal effectiveness. A universal cable that is halogen free and extremely cost effective. Used for construction machinery, agricultural equipment and vehicle washing equipment.

SPECIFICATION

Cores of fine wire strands of tinned copper wire with TPE core insulation twisted together. Coloured cores. Outer sheath yellow PUR, bacteria and hydrolysis resistant, halogen free and flame retardant. The CP version has an additional screen braiding of tinned copper wire.

TECHNICAL DATA

Minimum bending radius for flexing:	540 P: 10x Cable Diameter 540 CP: 12.5x Cable Diameter
Temperature Range:	Flexing: -40°C to +90°C Static: -50°C to +90°C
Working Voltage:	0.75 to 1.0 mm² : 300/500V 1.5 to 10.0 mm² : 450/750V
Conductor Stranding:	Fine wire to VDE 0295 Class 5, IEC 60228 Class 5
Colour Code:	Coloured to VDE 0293
In accordance with VDE Regulations:	VDE reg no. 6583/6584

MUD resistant according to IEC 61892-4 Annex D

ÖLFLEX® 540 P

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.75	0012452	2 X 1.5	0012462	3 G 4.0	0012474
3 G 0.75	0012453	3 G 1.5	0012463	4 G 4.0	00124753
4 G 0.75	00124543	4 G 1.5	00124643	5 G 4.0	00124763
5 G 0.75	00123553	5 G 1.5	00124653		
7 G 0.75	0012456	7 G 1.5	0012466	4 G 6.0	00124783
				5 G 6.0	00124793
2 X 1.0	0012457	2 X 2.5	0012467		
3 G 1.0	0012458	3 G 2.5	0012468	4 G 10.0	00124813
4 G 1.0	00124593	4 G 2.5	00124693	5 G 10.0	00124823
5 G 1.0	00124603	5 G 2.5	00124703		
7 G 1.0	0012461				

ÖLFLEX® 540 CP

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.75	0012752	2 X 1.5	0012762	4 G 4.0	00127753
3 G 0.75	0012753	3 G 1.5	0012763	5 G 4.0	00127763
5 G 0.75	00127553	4 G 1.5	00127643		
		5 G 1.5	00127653	4 G 6.0	00127783
2 X 1.0	0012757	7 G 1.5	0012766	5 G 6.0	00127793
3 G 1.0	0012758				
5 G 1.0	00127603	2 X 2.5	0012767	4 G 10.0	00127813
7 G 1.0	0012761	3 G 2.5	0012768	5 G 10.0	00127823
		4 G 2.5	00127693		
		5 G 2.5	00127703		

G = With Protective Conductor X = Without Protective Conductor

LAPP GROUP

H05RR-F & H07RN-F

These tough rubber sheathed cables conform to the CENELEC Common European regulations and are ideal for use in both outdoor and wet conditions. The H05RR-F types are ideal for lightweight hand and workshop tools whilst the other groups are suitable for increasingly higher levels of stress and heavy duty equipment.

SPECIFICATION

H05RR-F: Cores of fine wire strands of electrolytic copper wire with rubber core insulation, outer sheath in synthetic rubber. Coloured cores to HAR colour code. H07RN-F: Cores of fine strands of electrolytic copper wire with rubber core insulation, cores twisted together with neoprene rubber outer sheath. Coloured cores to HAR colour code.

TECHNICAL DATA

Minimum bending radius for flexing:	15x Cable Diameter
Temperature Range:	-25°C to +60°C
Working Voltage:	300/500V: H05RR-F 450/750V: H05RR-F
Conductor Stranding:	Fine wire to IEC 60228 Class 5, VDE 0295 Class 5
Colour Code:	Coloured to VDE 0293
In accordance with VDE Regulations:	VDE tested: VDE 0282 Part 4 / HD 22.4 S4

HO5RR-F

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.75	1600203	3 G 1.0	1600208	4 G 2.5	16002123
2 X 1.0	1600204	3 G 1.5	1600200		
2 X 1.5	1600205	3 G 2.5	1600209	5 G 1.5	16002023
2 X 2.5	1600206			5 G 2.5	16002133
		4 G 1.0	16002113		
3 G 0.75	1600207	4 G 1.5	16002013		

HO7RN-F

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 1.5	1600199	4 G 2.5	16001053	5 G 2.5	16001293
2 X 2.5	1600187	4 G 4.0	16001063	5 G 4.0	16001303
2 X 4.0	1600186	4 G 6.0	16001073	5 G 6.0	16001313
3 G 1.0	1600117	4 G 10.0	16001083	5 G 10.0	16001093
3 G 1.5	1600103	4 G 16.0	16001103	5 G 16.0	16001113
3 G 2.5	1600118	4 G 25.0	16001123	5 G 25.0	16001133
3 G 4.0	1600119	4 G 35.0	16001143	5 G 35.0	16001363
3 G 6.0	1600120	4 G 50.0	16001153	7 G 1.5	1600151
3 G 10.0	1600121	4 G 70.0	16001163	7 G 2.5	1600152
3 G 16.0	1600122	4 G 95.0	16001283	12 G 2.5	1600154
4 G 1.5	16001233	5 G 1.5	16001043	19 G 2.5	1600156
				24 G 2.5	1600157

HO7RN-F

Short circuit proof and short circuit resistant cables: In VDE 0100 Part 520 SECTION 10.2 arrangements, made up of single core rubber-sheathed cables HO7RN-F, are recognised as short circuit and earth fault proof.

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
1 X 1.5	1600096	1 X 16.0	1600195	1 X 95.0	1600190
1 X 2.5	1600099	1 X 25.5	1600196	1 X 120.0	1600198
1 X 4.0	1600097	1 X 35.0	1600193	1 X 150.0	1600191
1 X 6.0	1600098	1 X 50.0	1600197	1 X 185.0	1600175
1 X 10.0	1600194	1 X 70.0	1600189	1 X 240.0	1600177

G = With Protective Conductor X = Without Protective Conductor

ÖLFLEX® CHAIN 808 P & 808 CP

ÖLFLEX® CHAIN 808 P & 808 CP is a new generation of highly flexible multi conductor power chain cables, designed particularly for use in wet areas due to the polyurethane outer sheath. Its primary field of application is for continuous flexing in linear power chains up to 10mtr travel distance.

SPECIFICATION

Fine wire strands of plain copper wire with core insulation of PVC compound, cores twisted in layers with short lay length, wrapping on each layer. Cores black with white numbers. Low adhesion grey PUR outer sheath. 808 CP version has a braid screen of tinned copper wires for EMC protection.

TECHNICAL DATA

Minimum bending radius for flexing:	808 P: minimum 10 x cable diameter 808 CP: minimum 12 x cable diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -40°C to +80°C
Working Voltage:	300/500V
Conductor Stranding:	to IEC 60228 Class 5/VDE 0295 Class 5
Core Identification:	Black cores, white numbers (VDE 0293)

ÖLFLEX® CHAIN 808 P

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	1027700	2 X 1.0	1027716	3 G 2.5	1027732
3 G 0.5	1027701	3 G 1.0	1027717	4 G 2.5	1027733
4 G 0.5	1027702	4 G 1.0	1027718	7 G 2.5	1027734
5 G 0.5	1027703	5 G 1.0	1027719		
7 G 0.5	1027704	7 G 1.0	1027720	4 G 4.0	1027737
12 G 0.5	1027705	12 G 1.0	1027721		
18 G 0.5	1027706	18 G 1.0	1027722		
25 G 0.5	1027707	25 G 1.0	1027723		
2 X 0.75	1027708	2 X 1.5	1027724		
3 G 0.75	1027709	3 G 1.5	1027725		
4 G 0.75	1027710	4 G 1.5	1027726		
5 G 0.75	1027711	5 G 1.5	1027727		
7 G 0.75	1027712	7 G 1.5	1027728		
12 G 0.75	1027713	12 G 1.5	1027729		
18 G 0.75	1027714	18 G 1.5	1027730		
25 X 0.75	1027715	25 G 1.5	1027731		

ÖLFLEX® CHAIN 808 CP

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	1027751	2 X 1.0	1027767	3 G 2.5	1027783
3 G 0.5	1027752	3 G 1.0	1027768	4 G 2.5	1027784
4 G 0.5	1027753	4 G 1.0	1027769	7 G 2.5	1027785
5 G 0.5	1027754	5 G 1.0	1027770		
7 G 0.5	1027755	7 G 1.0	1027771	4 G 4.0	1027788
12 G 0.5	1027756	12 G 1.0	1027772		
18 G 0.5	1027757	18 G 1.0	1027773		
25 G 0.5	1027758	25 G 1.0	1027774		
2 X 0.75	1027759	2 X 1.5	1027775		
3 G 0.75	1027760	3 G 1.5	1027776		
4 G 0.75	1027761	4 G 1.5	1027777		
5 G 0.75	1027762	5 G 1.5	1027778		
7 G 0.75	1027763	7 G 1.5	1027779		
12 G 0.75	1027764	12 G 1.5	1027780		
18 G 0.75	1027765	18 G 1.5	1027781		
25 X 0.75	1027766	25 G 1.5	1027782		

G = With Protective Conductor X = Without Protective Conductor

ÖLFLEX® CHAIN 809 & CHAIN 809 CY

This range of power chain cables are especially designed for low to medium requirements with UL-AWM certification up to 1000V. They are specifically designed for up to 2 million bending cycles with a maximum travel distance of up to 10 meters. Having the UL reference both these cables are suitable for export oriented machine builders according to NFPA 79 edition 2012.

SPECIFICATION

Fine wire strands of plain copper wire with core insulation of PVC compound, cores twisted in layers with short lay length, wrapping on each layer.
Outer sheath silver-grey low adhesive PVC. Cores black with white numbers.
ÖLFLEX® CHAIN 809CY version has an additional screening braid of tinned copper wires.

TECHNICAL DATA

Minimum bending radius for flexing:	809: minimum 10 x cable diameter 809 CY: minimum 12 x cable diameter
Temperature Range:	Flexing: 0°C to +70°C – VDE Flexing: 0°C to +80°C – UL Static: -40°C to +70°C – VDE Static: -40°C to +80°C - UL
Working Voltage:	UL/CSA: 1000 V VDE: U0/U: 300/500 V
Conductor Stranding:	fine wire to IEC 228 Class 5/VDE 0295 Class 5
Core Identification:	Black cores, white numbers (VDE 0293)
In accordance with UL approvals:	cUL AWM II A/B FT1, UL-AWM Style 20886

ÖLFLEX® CHAIN 809

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	1026700	2 X 1.0	1026716	3 G 2.5	1026732
3 G 0.5	1026701	3 G 1.0	1026717	4 G 2.5	1026733
4 G 0.5	1026702	4 G 1.0	1026718	7 G 2.5	1026734
5 G 0.5	1026703	5 G 1.0	1026719		
7 G 0.5	1026704	7 G 1.0	1026720	4 G 4.0	1026737
12 G 0.5	1026705	12 G 1.0	1026721		
18 G 0.5	1026706	18 G 1.0	1026722		
25 G 0.5	1026707	25 G 1.0	1026723		
2 X 0.75	1026708	2 X 1.5	1026724		
3 G 0.75	1026709	3 G 1.5	1026725		
4 G 0.75	1026710	4 G 1.5	1026726		
5 G 0.75	1026711	5 G 1.5	1026727		
7 G 0.75	1026712	7 G 1.5	1026728		
12 G 0.75	1026713	12 G 1.5	1026729		
18 G 0.75	1026714	18 G 1.5	1026730		
25 X 0.75	1026715	25 G 1.5	1026731		

ÖLFLEX® CHAIN 809 CY

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	1026751	2 X 1.0	1026767	3 G 2.5	1026783
3 G 0.5	1026752	3 G 1.0	1026768	4 G 2.5	1026784
4 G 0.5	1026753	4 G 1.0	1026769	7 G 2.5	1026785
5 G 0.5	1026754	5 G 1.0	1026770		
7 G 0.5	1026755	7 G 1.0	1026771	4 G 4.0	1026788
12 G 0.5	1026756	12 G 1.0	1026772		
18 G 0.5	1026757	18 G 1.0	1026773		
25 G 0.5	1026758	25 G 1.0	1026774		
2 X 0.75	1026759	2 X 1.5	1026775		
3 G 0.75	1026760	3 G 1.5	1026776		
4 G 0.75	1026761	4 G 1.5	1026777		
5 G 0.75	1026762	5 G 1.5	1026778		
7 G 0.75	1026763	7 G 1.5	1026779		
12 G 0.75	1026764	12 G 1.5	1026780		
18 G 0.75	1026765	18 G 1.5	1026781		
25 X 0.75	1026766	25 G 1.5	1026782		

G = With Protective Conductor X = Without Protective Conductor

ÖLFLEX®-FD Classic 810 & 810 CY

The ÖLFLEX®-FD Classic 810 and 810 CY represent a new generation of highly flexible robotics cables. For continuously moving applications, in power chains or machine assembly lines, the small bending radius offers longer life under arduous conditions. The ÖLFLEX-FD® Classic 810 CY version has a copper braid which is also beneficial where EMC protection is required.

SPECIFICATION

Cores of extra fine wire strands of plain copper wire with special PVC insulation, extremely short lay length, fleece wrapping. Outer sheath silver-grey special PVC flame retardant. Cores black with white numbers. ÖLFLEX®-FD Classic 810 CY version has an additional PVC inner sheath with a screening braid of tinned copper wires.

TECHNICAL DATA

Minimum bending radius for flexing:	7.5x Cable Diameter
Temperature Range:	Flexing: 0°C to +70°C Static: -40°C to +70°C
Working Voltage:	300/500V
Conductor Stranding:	Fine wire to VDE 0295 Class 6
Core Identification:	Black cores, white numbers (VDE 0293)
In accordance with VDE Regulations:	Cores to VDE 0281/0245 Sheath to VDE 0245/0281

ÖLFLEX®-FD Classic 810

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0026100	2 X 1.0	0026130	18 G 1.5	0026156
3 G 0.5	0026101	3 G 1.0	0026131	25 G 1.5	0026157
4 G 0.5	0026102	4 G 1.0	0026132	34 G 1.5	0026159
5 G 0.5	0026103	5 G 1.0	0026133	42 G 1.5	0026161
7 G 0.5	0026104	7 G 1.0	0026134	50 G 1.5	0026162
12 G 0.5	0026105	12 G 1.0	0026135	3 G 2.5	0026170
18 G 0.5	0026106	18 G 1.0	0026138	4 G 2.5	0026171
25 G 0.5	0026107	25 G 1.0	0026139	5 G 2.5	0026172
34 G 0.5	0026109	34 G 1.0	0026141	7 G 2.5	0026173
50 G 0.5	0026110	41 G 1.0	0026142	12 G 2.5	0026174
2 X 0.75	0026119	50 G 1.0	0026143	3 G 4.0	0026180
3 G 0.75	0026120	65 G 1.0	0026144	4 G 4.0	0026181
4 G 0.75	0026121	2 X 1.5	0026149	5 G 4.0	0026182
5 G 0.75	0026122	3 G 1.5	0026150	4 G 6.0	0026183
7 G 0.75	0026123	4 G 1.5	0026151	5 G 6.0	0026184
12 G 0.75	0026124	5 G 1.5	0026152	4 G 10.0	0026185
16 G 0.75	0026125	7 G 1.5	0026153	5 G 10.0	0026186
18 G 0.75	0026126	12 G 1.5	0026154	4 G 16.0	0026187
25 X 0.75	0026127	16 G 1.5	0026155	5 G 16.0	0026188

ÖLFLEX®-FD Classic 810 CY

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0026200	2 X 1.0	0026230	25 G 1.5	0026257
3 G 0.5	0026201	3 G 1.0	0026231	34 G 1.5	0026259
4 G 0.5	0026202	4 G 1.0	0026232	3 G 2.5	0026270
5 G 0.5	0026203	5 G 1.0	0026233	4 G 2.5	0026271
7 G 0.5	0026204	7 G 1.0	0026234	5 G 2.5	0026272
12 G 0.5	0026205	12 G 1.0	0026235	7 G 2.5	0026273
18 G 0.5	0026206	18 G 1.0	0026238	3 G 4.0	0026280
25 G 0.5	0026207	25 G 1.0	0026239	4 G 4.0	0026281
30 G 0.5	0026208	34 G 1.0	0026241	5 G 4.0	0026282
2 X 0.75	0026219	50 G 1.0	0026243	4 G 6.0	0026283
3 G 0.75	0026202	2 X 1.5	0026249	5 G 6.0	0026284
4 G 0.75	0026221	3 G 1.5	0026250	4 G 10.0	0026285
5 G 0.75	0026222	4 G 1.5	0026251	5 G 10.0	0026286
7 G 0.75	0026223	5 G 1.5	0026252	4 G 16.0	0026287
12 G 0.75	0026224	7 G 1.5	0026253	5 G 16.0	0026288
18 G 0.75	0026226	12 G 1.5	0026254		
25 X 0.75	0026227	16 G 1.5	0026255		
30 x 0.75	0026229	18 G 1.5	0026256		

G = With Protective Conductor X = Without Protective Conductor

ÖLFLEX®-FD Classic 810 P & 810 CP

The polyurethane based version of the highly flexible ÖLFLEX®-FD Classic 810 robotics cable allows for small cable diameters, reducing the amount of space required in power chains, and still offers minimum bending radius of 7.5mm x cable diameter. The ÖLFLEX®-FD Classic 810 CP version offers screened braiding which is used where EMC protection is required and a PUR outer sheath for increased wear and tear resistance.

SPECIFICATION

Cores of extra fine wire strands of plain copper wire with special PVC insulation, short lay length, fleece wrapping. Outer sheath silver-grey special polyurethane based, microbe and hydrolysis resistant and flame retardant. Cores black with white numbers. ÖLFLEX®-FD Classic 810 CP version has an additional PVC inner sheath with a screening braid of tinned copper wires.

TECHNICAL DATA

Minimum bending radius for flexing:	7.5x Cable Diameter
Temperature Range:	Flexing: -10°C to +70°C
Working Voltage:	300/500V
Conductor Stranding:	Extra fine wire to VDE 0295 Class 6/IEC 228 Class 6
Core identification:	Black cores, white numbers (VDE 0293)
In accordance with VDE Regulations:	Cores to VDE 0245/0281 Sheath to VDE 0245/0282

ÖLFLEX®-FD Classic 810 P

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0026300	7 G 1.0	0026334	3 G 2.5	0026370
3 G 0.5	0026301	12 G 1.0	0026335	4 G 2.5	0026371
4 G 0.5	0026302	16 G 1.0	0026337	5 G 2.5	0026372
5 G 0.5	0026303	18 G 1.0	0026338	7 G 2.5	0026373
7 G 0.5	0026304	25 G 1.0	0026339	12 G 2.5	0026374
12 G 0.5	0026305	34 G 1.0	0026341	4 G 4.0	0026381
18 G 0.5	0026306	41 G 1.0	0026342	5 G 4.0	0026282
2 X 0.75	0026319	50 G 1.0	0026343	1 G 6.0	0026200
3 G 0.75	0026320	65 G 1.0	0026344	4 G 6.0	0026383
4 G 0.75	0026321	2 X 1.5	0026349	1 G 10.0	0026210
5 G 0.75	0026322	3 G 1.5	0026350	4 G 10.0	0026385
7 G 0.75	0026323	4 G 1.5	0026351	5 G 10.0	0026386
12 G 0.75	0026324	5 G 1.5	0026352	1 G 16.0	0026220
18 G 0.75	0026326	7 G 1.5	0026353	4 G 16.0	0026387
25 G 0.75	0026327	12 G 1.5	0026354		
2 X 1.0	0026330	18 G 1.5	0026356		
3 G 1.0	0026331	25 G 1.5	0026357		
4 G 1.0	0026332	35 G 1.5	0026359		
5 G 1.0	0026333	42 G 1.5	0026361		
		50 G 1.5	0026362		

ÖLFLEX®-FD Classic 810 CP

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0026400	2 X 1.0	0026430	3 G 2.5	0026470
3 G 0.5	0026401	3 G 1.0	0026431	4 G 2.5	0026471
4 G 0.5	0026402	4 G 1.0	0026432	5 G 2.5	0026472
5 G 0.5	0026403	5 G 1.0	0026433	7 G 2.5	0026473
7 G 0.5	0026404	7 G 1.0	0026434	12 G 2.5	0026474
12 G 0.5	0026405	12 G 1.0	0026435	4 G 4.0	0026481
2 X 0.75	0026419	18 G 1.0	0026438	4 G 6.0	0026483
3 G 0.75	0026420	25 G 1.0	0026439	5 G 6.0	0026484
4 G 0.75	0026421	2 X 1.5	0026449	4 G 10.0	0026485
5 G 0.75	0026422	3 G 1.5	0026450	5 G 10.0	0026486
7 G 0.75	0026423	4 G 1.5	0026451	4 G 16.0	0026487
12 G 0.75	0026424	5 G 1.5	0026452	5 G 16.0	0026488
18 G 0.75	0026426	7 G 1.5	0026453		
25 G 0.75	0026427	12 G 1.5	0026454		
		18 G 1.5	0026456		
		25 G 1.5	0026457		

G = With Protective Conductor X = Without Protective Conductor

ÖLFLEX®-FD 855 P & 855 CP

ÖLFLEX®-FD 855 P has been designed to resist extreme stresses. The materials used are halogen-free and consequently environment-friendly. The cable can be used in an expanded temperature range and in the case of the unscreened version allows a minimum bending radius of 5 x cable diameter. Thus ÖLFLEX®-FD 855 P and 855 CP can be used without restriction in the most modern automated manufacturing systems, inside and outside, and meet the highest service life requirements.

SPECIFICATION

ÖLFLEX®-FD 855 P - Extra fine strands of plain copper wire, core insulation of TPE, cores black with white numbers, one lead identified green/yellow as protective conductor, cores stranded in layers with short lay lengths. Fleece wrapping, outer sheath of special polyurethane based compound, microbe and hydrolysis resistant, adhesion-free, silver-grey (RAL 7001), flame retardant.

ÖLFLEX®-FD 855 CP - A fleece wrapping, TPE inner sheath, screen braiding of copper wires, outer sheath of special polyurethane-based compound, microbe and hydrolysis resistant, adhesion-free, silver-grey (RAL 7001), flame retardant, (IEC 60332.1).

TECHNICAL DATA

Minimum bending radius for flexing:	855 P: 5x Cable Diameter 855 CP: 7.5x Cable Diameter
Temperature Range:	Flexing: -30°C to +80°C Fixed: -50°C to +80°C
Working Voltage:	300/500V
Conductor Stranding:	Extra fine wire to VDE 0295 Class 6/IEC 228 Class 6
Core Identification:	Black cores, white numbers (VDE 0293)

In accordance with VDE Regulations: VDE 0250/0281/0282

ÖLFLEX®-FD 855 P

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0027530	18 G 0.75	0027551	4 G 1.5	0027586
3 G 0.5	0027531	25 G 0.75	0027553	5 G 1.5	0027577
4 G 0.5	0027532	36 G 0.75	0027555	7 G 1.5	0027578
5 G 0.5	0027533	2 X 1.0	0027560	12 G 1.5	0027579
7 G 0.5	0027534	3 G 1.0	0027561	18 G 1.5	0027580
12 G 0.5	0027535	4 G 1.0	0027563	20 G 1.5	0027581
18 G 0.5	0027536	5 G 1.0	0027564	25 G 1.5	0027582
25 G 0.5	0027538	7 G 1.0	0027565	36 G 1.5	0027585
30 G 0.5	0027540	12 G 1.0	0027566	41 G 1.5	0027587
36 G 0.5	0027541	18 G 1.0	0027567	3 G 2.5	0027370
2 X 0.75	0027545	25 G 1.0	0027568	4 G 2.5	0027371
3 G 0.75	0027546	30 G 1.0	0027570	5 G 2.5	0027372
4 G 0.75	0027547	36 G 1.0	0027571	7 G 2.5	0027373
5 G 0.75	0027548	2 X 1.5	0027575	12 G 2.5	0027374
7 G 0.75	0027549	3 G 1.5	0027576	18 G 2.5	0027375
12 G 0.75	0027550			25 G 2.5	0027376

ÖLFLEX®-FD 855 CP

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0027605	18 G 0.75	0027626	2 X1.5	0027649
3 G 0.5	0027606	25 G 0.75	0027628	3 G 1.5	0027650
4 G 0.5	0027607	36 G 0.75	0027630	4 G 1.5	0027661
5 G 0.5	0027608	2 X 1.0	0027635	5 G 1.5	0027651
7 G 0.5	0027609	3 G 1.0	0027636	7 G 1.5	0027652
12 G 0.5	0027610	4 G 1.0	0027637	12 G 1.5	0027653
18 G 0.5	0027611	5 G 1.0	0027638	18 G 1.5	0027654
25 G 0.5	0027613	7 G 1.0	0027639	25 G 1.5	0027656
30 G 0.5	0027615	12 G 1.0	0027640	30 G 1.5	0027658
36 G 0.5	0027616	18 G 1.0	0027641	36 G 1.5	0027659
2 X 0.75	0027620	25 G 1.0	0027643	3 G 2.5	0027380
3 G 0.75	0027621	30 G 1.0	0027645	4 G 2.5	0027381
4 G 0.75	0027622	36 G 1.0	0027646	5 G 2.5	0027382
5 G 0.75	0027623			7 G 2.5	0027383
7 G 0.75	0027624			12 G 2.5	0027384
12 G 0.75	0027625			18 G 2.5	0027385
				25 G 2.5	0027386

G = With Protective Conductor X = Without Protective Conductor

ÖLFLEX®-ROBOT 900 P & 900 DP

This special cable handles the transmission of control and monitoring signals as well as power supply, in any installation where combined torsion and bending stresses occur. It is suitable for connecting handling tools to welding robots and for connection to rotating or tilting tables or for other applications where undefined cable runs are necessary and the cable is subjected to twisting along its length.

SPECIFICATION

Fine to superfine strands of plain copper wire with core insulation TPE-E, cores or core pairs, twisted in layers with slip wrapping. The ÖLFLEX-Robot® 900 DP version has an additional screening braid of tinned copper wires, outer sheath of special polyurethane compound, flame retardant, black (RAL 7016).

TECHNICAL DATA

Minimum bending radius for flexing:	15x Cable Diameter Maximum torsion angle +/- 360°/m DP: +/- 180°/m
Temperature Range:	Flexing: -40°C to +80°C Short term overload possible up to +120°C
Working Voltage:	Up to 0.34mm² 48V 0.5mm² and above 300/500V
Conductor Stranding:	Fine to superfine wire
Core Identification:	Cores to 0.34mm² DIN 47100 Cores 0.50mm² and above: black cores with white numbers.

ÖLFLEX® Robot 900P & 900 DP

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
7 x 0.25	0028110	18 G 1.5	0028198
25 x 0.25	0028116		
		3 G 2.5	0028181
2 X 0.34	0028188	4 G 2.5	0028182
		3 G 16.0	0028400
18 G 0.5	0028145		
25 G 0.5	0028146	3 G 25.0	0028187
4 G 0.75	0028160		
14 G 0.75	0028164	3 G 35.0	0028189
2 x 1.0	0028170		
3 G 1.0	0028171		
4 G 1.0	0028172		
7 G 1.0	0028174	25 X 0.25 DP	0028126
12 G 1.0	0028176		
16 G 1.0+(2x1DP) P	0028185	12 X 0.14 DP	0028100
18 G 1.0	0028178	3 X 2 X 0.14 DP	0028105
23 G 1.0+(2x1DP) P	0028186		
25 G 1.0	0028180	5 X 2 X 0.34 DP	0028136
34 G 1.0	0028190	4 X 0.34 DP	0028135
41 G 1.0	0028191		
		12 G 1.5	0028195

G = With Protective Conductor X = Without Protective Conductor

ÖLFLEX®-SERVO-FD 796 CP

ÖLFLEX®-SERVO-FD 796 CP cables are high-flexible oil-resistant servo motor cables with an outer sheath of Polyurethane. They are designed for use in high-dynamic applications with acceleration up to 50 m/s² in power chains as well as for installation subject to medium mechanical load conditions. ÖLFLEX® SERVO FD 796 CP servo motor cables are typically used for interconnection between servo drive controllers and three-phase - synchronous or asynchronous servo-engines of well-known manufacturers of drive systems.

SPECIFICATION

Design according to UL AWM 758, Style 20234 and based on HD 22.10 S2 resp. VDE 0282-10. Conductor extra fine wire strands of bare copper, core insulation Polypropylene, dependant on design power cores with or without one pair or two control cores arranged as pairs, non-woven wrapping, screen braid of tinned copper wires, coverage = 85% (nominal value), outer sheath orange polyurethane compound.

TECHNICAL DATA

Nominal voltage: U 0 /U: 600/1000 V
UL/CSA: max. 1000 V

Test voltage: Core/Core: 4000 V AC
Core/Screen: 4000 V AC
Screen/screen: 500 V AC

Transfer impedance at 30 MHz: max. 300 mΩ/m

Min. bending radius: flexing < 16 mm²: 7.5 x cable diameter
flexing > 25 mm²: 10 x cable diameter
fixed installation: 4 x cable diameter

Temperature range: flexing: -40 °C up to +80 °C max. conductor temp.
fixed installation: -50 °C up to +80 °C max. conductor temp.

Oil resistance: acc. to EN 50363-10-2 resp. VDE 0207-363-10-2

Halogen-free: acc. to VDE 0472 part 815

Flammability flame retardant: in acc. with IEC 60332-1-2 resp. VDE 0482-332-1-2
UL: VW-1
CSA: FT1

Tests: acc. to IEC 60811 resp. VDE 0473 part 811, VDE 0472, EN 50395, UL1581

Approvals: UL AWM 758, Style 20234
CSA AWM I A/B II A/B C22.2 No. 210-05

ÖLFLEX®-SERVO-FD 796 CP

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
4 G X 1.5	0027950	4 G X 1.5 + (2x1.5)	0027959	4 G X 1.5 + 2 x (2x0.75)	0027969
4 G X 2.5	0027951	4 G X 2.5 + (2x1.5)	0027960	4 G X 2.5 + 2 x (2x1.0)	0027970
4 G X 4.0	0027952	4 G X 4.0 + (2x1.5)	0027961	4 G X 4.0 + (2x1) + (2x0.75)	0027971
4 G X 6.0	0027953	4 G X 6.0 + (2x1.5)	0027962	4 G X 6.0 + (2x1) + (2x1.5)	0027972
4 G X 10.0	0027954	4 G X 10.0 + (2x1.5)	0027963	4 G X 10.0 x (2x1) + (2x1.5)	0027973
4 G X 16.0	0027955	4 G X 16.0 + (2x1.5)	0027964	4 G X 16.0 + 2 x (2x1.5)	0027974
4 G X 25.0	0027956	4 G X 25.0 + (2x1.5)	0027965	4 G X 25.0 + 2 x (2x1.5)	0027975
4 G X 35.0	0027957	4 G X 35.0 + (2x1.5)	0027966	4 G X 35.0 + 2 x (2x1.5)	0027976
4 G X 50.0	0027958	4 G X 50.0 + (2x1.5)	0027967	4 G X 50.0 + 2 x (2x2.5)	0027977

ÖLFLEX®-SERVO-FD 760P & 770 CP

These feedback and sensor leads compliment the ÖLFLEX®-Servo-FD 755P range of cables and their main application is in the transmission of control signals for servomotors. They have a low weight and space requirement while remaining suitable for continuously moving operations

SPECIFICATION

Feedback cable: fine strands of plain copper wire TPE core insulation, cores twisted together, tinned copper screen braiding with drain wire. Microbe and hydrolysis resistant outer sheath of polyurethane compound, silver-grey, flame retardant. Colour coded. Sensor leads: as above but with a PVC-based core insulation. DESINA® versions are available with Green outer sheath.

TECHNICAL DATA

Minimum bending radius for flexing:	12x Cable Diameter
Temperature Range:	Flexing: -30°C to +70°C Static: -50°C to +80°C
Working Voltage:	760 CP: 450V Control cores: 48V AC. 770 CP: 350V Control cores: 48V AC.
Conductor Stranding:	Fine wire to VDE 0295 Class 6
Colour Code:	Colour coded to Ölflex-Servo® specifications
In accordance with VDE Regulations:	Cores to VDE 0812/0281 760CP: Outer sheath VDE 0250/0281

MUD resistant in accordance with IEC 61892-4 Annex D

ÖLFLEX® - Servo-FD 760 P

No. of cores & mm² per conductor	Part No.
9 x 0.5 CP	0036260
9 X 0.5 CP	0036760
DESINA ®	

ÖLFLEX® - Servo-FD 770 CP

No. of cores & mm² per conductor	Part No.
4 x 2 x 0.25 + 2 x 1 CP	0036270
6 x 2 x 0.25 + 2 x 0.5 CP	0036280
10 x 0.14 + 2 x 0.5 CP	0036275
10 x 0.14 + 4 x 0.5 CP	0036277
15 x 0.14 + 4 x 0.5 CP	0036278
4 x 2 x 0.14 + 4 x 0.5 CP	0036281
3 x (2x 0.14 D12Y) + 2 x (0.5 D12Y) CP	0036268
3 x (2 x 0.14 D12Y) + (2 x 0.14 + 2 x 0.5) + (4 x 0.22 + 2 x 0.14) CP	0036269
DESINA ®	
2 x 2 x 0.14 + 2 x (2 x 0.14 D) + 4 x 0.5 + (4 x 0.14 D) CP	0036640
3 x (2 x 0.14 D12Y) + (2 x 0.14 + 2 x 0.5) + (4 x 0.22 + 2 x 0.14) CP	0036641
4 x 2 x 0.38 + 4 x 0.5 CP	0036642
4 X 2 X 0.25	0036901

G = With Protective Conductor X = Without Protective Conductor

LAPP GROUP

ÖLFLEX® SERVO 2YSLCY & 2YSLCYK

ÖLFLEX® SERVO 2YSLCY and 2YSLCYK are flexible cables having special EMC- performance due to double shielded, low capacitance design. Ideal for frequency converters for variable speed of 3 phase AC motors, small, medium and large sizes. 2YSLCYK having a special concentric conductor array design, where earth conductor is split into 3 individuals. This 3+3 design allows symmetry against common-mode disturbance effect. This design also improves EMC noise situation of the whole drive system. Cables are suitable in dry, damp and wet rooms/ locations. 2YSLCYK version is UV light protected for outdoor use including direct burial. Good resistance against acids, caustic solutions and certain oils at room temperature.

SPECIFICATION

Conductor fine wire bare copper, core insulation Polyethylene (PE), colour coded with one Gn/Ye conductor. Twisting 4 conductors twisted together in one layer. 2YSLCYK version having split earth conductors, segmented into 3 individuals. Screening aluminium-mylar tape wrap, metal-side outwards, on top a tinned copper wire braid. Sheath 2YSLCY: PVC sheath transparent. 2YSLCYK: PVC UV resistant black sheath.

TECHNICAL DATA

Minimum bending radius for flexing: 15x Cable Diameter

Temperature Range: Flexing: -5°C to +70°C

Working Voltage: 600/1000V

Conductor Stranding: Strands fine wire to IEC 60228 VDE 0295 Class 5

Colour Code: HD 308 S2 VDE 0293-308

In accordance with VDE Regulations: VDE 0250/0281/0282

Meets EMC requirement acc. to EN 55011 (DIN VDE 0875 Part 11)

ÖLFLEX® Servo 2YSLCY-JB

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
4 G 1.5	0036425	4 G 10.0	0036429	4 G 50.0	0036433
4 G 2.5	0036426	4 G 16.0	0036430	4 G 70.0	0036434
4 G 4.0	0036427	4 G 25.0	0036431	4 G 90.0	0036435
4 G 6.0	0036428	4 G 35.0	0036432	4 G 120.0	0036436
				4 G 150. 0	0036437
				4 G 185.0	0036438

ÖLFLEX® Servo 2YSLCYK-JB

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
3 X 1.5 + 3 G 0.25	0036439	3 X 10.0 + 3 G 1.5	0036443	3 X 50.0 + 3 G 10.0	0036447
3 X 2.5 + 3 G 0.25	0036440	3 X 16.0 + 3 G 2.5	0036444	3 X 70.0 + 3 G 10.0	0036448
3 X 4.0 + 3 G 0.75	0036441	3 X 25.0 + 3 G 4.0	0036445	3 X 95.0 + 3 G 16.0	0036449
3 X 6.0 + 3 G 1.0	0036442	3 X 35.0 + 3 G 6.0	0036446	3 X 120.0 + 3 G 16.0	0036450
				3 X 150.0 + 3 G 25.0	0036451
				3 X 185.0 + 3 G 35.0	0036479

G = With Protective Conductor X = Without Protective Conductor

LAPP GROUP

UNITRONIC® LiYY

UNITRONIC® LiYY cables are data transmission cables which have been developed from well proven types based on the specification VDE 0812. They are also used in control and signal lines in electronics for computer systems, electronic control equipment, weighing scales etc.

SPECIFICATION

Fine or multi-wire (0.34mm²) strands of plain copper wire, PVC based core insulation, cores laid up in various colours, as per DIN colour code, outer sheath of special PVC-based compound, flame retardant according to VDE 0472, part 804, test type B (IEC 332.1), pebble grey (RAL 7032).

TECHNICAL DATA

Minimum bending radius for flexing:	15x Cable Diameter
Temperature Range:	Flexing: -5°C to +70°C Static: -30°C to +80°C
Working Voltage:	Peak: 250V (not for purposes of power/high voltage current
Conductor Stranding:	Strands fine wire to VDE 0295 Class 5 (0.34mm²; 7-wire)
Colour Code:	DIN 47100
In accordance with VDE Regulations:	VDE 0812

UNITRONIC® LiYY

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.14	0028202	20 X 0.25	0028320	7 X 0.5	0028507
3 X 0.14	0028203	25 X 0.25	0028325	8 X 0.5	0028508
4 X 0.14	0028204	30 X 0.25	0028330	10 X 0.5	0028510
5 X 0.14	0028205	32 X 0.25	0028332	12 X 0.5	0028512
7 X 0.14	0028207	36 X 0.25	0028336	16 X 0.5	0028516
8 X 0.14	0028208	37 X 0.25	0028337	20 X 0.5	0028520
10 X 0.14	0028210	40 X 0.25	0028340	25 X 0.5	0028525
12 X 0.14	0028212	50 X 0.25	0028350	30 X 0.5	0028530
14 X 0.14	0028214			40 X 0.5	0028540
16 X 0.14	0028216	2 X 0.34	0028402		
20 X 0.14	0028220	3 X 0.34	0028403	2 X 0.75	0028602
21 X 0.14	0028221	4 X 0.34	0028404	3 X 0.75	0028603
25 X 0.14	0028225	5 X 0.34	0028405	4 X 0.75	0028604
30 X 0.14	0028230	7 X 0.34	0028407	5 X 0.75	0028605
36 X 0.14	0028236	8 X 0.34	0028408	7 X 0.75	0028607
37 X 0.14	0028237	10 X 0.34	0028410	8 X 0.75	0028608
40 X 0.14	0028240	12 X 0.34	0028412	10 X 0.75	0028610
50 X 0.14	0028250	14 X 0.34	0028414	12 X 0.75	0028612
56 X 0.14	0028256	16 X 0.34	0028416	16 X 0.75	0028616
		20 X 0.34	0028420	20 X 0.75	0028620
2 X 0.25	0028302	21 X 0.34	0028421	25 X 0.75	0028625
3 X 0.25	0028303	25 X 0.34	0028425		
4 X 0.25	0028304	30 X 0.34	0028430	2 X 1.0	0028702
5 X 0.25	0028305	36 X 0.34	0028436	3 X 1.0	0028703
7 X 0.25	0028307	40 X 0.34	0028440	5 X 1.0	0028705
8 X 0.25	0028308	50 X 0.34	0028450		
10 X 0.25	0028310			2 X 1.5	0028802
12 X 0.26	0028312	2 X 0.5	0028502	3 X 1.5	0028803
14 X 0.25	0028314	3 X 0.5	0028503	4 X 1.5	0028804
16 X 0.25	0028316	4 X 0.5	0028504		
18 X 0.25	0028318	5 X 0.5	0028505		

LAPP GROUP

UNITRONIC® LiYCY

UNITRONIC® LiYCY data transmission cables are a specific extension to the UNITRONIC® 100-CY range, but with DIN colour coding. These data and signal cables are used in computer systems, electronic control equipment, weighing scales - anywhere screened cables of small dimensions are needed.

SPECIFICATION

Fine or multi-wire (0.34mm²) strands of plain copper wire, PVC based core insulation, cores twisted in layers, various colours, as per DIN colour code. Wrapping of plastic film. Screen braiding of tinned copper wires. Outer sheath of special PVC-based compound, flame retardant according to VDE 0472, part 804, test type B (IEC 332.1), pebble grey (RAL 7032).

TECHNICAL DATA

Minimum bending radius for flexing:	15x Cable Diameter
Temperature Range:	Static: -30°C to +80°C
Working Voltage:	Peak: 250V (not for purposes of power/high voltage current)
Conductor Stranding:	Strands fine wire (0.34mm²; 7-wire)
Colour Code:	DIN 47100 without colour repetition
In accordance with VDE Regulations:	VDE 0812

UNITRONIC® LiYCY

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.14	0034302	2 X 0.34	0034502	2 X 0.75	0034702
3 X 0.14	0034303	3 X 0.34	0034503	3 X 0.75	0034703
4 X 0.14	0034304	4 X 0.34	0034504	4 X 0.75	0034704
5 X 0.14	0034305	5 X 0.34	0034505	5 X 0.75	0034705
6 X 0.14	0034306	6 X 0.34	0034506	7 X 0.75	0034707
7 X 0.14	0034307	7 X 0.34	0034507	10 X 0.75	0034710
8 X 0.14	0034308	8 X 0.34	0034508	12 X 0.75	0034712
10 X 0.14	0034309	12 X 0.34	0034512	18 X 0.75	0034718
12 X 0.14	0034310	18 X 0.34	0034518	25 X 0.75	0034725
14 X 0.14	0034312	25 X 0.34	0034525	30 X 0.75	0034730
16 X 0.14	0034316	28 X 0.34	0034528		
18 X 0.14	0034318	36 X 0.34	0034536	2 X 1.0	0034802
20 X 0.14	0034320	40 X 0.34	0034540	3 X 1.0	0034803
25 X 0.14	0034325	44 X 0.34	0034544	4 X 1.0	0034804
28 X 0.14	0034328	50 X 0.34	0034550	5 X 1.0	0034805
36 X 0.14	0034336			7 X 1.0	0034807
40 X 0.14	0034340	2 X 0.5	0034602	10 X 1.0	0034810
44 X 0.14	0034344	3 X 0.5	0034603	12 X 1.0	0034812
50 X 0.14	0034350	4 X 0.5	0034604	18 X 1.0	0034818
		5 X 0.5	0034605	25 X 1.0	0034825
2 X 0.25	0034402	6 X 0.5	0034606		
3 X 0.25	0034403	7 X 0.5	0034607	2 X 1.5	0034902
4 X 0.25	0034404	8 X 0.5	0034608	3 X 1.5	0034903
5 X 0.25	0034405	10 X 0.5	0034610	4 X 1.5	0034904
6 X 0.25	0034406	12 X 0.5	0034612	5 X 1.5	0034905
7 X 0.25	0034407	18 C 0.5	0034618	7 X 1.5	0034907
8 X 0.25	0034408	20 X 0.5	0034620	12 X 1.5	0034912
10 X 0.25	0034410	25 X 0.5	0034625	18 X 1.5	0034918
12 X 0.26	0034412	30 X 0.5	0034630	25 X 1.5	0034925
18 X 0.25	0034418				
25 X 0.25	0034425				
36 X 0.25	0034436				
40 X 0.25	0034440				
50 X 0.25	0034450				
61 X 0.25	0034461				

Other sizes and dimensions available on request.

LAPP GROUP

UNITRONIC® LiYY (TP) & LiYCY (TP)

UNITRONIC® LiYY (TP) and LiYCY (TP) cables have been designed to offer reduced electrical interference because of their twisted pair and screened constructions. The robust PVC sheath makes the cables ideal for industrial data applications.

SPECIFICATION

Fine strands of plain copper wire, PVC based core insulation, cores twisted into pairs and pairs into layers. Colour coded to DIN 47100. A special film wrap contains the core bundle and the special PVC outer sheath is flame retardant to VDE 0472, part 804, test type B (IEC 332.1) pebble grey (RAL 7032). The LiYCY (TP) version has an additional screen of tinned copper wire braid.

TECHNICAL DATA

Temperature Range:	Static: -30°C to +70°C
Working Voltage:	Peak: 250V (not for purposes of power/high voltage current)
Conductor Stranding:	Fine wire strands to VDE 0295 Class 5
Colour Code:	DIN 47100
In accordance with VDE Regulations:	VDE 0814 (DIN 47414) resp.VDE 0812

UNITRONIC® LiYY (TP)

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 2 X 0.14	0035101	2 X 2 X 0.25	0035160	2 X 2 X 0.5	0035170
3 X 2 X 0.14	0035102	3 X 2 X 0.25	0035161	3 X 2 X 0.5	0035171
4 X 2 X 0.14	0035103	4 X 2 X 0.25	0035162	4 X 2 X 0.5	0035172
5 X 2 X 0.14	0035104	6 X 2 X 0.25	0035163	8 X 2 X 0.5	0035174
6 X 2 X 0.14	0035105	8 X 2 X 0.25	0035164	10 X 2 X 0.5	0035175
10 X 2 X 0.14	0035108	10 X 2 X 0.25	0035165		
12 X 2 X 0.14	0035110				
16 X 2 X 0.14	0035113				

UNITRONIC® LiYCY (TP)

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 2 X 0.14	0035131	4 X 2 X 0.25	0035802	2 X 2 X 0.75	0035820
3 X 2 X 0.14	0035141	6 X 2 X 0.25	0035803	3 X 2 X 0.75	0035821
4 X 2 X 0.14	0035132	8 X 2 X 0.25	0035804	4 X 2 X 0.75	0035822
6 X 2 X 0.14	0035133	10 X 2 X 0.25	0035805	5 X 2 X 0.75	0035827
8 X 2 X 0.14	0035150	12 X 2 X 0.25	0036806	6 X 2 X 0.75	0035823
10 X 2 X 0.14	0035134	16 X 2 X 0.25	0035807	8 X 2 X 0.75	0035824
12 X 2 X 0.14	0035135	25 X 2 X 0.25	0035808	12 X 2 X 0.75	0035825
16 X 2 X 0.14	0035136				
20 X 2 X 0.14	0035142	2 X 2 X 0.5	0035810	2 X 2 X 1.0	0035830
25 X 2 X 0.14	0035137	3 X 2 X 0.5	0035811	3 X 2 X 1.0	0035831
		4 X 2 X 0.5	0035812	4 X 2 X 1.0	0035832
2 X 2 X 0.25	0035800	6 X 2 X 0.5	0035813	5 X 2 X 1.0	0035836
3 X 2 X 0.25	0035801	8 X 2 X 0.5	0035814		
		12 X 2 X 0.5	0035816		
		16 X 2 X 0.5	0035817		

LAPP GROUP

UNITRONIC® LiHH

UNITRONIC® LiHH is a halogen free, flexible cable for control and data transmission, for low current applications. The cable is intended for static laying and flexible use in dry and damp interiors. Ideally suited for areas with a high density of people as well as high value property that requires protection in case of fire.

SPECIFICATION

Fine strands of plain copper wire, halogen free compound core insulation. Colour coded to DIN 47100. A special film wrap contains the core bundle. Halogen free outer sheath compound HM2 to VDE 0207 part 24, Grey (RAL 7032).

TECHNICAL DATA

Temperature Range: Static: -30°C to +70°C

Working Voltage: Peak: 250V (not for purposes of power/high voltage current)

Conductor Stranding: Fine wire strands to VDE 0295 Class 5

Colour Code: DIN 47100

Flame Propagation: To VDE 0482 PART 265-2-1 / IEC 60332-1

Absence of Halogens: Acc. to VDE 0472 part 815

UNITRONIC® LiHH

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.14	0037100	2 X 0.34	0037140	2 X 0.75	0037160
3 X 0.14	0037101	3 X 0.34	0037141	4 X 0.75	0037162
4 X 0.14	0037102	4 X 0.34	0037142	5 X 0.75	0037163
5 X 0.14	0037103	5 X 0.34	0037143	7 X 0.75	0037164
6 X 0.14	0037104	7 X 0.34	0037144	12 X 0.75	0037165
8 X 0.14	0037106	10 X 0.34	0037146		
12 X 0.14	0037108	12 X 0.34	0037147	3 X 1.0	0037171
25 X 0.14	0037110			4 X 1.0	0037172
		2 X 0.5	0037150		
2 X 0.25	0037120	3 X 0.5	0037151	3 X 1.5	0037181
3 X 0.25	0037121	4 X 0.5	0037152	4 X 1.5	0037182
4 X 0.25	0037122	5 X 0.5	0037153		
5 X 0.25	0037123	7 X 0.5	0037154		
6 X 0.25	0037124	12 X 0.5	0037155		
8 X 0.25	0037126				
12 X 0.26	0037128				
16 X 0.25	0037129				

UNITRONIC® LiHCH

UNITRONIC® LiHCH is a halogen free, flexible cable for control and data transmission, for low current applications. The cable is intended for static laying and flexible use in dry and damp interiors. Ideally suited for areas with a high density of people, as well as high value property that requires protection in case of fire. The tinned copper wire braid protects the cable against external electrical influences.

SPECIFICATION

Fine strands of plain copper wire, halogen free compound core insulation. Colour coded to DIN 47100. A special film wrap contains the core bundle. Tinned copper wire braid. Halogen free outer sheath compound HM2 to VDE 0207 part 24, Grey (RAL 7032).

TECHNICAL DATA

Temperature Range:	Static: -30°C to +70°C
Working Voltage:	Peak: 250V (not for purposes of power/high voltage current)
Conductor Stranding:	Fine wire strands to VDE 0295 Class 5
Colour Code:	DIN 47100
Flame Propagation:	To VDE 0482 PART 265-2-1 / IEC 60332-1
Absence of Halogens:	Acc. to VDE 0472 part 815
Smoke Density:	Acc. to VDE 0472 part 816 / IEC 61034-1-2

UNITRONIC® LiHCH

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.14	0037302	2 X 0.34	0037502	2 X 0.75	0037702
3 X 0.14	0037303	3 X 0.34	0037503	3 X 0.75	0037703
4 X 0.14	0037304	4 X 0.34	0037504	4 X 0.75	0037704
5 X 0.14	0037306	5 X 0.34	0037505	5 X 0.75	0037705
6 X 0.14	0037307	7 X 0.34	0037507	7 X 0.75	0037707
8 X 0.14	0037308	10 X 0.34	0037510		
12 X 0.14	0037312	25 X 0.34	0037525	2 X 1.0	0037802
25 X 0.14	0037325			3 X 1.0	0037803
		2 X 0.5	0037602	4 X 1.0	0037804
2 X 0.25	0037402	3 X 0.5	0037603	7 X 1.0	0037807
3 X 0.25	0037403	4 X 0.5	0037604		
4 X 0.25	0037404	5 X 0.5	0037605	2 X 1.5	0037902
5 X 0.25	0037406	7 X 0.5	0037607	3 X 1.5	0037903
6 X 0.25	0037407	12 X 0.5	0037612	5 X 1.5	0037905
8 X 0.25	0037408	18 X 0.5	0037618		
10 X 0.25	0037410	25 X 0.5	0037625		
25 X 0.25	0037425				

UNITRONIC® LiHCH (TP)

UNITRONIC® LiHCH is a halogen free, twisted pair flexible cable for control and data transmission, for low current applications. The cable is intended for static laying and flexible use in dry and damp interiors. By twisting the pairs the electric circuits are de-coupled and the tinned copper wire braid protects the cable against external electrical influences. Ideally suited for areas with a high density of people, as well as high value property that requires protection in case of fire.

SPECIFICATION

Fine strands of plain copper wire, halogen free compound core insulation, cores twisted into pairs and pairs into layers. Colour coded to DIN 47100. A special film wrap contains the core bundle. Tinned copper wire braid. Halogen free outer sheath compound HM2 to VDE 0207 part 24, Grey (RAL 7032).

TECHNICAL DATA

Temperature Range: Static: -30°C to +80°C

Working Voltage: Peak: 250V (not for purposes of power/high voltage current)

Conductor Stranding: Fine wire strands to VDE 0295 Class 5

Colour Code: DIN 47100

Flame Propagation: To VDE 0482 PART 265-2-1 / IEC 60332-1

Absence of Halogens: Acc. to VDE 0472 part 815

Smoke Density: Acc. to VDE 0472 part 816 / IEC 61034-1-2

UNITRONIC® LiHCH (TP)

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 2 X 0.14	0038302	8 X 2 X 0.25	0038408	2 X 2 X 0.75	0038702
3 X 2 X 0.14	0038303	10 X 2 X 0.25	0038412	3 X 2 X 0.75	0038703
4 X 2 X 0.14	0038304	25 X 2 X 0.25	0038416	4 X 2 X 0.75	0038704
6 X 2 X 0.14	0038306			8 X 2 X 0.75	0038708
8 X 2 X 0.14	0038308	2 X 2 X 0.5	0038602		
10 X 2 X 0.14	0038310	3 X 2 X 0.5	0038603	2 X 2 X 1.0	0038802
12 X 2 X 0.14	0038312	4 X 2 X 0.5	0038604	3 X 2 X 1.0	0038803
25 X 2 X 0.14	0038325	5 X 2 X 0.5	0038606	4 X 2 X 1.0	0038804
		7 X 2 X 0.5	0038608	5 X 2 X 1.0	0038805
2 X 2 X 0.25	0038402	12 X 2 X 0.5	0038612		
3 X 2 X 0.25	0038403	16 X 2 X 0.5	0038616		
4 X 2 X 0.25	0038404				
6 X 2 X 0.25	0038406				

LAPP GROUP

UNITRONIC® Li2YCY PiMF

UNITRONIC® Li2YCY PiMF with individual screening of the pairs is particularly suitable for wiring data systems and controls in large industrial plants, for the transmission of sensitive signals and high bit rates, for enhanced requirements with respect to near-end crosstalk attenuation and in conditions of high electrical interference. For measurement value transmission and serial 2-wire interfaces. Cables of this type are intended for limited flexible use and for static laying in dry and damp interiors.

SPECIFICATION

Cross-section 0.22mm² and 0.34mm² seven-wire strands of plain copper wire, PE core insulation, cores twisted in pairs, pair screening of aluminium laminated foil with drain wire, screened pairs twisted in layers, polymer film wrapping, screen braiding of copper wire, outer sheath of special PVC-based compound, flame retardant according to VDE 0472, part 804, test type B (IEC 332.1), pebble grey (RAL 7032). Cross-section 0.5mm2 seven-wire strands of plain copper wire, PE core insulation, cores of different colours to DIN 47100, cores twisted in pairs. Cross-section 1.0mm2 fine wire strands of plain copper wire, PE core insulation, one white core twisted into a pair, pairs marked by number printed retaining spiral. Pair screening of aluminium laminated plastic foil with drain wire, screened pairs twisted in layers, polymer film wrapping, screen braiding of copper wire, outer sheath of special PVC-based compound, flame retardant according to VDE 0472, part 804, test type B (IEC 332.1), pebble grey (RAL 7032).

TECHNICAL DATA

Temperature Range:	Static: -30°C to +70°C
Working Voltage:	Peak: 250V (not for purposes of power/high voltage current)
Conductor Stranding:	In reference to VDE 0881 resp. VDE 0295
Colour Code:	DIN 47100

UNITRONIC® Li2YCY PiMF cross section 0.22 mm² and 0.34mm²

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 2 X 0.22	0034040	8 X 2 X 0.22	0034043	3 X 2 X 0.34	0034046
3 X 2 X 0.22	0034041	10 X 2 X 0.22	0034044	4 X 2 X 0.34	0034047
4 X 2 X 0.22	0034042	2 X 2 X 0.34	0034045	8 X 2 X 0.34	0034048
				10 X 2 X 0.34	0034049

UNITRONIC® Li2YCY PiMF cross section 0.5 mm² and 1.0 mm²

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 2 X 0.5	0034060	8 X 2 X 0.5	0034063	3 X 2 X 1.0	0034070
3 X 2 X 0.5	0034061	10 X 2 X 0.5	0034064	4 X 2 X 1.0	0034071
4 X 2 X 0.5	0034062	2 X 2 X 0.5	0034065	8 X 2 X 1.0	0034072
				10 X 2 X 1.0	0034073

LAPP GROUP

UNITRONIC-FD®P & CP PLUS UL/CSA

Automated production processes require data transmission cables of ever higher flexibility and reliability. UNITRONIC-FD® is a development in our data transmission cables for power chain systems. Special make-up techniques make this cable particularly suitable for use in mechanically moving parts or areas where machine tools work at ever increasing speeds. The CP version has an additional copper wire braid for EMC protection and UL/CSA approval..

SPECIFICATION

Superfine strands of plain copper wire, Polyolefine core insulation, cores with various colours to DIN colour code, twisted in layers with short lay lengths, textile wrapping over outer layer. Sheath of special PUR-based compound, silver-grey (RAL 7001).

TECHNICAL DATA

Minimum bending: radius for flexing	5x Cable Diameter
Temperature Range:	Flexing: -40°C to +70°C
Working Voltage:	Peak: 250V (not for purposes of power/high voltage current)
Conductor Stranding:	Strands, superfine wire to IEC 60228 (VDE 0295) Class 6
Colour Code:	DIN 47100
Approval:	c(UL) Typ CMX acc. to UL 444 and CSA C22.2 No. 214-02

UNITRONIC-FD® P

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
3 X 0.14	0028850	2 X 0.25	0028858	2 X 0.34	0028867
4 X 0.14	0028851	3 X 0.25	0028859	3 X 0.34	0028868
5 X 0.14	0028852	4 X 0.25	0028860	4 X 0.34	0028869
7 X 0.14	0028853	5 X 0.25	0028861	5 X 0.34	0028870
10 X 0.14	0028854	7 X 0.25	0028862	7 X 0.34	0028871
14 X 0.14	0028855	10 X 0.25	0028863	10 X 0.34	0028872
18 X 0.14	0028856	14 X 0.25	0028864	14 X 0.34	0028873
25 X 0.14	0028857	18 X 0.25	0028865	18 X 0.34	0028874
		25 X 0.25	0028866	25 X 0.34	0028875

UNITRONIC-FD® CP

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
3 X 0.14	0028881	3 X 0.25	0028890	3 X 0.34	0028899
4 X 0.14	0028882	4 X 0.25	0028891	4 X 0.34	0028900
5 X 0.14	0028883	5 X 0.25	0028892	5 X 0.34	0028901
7 X 0.14	0028884	7 X 0.25	0028893	7 X 0.34	0028902
10 X 0.14	0028885	10 X 0.25	0028894	10 X 0.34	0028903
14 X 0.14	0028886	14 X 0.25	0028895	14 X 0.34	0028904
18 X 0.14	0028887	18 X 0.25	0028896	18 X 0.34	0028905
25 X 0.14	0028888	25 X 0.25	0028897	25 X 0.34	0028906

LAPP GROUP

UNITRONIC® BUS PB

UNITRONIC® BUS L2/FIP is a data cable for the Siemens field-net Sinec L2 DP (to DIN 19245 part 3 and EN 50170), for field bus system F.I.P (Factory Instrumentation Protocol) as well as for high performance data networks with 150 ohms nominal impedance. The cable is designed for the system-defined transmission rates of 1.5Mbit/s, 2.5Mbit/s and 12Mbit/s, the transmission characteristics conform to the system and guarantee a high operating security during data transmission. It is suitable for interfaces RS 422 and RS 485. Due to its double screening the cable is suitable for installation in electromagnetically demanding areas.

TECHNICAL DATA

Minimum bending radius: 75mm

Temperature Range: Static: -40°C to +80°C
Working Voltage: Peak: 250V (not for purposes of power/high voltage current)

Characteristic impedance: 150 ± 15 Ohm
Ohm

No. of cores & mm² per conductor	Part No.
1 X 2 X 0.64	2170220 UNITRONIC® BUS PB Conventional cable assembly
1 X 2 X 0.64	2170820 UNITRONIC® BUS PB UL/CSA Fast Connect cable assembly
1 X 2 X 0.64 + 3 X 1.0	2170225 UNITRONIC® BUS PB Combi Conventional cable assembly
1 X 2 X 0.64	2170326 UNITRONIC® BUS PB Fast Connect Halogen Free
1 X 2 X 0.64	2170236 UNITRONIC® BUS PB Direct Burial/Outdoor Installation UV resistant
1 X 2 X 0.64	2170222 UNITRONIC® BUS PB FD P PUR High Flexible

Full data sheets available online at **www.lappgroup.co.uk**

UNITRONIC® BUS PA

Data cable for Profibus process automation applications according to IEC 61158-2. Designed for connecting sensors and actuators, including areas in risk of explosion. Fast Connect “FC” version available which allows a quick connection using an IDC connector.

TECHNICAL DATA

Minimum bending radius for static applications: 10 x cable diameter

Temperature Range: -30°C to +80°C

Working Voltage: Peak: 250V (not for purposes of power/high voltage current)

Conductor Resistance: (loop) max. 44 Ω/km

Characteristic impedance: 100 ±20Ω

No. of cores & mm² per conductor	Part No.
1 x 2 x 1 UNITRONIC® BUS PA (Blue)	2170234
1 x 2 x 1 UNITRONIC® BUS PA (Black)	2170235
1 x 2 x 1 UNITRONIC® BUS PA FC (Blue)	2170334
1 x 2 x 1 UNITRONIC® BUS PA FC (Black)	2170335

Full data sheets available online at **www.lappgroup.co.uk**

UNITRONIC® DEVICENET THICK & THIN

UNITRONIC® DeviceNet Thick incorporates power and data pair for backbone wiring. UNITRONIC® DeviceNet Thin is a 2 pair cable that connects industrial devices e.g. limit switches, photoelectric switches, PLC's, variable frequency drives and motor starters.

TECHNICAL DATA

Minimum bending radius for static applications: 75mm
Temperature Range: -25°C to +80°C
Conductor Resistance: Thick (loop) max. 45Ohm/Km
Thin (loop) max. 180Ohm/Km
Characteristic impedance: 120 Ohms
Working Voltage: Peak: 300V (not for purposes of power/high voltage current)

No. of cores & mm² per conductor	Part No.
1x2x18AWG + 1x2x15AWG	2170340 UNITRONIC® BUS DN Thick Halogen Free
1x2x24AWG + 1x2x22AWG	2170341 UNITRONIC® BUS DN Thin Halogen Free
1x2x18AWG + 1x2x15AWG	2170342 UNITRONIC® BUS DN Thick PVC
1x2x24AWG + 1x2x22AWG	2170343 UNITRONIC® BUS DN Thin PVC
1x2x18AWG + 1x2x15AWG	2170344 UNITRONIC® BUS DN Thick FD P High Flexible PUR
1x2x24AWG + 1x2x22AWG	2170345 UNITRONIC® BUS DN Thin FD P High Flexible PUR

Full data sheets available on request.

UNITRONIC® BUS AS INTERFACE

UNITRONIC® BUS AS-Interface is a field bus cable, 2 x 1.5 for actuator sensor interface. The data and energy transmission are both transmitted via an unscreened geometrically coded two core flat cable. ASI is standardised Europe wide in EN 50295 and internationally in IEC 62026-2.

TECHNICAL DATA

Minimum bending: radius for static applications 3x Cable Thickness

Temperature Range: Rubber: -40°C to +85°C
TPE: -40°C to +105°C
PUR: -40°C to +85°C
PVC: -30°C to +90°C

Working Voltage: Peak: 300V (not for purposes of power/high voltage current)

No. of cores & mm² per conductor	Part No.	Sheath Material	Sheath Colour
2 X 1.5	2170228	EPDM(rubber)	Yellow
2 X 1.5	2170229	EPDM(rubber)	Black
2 X1.5	2170230	TPE	Yellow
2 X 1.5	2170231	TPE	Black
2 X1.5	2170311	FRNC	Yellow
2 X1.5	2170312	FRNC	Black
2 X 1.5	2170842	PVC UL/CSA	Yellow
2 X 1.5	2170843	PVC UL/CSA	Black

Full data sheets available on request.

UNITRONIC® BUS SAFETY

UNITRONIC® BUS SAFETY is a field bus cable for SafetyBUS p® field network systems, also for bus systems with nominal impedance of 120Ω. The transmission characteristics of the cable conforms to the SafetyBUS p® system and guarantees a high operating security during data transmission.

Permitted transmission rate: 50 kBit/s at 1km cable length
125 kBit/s at 500mtr cable length
250 kBit/s at 250mtr cable length
500 kBit/s at 100mtr cable length

TECHNICAL DATA

Minimum bending: radius for static applications 10x Cable Diameter

Temperature Range: Rubber: -30°C to +80°C
-40°C to +80°C (UL AWM) version

Working Voltage: Peak: 250V (not for purposes of power/high voltage current)
Peak: 300V (not for purposes of power/high voltage current)(UL AWM Version)

No. of cores & mm² per conductor	Part No.
3 X 0.75	2170295
3 X 0.75	2170895 UL AWM Style 2464
3 X 0.75	2170885 High flexible application i.e Cable chain..

Full data sheets available on request.
SafetyBUS® is a registered trademark of Pilz GmbH & Co.

ETHERLINE CAT 5e

ETHERLINE® Industrial Ethernet CAT.5e is a high speed cable for Industrial Ethernet for fixed installations in dry, wet or damp rooms. Cable meets the transmission characteristics for Category 5e of IEC 61156-5 Ed.2 and confirms to PROFINET® installation guide.

TECHNICAL DATA

Temperature range: -40°C to +75°C

Working voltage: Peak: 125V (not for purposes of power/high voltage current)

Loop Resistance: ≤ 118.2 Ω/Km

Signal Run Time: ≤ 5.3ns/m

Insulation Resistance: ≥5GΩ/Km

Capacitance at 800 hz: nom. 48pF/m

Velocity of propagation: nom. 66%

Characteristic impedance 4 – 100MHz: 100 (±15) Ω

No. of cores & mm² per conductor	Part No.
2 x 2 x AWG 22/1	2170891 ETHERLINE Y UL/CSA CAT.5e
2 x 2 x AWG 22/1	2170893 ETHERLINE Y Fast Connect UL/CSA CAT.5e

Full data sheets available on request.
PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

ÖLFLEX® HEAT 180 SiF, SiF/GL, SiD & SiZ

These silicone-insulated cables are ideal for use where there is a variable temperature range and, in particular, where heat is an essential element of the production process. The SiF single core cable has a silicone rubber based insulation whilst the SiF/GL cable has the additional protection of a lacquered glass fibre braid. Suitable for use in foundries, bakeries, glass and ceramics factories and electric motors.

SPECIFICATION

ÖLFLEX® HEAT 180 SiF: Cores of fine strands of tinned electrolytic copper wire with silicone rubber based insulation. For colours see next page.
ÖLFLEX® HEAT 180 SiF/GL: As SiF with white silicone rubber insulation and lacquered glass fibre braid, colour white.
ÖLFLEX® HEAT 180 SiD: As SiF but with a solid copper conductor. For colours see next page.
ÖLFLEX® HEAT 180 SiZ: As SiF with silicone rubber insulation in red, two cores parallel in figure 8 configuration.

TECHNICAL DATA

Minimum bending: radius fixed:	6x Cable Thickness
Temperature Range:	Static: -50°C to +180°C
Working Voltage:	300/500V
Conductor Stranding:	SiF, SiFGL, SiZ: Fine wire to VDE 0295, Class 5. SiD; Solid conductor

ÖLFLEX® Heat 180 SiF

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per	Part No.
0.25	0047...	4.0	0053...	50.0	0059...
0.5	0048...	6.0	0054...	70.0	0060...
0.75	0049...	10.0	0055...	95.0	0061...
1.0	0050...	16.0	0056...	120.0	0062...
1.5	0051...	25.0	0057...	150.0	0063...
2.0	0052...	35.0	0058...	185.0	0064...

ÖLFLEX® Heat SiF/GL

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per	Part No.
0.25	0065101	1.5	0065105	10.0	0065109
0.5	0065102	2.5	0065106	16.0	0065110
0.75	0065103	4.0	0065107	25.0	0065111
1.0	0065104	6.0	0065108	35.0	0065112
				50.0	0065113

ÖLFLEX® Heat 180 SiD

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per	Part No.
0.5	0068...	1.0	0070...	2.5	0072...
0.75	0069...	1.5	0071...	4.0	0073...
				6.0	0074...

ÖLFLEX® Heat 180 SiZ

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.5	0065201	2 X 0.75	0065202

When ordering, please complete the part number with corresponding colour code.

Colour Codes	Colour Codes	Colour Codes
000 - green/yellow	005 - yellow	009 - orange
001 - black	006 - green	104 - red
002 - blue	007 - violet	105 - white
003 - brown	008 - pink	106 - grey
004 - beige		

ÖLFLEX® HEAT 180 SiHF & SiHF/GLS

This multi-core silicone rubber sheathed cable can be installed where temperature ranges are widely variable. Like other cables in the range it performs extremely well under fire conditions, being halogen free and low in smoke, a flexible and durable cable, resistant to many chemicals and adverse climatic conditions. ÖLFLEX® HEAT 180 SiHF/GLS cables are used if, in addition to resistance to temperature, high mechanical strength is required.

SPECIFICATION

Cores of fine strands of tinned electrolytic copper with silicone rubber based insulation. Cores twisted together with silicone based outer sheath. Cores coloured up to 5 core, 7 core and above then available in black with white numbers. SiHF/GLS has an additional glass fibre wrapping and an outer sheath of galvanised steel wire.

TECHNICAL DATA

Minimum bending:	SiHF: 15x Cable Diameter
radius fixed:	SiHF: 20x Cable Diameter
Temperature Range:	-50°C to +180°C
Working Voltage:	300/500V
Conductor Stranding:	Fine wire to VDE 0295 Class 5 IEC 60228 Class 5
Colour Code:	Up to 5 cores: BS 6500; VDE 0293 Above 6 cores: black with white numbers
Halogen Free:	acc. to IEC 60754-1 resp. VDE 0472 part 815
Corrosivity:	acc. to IEC 60754-2 resp. VDE 0482 part 267-2-3
Tests:	acc. to IEC 60811-x-x resp. VDE 0472 part 811.x.x

ÖLFLEX® Heat 180 SiHF

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.75	0046001	4 G 1.5	00460153	2 X 4.0	0046025
3 G 0.75	0046002	5 G 1.5	00460163	3 G 4.0	0046026
4 G 0.75	00460033	7 G 1.5	0046018	4 G 4.0	00460273
5 G 0.75	00460043	12 G 1.5	0046039	5 G 4.0	00460283
7 G 0.75	0046006	16 G 1.5	0046040	7 G 4.0	0046030
		20 G 1.5	0046041		
2 X 1.0	0046007	24 G 1.5	0046042	3 G 6.0	0046032
3 G 1.0	0046008			4 G 6.0	00460333
4 G 1.0	00460093	2 X 2.5	0046019	5 G 6.0	00460343
5 G 1.0	00460103	3 G 2.5	0046020	7 G 6.0	0046036
7 G 1.0	0046012	4 G 2.5	00460213		
		5 G 2.5	00460223	4 G 10.0	00460373
2 X 1.5	0046013	7 G 2.5	0046024	5 G 10.0	00460453
3 G 1.5	0046014				
				4 G 16.0	00460383

ÖLFLEX® Heat 180 SiHF/GLS

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.75	0046201	2 X 1.5	0046213	3 X 4.0	0046226
3 G 0.75	0046202	3 G 1.5	0046214	4 G 4.0	00462273
4 G 0.75	00462033	4 G 1.5	00462153	5 G 4.0	00462283
5 G 0.75	00462043	5 G 1.5	00462163		
7 G 0.75	0046206	7 G 1.5	0046218	3 G 6.0	0046230
		12 G 1.5	0046237	4 G 6.0	0046231
2 X 1.0	0046207			5 G 6.0	0046232
3 G 1.0	0046208	2 X 2.5	0046219		
4 G 1.0	00462093	3 G 2.5	0046220	4 G 10.0	0046234
5 G 1.0	00462103	4 G 2.5	0046221		
7 G 1.0	0046212	5 G 2.5	0046222	4 G 16.0	0046235
		7 G 2.5	0046224		

G = With Protective Conductor X = Without Protective Conductor

LAPP GROUP

ÖLFLEX® HEAT 180 EWKF & EWKF+C

This product is very similar to the ÖLFLEX® HEAT 180 SiHF, but with a tougher black outer sheath, making it more wear and tear resistant. In many applications this cable can replace the glass fibre braided version. The cable is halogen free and low in smoke and is therefore an ideal choice for situations where a rugged halogen free cable is required, such as the power leads on hand tools. ÖLFLEX® HEAT 180 EWKF+C cables are used in all cases where not only higher temperatures prevail but also where there are particular requirements as regards EMC.

SPECIFICATION

Cores of fine wire strands of tinned electrolytic copper with silicone rubber based insulation. Cores twisted together with silicone based outer sheath. Cores coloured up to 5-core then available in black with white numbers. ÖLFLEX® HEAT 180 EWKF+C has a tinned copper wire braid for EMC protection.

TECHNICAL DATA

Minimum bending:	EWKF: 15x Cable Diameter
radius fixed:	EWKF+C: 20x Cable Diameter
Temperature Range:	-50°C to +180°C
Working Voltage:	300/500V
Conductor Stranding:	Fine wire to VDE 0295 Class 5 IEC 60228 Class 5
Colour Code:	Up to 5 cores: BS 6500; VDE 0293 Above 6 cores: black with white numbers
Flammability:	flame retardant in acc. to IEC 60332-1-2 resp. VDE 0482-332-1-2 after combustion a SiO2-ash skeleton remains, which has still good insulation properties but has no more any mechanical stability.

Halogen Free:	acc. to IEC 60754-1 resp. VDE 0472 part 815
Corrosivity:	acc. to IEC 60754-2 resp. VDE 0482 part 267-2-3
Tests:	acc. to IEC 60811-x-x resp. VDE 0473 part 811.x.x VDE 0472

ÖLFLEX® Heat 180 EWKF

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.75	0046500	2 X 1.5	0046511	2 X 2.5	0046520
3 G 0.75	0046501	3 G 1.5	0046512	3 G 2.5	0046521
4 G 0.75	00465023	4 G 1.5	00465133	4 G 2.5	00465223
5 G 0.75	00465033	5 G 1.5	00465143	5 G 2.5	00465233
		7 G 1.5	0046115		
2 X 1.0	0046506	12 G 1.5	0046116	3 G 4.0	0046131
3 G 1.0	0046507	16 G 1.5	0046117	4 G 4.0	0046323
4 G 1.0	00465083	24 G 1.5	0046119	5 G 4.0	0046333
5 G 1.0	00465093				
7 G 1.0	00466110			3 G 6.0	0046141
				4 G 6.0	0046423
				5 G 6.0	0046433

ÖLFLEX® Heat 180 EWKF+C

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 0.75	0046301	2 X 1.5	0046313	4 G 4.0	00463273
3 G 0.75	0046302	3 G 1.5	0046314	5 G 4.0	00463283
4 G 0.75	00463023	4 G 1.5	00463153		
5 G 0.75	00463033	5 G 1.5	00463163	3 G 6.0	0046330
		7 G 1.5	0046318	4 G 6.0	00463313
2 X 1.0	0046307			5 G 6.0	00463323
3 G 1.0	0046308	3 G 2.5	0046320		
4 G 1.0	00463093	4 G 2.5	00463213		
5 G 1.0	00463103	5 G 2.5	00463223		
7 G 1.0	0046312				

G = With Protective Conductor X = Without Protective Conductor

LAPP GROUP

ÖLFLEX® HEAT 350 SC

A single core cable for use on electrical circuits in extreme temperature conditions. Ideal for applications in blast furnaces, glass works and motor and oven construction.

SPECIFICATION

Fine wire strands of nickel-plated copper wire with core insulation made of glass fibre covering, 16mm² and above has an additional mica taping, and impregnated glass fibre braid. Core colour white.

TECHNICAL DATA

Minimum bending: radius fixed: 5x Cable Diameter

Temperature Range: Static: -50°C to +350°C

Working Voltage: 240/400V

Conductor Stranding: Fine wire to VDE 0295 Class 5
IEC 60228 Class 5

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
0.5	0091350	2.5	0091354	16.0	0091358
0.75	0091351	4.0	0091355	25.0	0091359
1.0	0091352	6.0	0091356	35.0	0091360
1.5	0091353	10.0	0091357	50.0	0091361

ÖLFLEX® HEAT 350 MC

A multi-core version of the HEAT 350 SC cable for use on electrical circuits in extreme temperature conditions. Ideal for applications in blast furnaces, glass works and motor and oven construction.

SPECIFICATION

Fine wire strands of nickel-plated copper wire with core insulation made of glass fibre covering and impregnated glass fibre braid. Colour coded cores. Outer sheath of impregnated glass fibre braiding, colour white.

TECHNICAL DATA

Minimum bending: radius fixed: 6x Cable Diameter

Temperature Range: Static: -50°C to +350°C

Working Voltage: 240/400V

Conductor Stranding: Fine wire to VDE 0295 Class 5
IEC 60228 Class 5

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
2 X 1.0	0091375	2 X 1.5	0091380	3 G 2.5	0091390
3 G 1.0	0091376	3 G 1.5	0091381	4 G 2.5	0091391
4 G 1.0	0091377	4 G 1.5	0091382	5 G 2.5	0091392
		5 G 1.5	0091383		

G = With Protective Conductor X = Without Protective Conductor

LAPP GROUP

ÖLFLEX® CRANE NSHTÖU

ÖLFLEX® CRANE NSHTÖU cables are special connecting and control cables for use in drum guidance, hoists, transport and conveyor systems for high mechanical load. Furthermore they are for use as hawser, drum-reeling as well as for power chains. Usage under a strain of up to 20 N/mm² is permissible. At room temperature they are widely resistant to acids, chemical resistant and certain oils.

SPECIFICATION

Cores of fine wire strands of tinned copper with 3G13 rubber based insulation. Cores coloured up to 5-core, 7 cores and above black with white numbers. Textile braid integrated in the outer sheath. Outer sheath of 5GM3 rubber based compound.

TECHNICAL DATA

Temperature range fixed installation for flex. applications:	-45°C to +60°C max. ambient temperature -25°C to +60°C max. ambient temperature
Working Voltage:	600/1000v
Min. bending radius for flex. applications:	with an outer diameter < 21.5 mm : 5 x O/D with an outer diameter > 21.5 mm : 6.25 x O/D
Flammability:	flame retardant to acc. to IEC 60332-1-2 resp. VDE 0482-332-1-2
Oil resistance:	acc. to IEC 60811-2-1 resp. VDE 0473 part 811-2-1
Tests:	acc. to IEC 60811 resp. VDE 0473 & VDE 0472
Approvals:	acc. to VDE 0250 part 814

ÖLFLEX® Crane NSHTÖU

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
3 G 1.5	0043006	4 G 4.0	00430203
4 G 1.5	00430053	5 G 4.0	00430333
5 G 1.5	00430073		
7 G 1.5	0043008	4 G 6.0	00430213
12 G 1.5	0043009	5 G 6.0	00430343
18 G 1.5	0043010		
24 G 1.5	0043011	4 G 10.0	00430223
30 G 1.5	0043012	5 G 10.0	00430003
3 G 2.5	0043013	4 G 16.0	00430233
4 G 2.5	00430303	5 G 16.0	00430323
5 G 2.5	00430143		
7 G 2.5	0043015	4 G 25.0	00430243
12 G 2.5	0043016		
18 G 2.5	0043017	4 G 35.0	00430253
24 G 2.5	0043018		
30 G 2.5	0043019	4 G 50.0	00430263
		4 G 75.0	00430283
		4 G 95.0	00430293

G = With Protective Conductor

LAPP GROUP

ÖLFLEX® CRANE PUR

ÖLFLEX® CRANE PUR is a drum-reeling power and control cable for use in hoists, transport equipment and conveyors. A central support element enables the cable for reeling under tensile stress. It is ideal for use in dry and damp rooms as well as wet industrial conditions. Following the stated temperature range outside use is possible.

SPECIFICATION

Cores of superfine wire strands of plain copper with TPE-E based insulation. Cores coloured up to 5-core, 7 cores and above black with white numbers. Central support element. Textile braid integrated in the outer sheath. Outer sheath of flame retardant Polyurethane compound.

TECHNICAL DATA

Temperature range flexing:	-40°C to +80°C max.
Min bending radius:	7.5x Outer Diameter
Working Voltage:	600/1000V
Flammability:	flame retardant in acc. to IEC 60332-1-2 resp. VDE 0482 part 332-1-2
Oil resistance:	acc. to VDE 0473 part 811-2-1
Tests:	acc. to IEC 60811 resp. VDE 0473 & VDE 0472

ÖLFLEX® Crane PUR

No. of cores & mm^2 per conductor	Part No.	No. of cores & mm^2 per conductor	Part No.
7 G 1.5	0045210	4 G 16.0	0045231
12 G 1.5	0045211		
18 G 1.5	0045212	4 G 25.0	0045232
24 G 1.5	0045213		
36 G 1.5	0045214	4 G 35.0	0045233
7 G 2.5	0045220	4 G 50.0	0045234
12 G 2.5	0045221		
18 G 2.5	0045222	3 X 25 + 3 G 6	0045240
4 G 10.0	0045230	3 X 35 + 3 G 6	0045241
		3 X 50 + 3 G 10	0045242

G = With Protective Conductor

ÖLFLEX® CRANE F

ÖLFLEX® CRANE F is a weather-resistant flat connecting-cable for use under extreme environmental conditions. The cable is for use on carrier track systems, hoisting equipments, in crane systems on building sites and shipyards.

SPECIFICATION

Cores of fine wire strands of plain copper with a 3GI3 rubber based insulation. Cores coloured up to 5-core, 7 cores and above black with white numbers. Polychloroprene 5GM3 rubber based outer sheath.

TECHNICAL DATA

Temperature range flexing:	-25°C up to +80°C max.
Min bending radius:	4 x Cable Thickness
Working Voltage:	300/500V
Flammability:	flame retardant in acc. to IEC 60332-1-2 resp. VDE 0482 part 332-1-2
Oil resistance:	acc. to VDE 0473 part 811-2-1
Tests:	acc. to IEC 60811 resp. VDE 0473 & VDE 0472

ÖLFLEX® Crane F

No. of cores & mm^2 per conductor	Part No.	No. of cores & mm^2 per conductor	Part No.
4 G 1.5	0041041	4 G 6.0	0041054
5 G 1.5	0041042	5 G 6.0	0041055
7 G 1.5	0041043	7 G 6.0	0041056
8 G 1.5	0041044		
10 G 1.5	0041045	4 G 10.0	0041057
12 G 1.5	0041046	5 G 10.0	0041058
4 G 2.5	0041047	4 G 16.0	0041059
5 G 2.5	0041048		
7 G 2.5	0041049	4 G 25.0	0041060
8 G 1.5	0041050		
2 G 2.5	0041051	4 G 35.0	0041061
4 G 4.0	0041052	4 G 50.0	0041062
7 G 4.0	0041053		
		4 G 70.0	0041063

G = With Protective Conductor

LAPP GROUP

ÖLFLEX® TORSION FRNC & TORSION D FRNC

ÖLFLEX® TORSION FRNC cables are halogen-free, oil resistant and highly flame retardant signal and control cables for use in wind turbines (nacelle, tower) under torsion load conditions.

SPECIFICATION

Cores of superfine wire strands of plain copper with a halogen free polyolefin polymer insulation. Cores coloured up to 5-core, 7 cores and above black with white numbers. Black outer sheath of halogen free compound. ÖLFLEX® TORSION D FRNC has an additional screening of helical wrapping of tinned copper wires for EMC protection.

TECHNICAL DATA

Temperature range flexing: -40°C up to +90°C max. (UL +80°C)

Min bending radius: 10 x cable diameter

Torsion: ± 150°/mtr

Working Voltage: UL/CSA – 1000V
VDE –600/1000V

Halogen-free: acc. to IEC 60754-1

Corrosivity: acc. to IEC 60754-2

Toxicity: acc. to NES 02-713 part 3

Smoke density: acc. to IEC 61034-2

Oil resistance: acc. to IEC 60811-2-1 resp. VDE 0473 part 811-2-1 UL OIL RES I and OIL RES II

Tests: acc. to IEC 60811 resp. VDE 0473-811 and VDE 0472 as well as UL 1581

Approvals: UL/CSA AWM Style 21288 (File No. E 63634)

ÖLFLEX® Torsion FRNC & Torsion D FRNC

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
12 G 0.75	1150199	3 G 2.5	1150311	4 G 16.0	1150366
14 G 0.75	1150377	4 G 2.5	1150312	5 G 16.0	1150367
18 G 0.75	1150201	5 G 2.5	1150313		
25 G 0.75	1150204	7 G 2.5	1150315	4 G 25.0	1150371
50 G 0.75	1150208	19 G 2.5	1150322	5 G 25.0	1150372
		25 G 2.5	1150376		
12 G 1.0	1150373				
16 G 1.0	1150378	4 G 4.0	1150351	TORSION D FRNC screened	
		5 G 4.0	1150352		
3 G 1.5	1150271				
4 G 1.5	1150272	4 G 6.0	1150356	4 X 2 X 0.5	1150111
5 G 1.5	1150273	5 G 6.0	1150357	12 X 2 X 0.5	1150115
7 G 1.5	1150275			4 X 2 X 0.75	1150121
12 G 1.5	1150279	4 G 10.0	1150361	12 X 2 X 0.75	1150125
25 G 1.5	1150374	5 G 10.0	1150362	18 G 0.75	1150221
32 G 1.5	1150375			50 G 0.75	1150228

LAPP GROUP

ÖLFLEX® SOLAR XLR-R

ÖLFLEX® SOLAR XLR-R single core cables are weather, abrasion and UV-resistant. These halogen free, double insulated, cross-linked solar cables are suitable for permanent outdoor use. They are for use on photovoltaic systems both for cabling of solar modules among themselves and as connection to the DC / AC inverter. The cables are Type Approved by TÜV Rheinland according latest version 2 PfG 1169/08.2007 (PV1-F).

SPECIFICATION

Cores of fine wire strands of tinned copper with an electron beam cross-linked copolymer insulation. Cores colour coded – White, red or blue. Outer sheath of black electron beam cross-linked copolymer.

TECHNICAL DATA

Temperature range flexing:	-40°C up to +120°C max.
Min bending radius fixed:	4 x Cable Diameter
Working Voltage:	AC - 600/1000V DC - 900/1500V
Halogen-free:	acc. to EN 50267-2-1/-2
Ozone resistant:	acc. to EN 50396
Weather/UV resistant:	acc. to HD 605/A1
Approvals:	TUV Type approved (2PfG 1169/08.07)

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
White Core		Red Core		Blue Core	
1.5	0023175	1.5	0023186	1.5	0023192
2.5	0023176	2.5	0023187	2.5	0023193
4.0	0023177	4.0	0023188	4.0	0023194
6.0	0023178	6.0	0023189	6.0	0023195
10.0	0023179	10.0	0023190	10.0	0023196
16.0	0023180	16.0	0023191	16.0	0023197

ÖLFLEX® SOLAR XLS-R

ÖLFLEX® SOLAR XLS-R single core cables are weather, abrasion and UV-resistant. With a reduced outer diameter that enables space and weight saving installations. These halogen free, double insulated, cross-linked solar cables are suitable for permanent outdoor use. They are for use on photovoltaic systems both for cabling of solar modules among themselves and as connection to the DC / AC inverter. Colour coding of the core insulation simplifies the differentiation of the polarity during installation.

SPECIFICATION

Cores of fine wire strands of tinned copper with an electron beam cross-linked copolymer insulation. Cores colour coded – White, red or blue. Outer sheath of black electron beam cross-linked copolymer.

TECHNICAL DATA

Temperature range flexing:	-40°C up to +100°C max.
Min bending radius fixed:	4 x Cable Diameter
Working Voltage:	AC - 600/1000V DC - 900/1500V
Flame retardant:	acc. to IEC 60332-1-2
Halogen-free:	acc. to EN 50267-2-2
Ozone resistant:	acc. to EN 50396
Weather/UV resistant:	acc. to HD 605/A1

No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.	No. of cores & mm² per conductor	Part No.
White Core		Red Core		Blue Core	
1.5	0023100	1.5	0023139	1.5	0023117
2.5	0023136	2.5	0023141	2.5	0023118
4.0	0023137	4.0	0023142	4.0	0023119
6.0	0023138	6.0	0023114	6.0	0023120
10.0	0023104	10.0	0023115	10.0	0023143
16.0	0023105	16.0	0023116	16.0	0023144

SKINTOP® ST-M & STR-M

Manufactured from tough nylon materials the Lapp range of Skintop® glands offers many advantages over conventional stuffing glands. They are used in substantial volumes on panels, switches, control equipment and within the machine tool industry. The glands feature a unique patented anti-vibration lock and due to their high IP rating (IP68 & IP69K) can be used in a variety of dry or wet industrial environments.

TECHNICAL DATA

Material: Body & Cap - Polyamide (UL94/V2)
Insert - Chloroprene Rubber

Connecting thread: M 12 x 1.5 - M 63 x 1.5 in acc. on EN 60 423, Tab. 1

Thread: trapezoidal thread

IP protection: IP 68 5 bar/30 min, in acc. to EN 60 529, (with o-ring for M40 – M63)
IP 69K, in acc. DIN 40 050, (with o-ring for M40 – M63)

Strain relief: Cat A. in acc. to EN 50262

Temperature range dynamic: -20° C up to +100° C
static: -40°C up to +100°C
(during assembly in acc. to EN 50262)

Approvals: UL, CSA, VDE, DNV

SKINTOP® ST-M

Part No.					
Grey (RAL7001)	Light Grey (RAL7935)	Black (RAL9005)	Thread Size	To suit cable dia. between (mm)	Thread length (mm)
53111000	53111400	53111200	M12 X 1.5	3.5 - 7	8
53111010	53111410	53111210	M16 X 1.5	4.5 - 10	8
53111020	53111420	53111220	M20 X 1.5	7 - 13	9
53111030	53111430	53111230	M25 X 1.5	9 - 17	10
53111040	53111440	53111240	M32 X 1.5	11 - 21	10
53111050	53111450	53111250	M40 X 1.5	19 - 28	10
53111060	53111460	53111260	M50 X 1.5	27 - 35	12
53111070	53111470	53111270	M63 x 1.5	34 - 45	12

SKINTOP® STR-M Reducing Insert

Part No.					
Grey (RAL7001)	Light Grey (RAL7935)	Black (RAL9005)	Thread Size	To suit cable dia. between (mm)	Thread length (mm)
53111100	53111500	53111300	M12 X 1.5	1 - 5	8
53111110	53111510	53111310	M16 X 1.5	2 - 7	8
53111120	53111520	53111320	M20 X 1.5	5 - 10	9
53111130	53111530	53111330	M25 X 1.5	6 - 13	10
53111140	53111540	53111340	M32 X 1.5	7 - 15	10
53111150	53111550	53111350	M40 X 1.5	15 - 23	10
53111160	53111560	53111360	M50 X 1.5	22 - 29	12
53111170	53111570	53111370	M63 x 1.6	28 - 39	12

LAPP GROUP

SKINTOP® CLICK / CLICK-R

The most innovative cable insertion system on the market for fast, highly flexible assembly with all the proven properties of our SKINTOP® cable glands in use world-wide. Simply click in – turn to left – turn to right – finished. Result is cable fixed, centred, strain relief and maximum protection class in seconds. The innovative SKINTOP® CLICK-R with reduction sealing insert for sealing smaller cable diameters.

TECHNICAL DATA

Body:	polyamide based plastic (UL 94-V2)
Cup nut:	polyamide based plastic (UL 94-V2)
Seal insert:	elastomer
Pressure nut:	polyamide based plastic, fibre-glass reinforced (UL 94-V2)
Flat seating ring:	elastomer/thermoplus for size Ø 12, Ø 16, Ø 20, Ø 25
O-Ring:	NBR for size Ø 32
Functional thread:	multi-start trapezoidal thread
Protection class:	IP 68, 5 - bar
Temperature range:	-20°C up to +100°C

SKINTOP® Click

Part No. Grey (RAL7001)	Light Grey (RAL7935)	Black (RAL9005)	Size	To suit cable dia. between (mm)	Hole Size (mm)
53112921	53112692	53112923	12	3.5 - 7	12.3 (-0.2)
53112876	53112686	53112882	16	4.5 - 10	16.3 (-0.2)
53112877	53112687	53112883	20	7 - 13	20.3 (-0.2)
53112878	53112688	53112884	25	9 - 17	25.3 (-0.2)
53112922	53112694	53112924	32	11 - 21	32.3 (-0.2)

SKINTOP® Click-R Reducing Insert

Part No. Grey (RAL7001)	Light Grey (RAL7935)	Black (RAL9005)	Size	To suit cable dia. between (mm)	Hole Size (mm)
53112927	53112925	53112929	12	1 - 5	12.3 (-0.2)
53112879	53112689	53112885	16	4 - 7	16.3 (-0.2)
53112880	53112690	53112886	20	5 - 10	20.3 (-0.2)
53112881	53112691	53112887	25	6 - 13	25.3 (-0.2)
53112928	53112926	53112931	32	7 - 15	32.3 (-0.2)

SKINTOP® MS-M & MSR-M

The SKINTOP® MS-M / MSR-M a nickel-plated brass cable gland with metric connecting thread which combines high quality with regard to consistency and reliability, is especially designed for use in manufacturing of machines and equipment, in measuring, controlling as well as in the pharmaceutical industry and for medical equipment. SKINTOP® MS-M / MSR-M75x1.5, M90x2, M110x2 have an innovative double lamella insert for easier assembling of cables with larger diameters. Now with IP 69 K approval, for proven functionality during harshest cleaning procedures of industrial machinery with high-pressure cleaners and hot water. The MSR offers sealing down to smaller diameters.

TECHNICAL DATA

Material:
Body: Nickel Plated Brass
Seal: Chloroprene Rubber
Insert: Polyamide
O Ring: NBR

Connecting thread:
M 12 x 1.5 up to M75 x 1.5, M90 x 2
M110 x 2 in acc. to EN 60423

IP protection:
IP 68, in acc. to EN 60529, for M63 plus and M75
IP 69K in acc. to DIN 40 050 for M12 up to M63
IP Test for M90 and M110 in pending.

Temperature range:
-30°C up to +100°C

Approvals:
VDE, UL, CSA, DNV for sizes up to 63mm

SKINTOP® MS-M

Part No.	Thread Size	To suit cable dia. between (mm)	Thread length (mm)
53112000	M12 X 1.5	3 - 7	6.5
53112010	M16 X 1.5	4.5 - 10	7
53112020	M20 X 1.5	7 -13	8
53112030	M25 X 1.5	9 - 17	8
53112040	M32 X 1.5	11 - 21	9
53112050	M40 X 1.5	19 - 28	9
53112060	M50 X 1.5	27 - 35	10
53112070	M63 X 1.5	34 - 45	15
53112080	M63 X 1.5 plus	44 - 55	15
53112510	M75 X 1.5	58 - 68	15
53112512	M90 X 2.0	66 - 78	20
53112514	M110 X 2.0	86 - 98	20

SKINTOP® MSR-M

Part No.	Thread Size	To suit cable dia. between (mm)	Thread length (mm)
53112100	M12 X 1.5	1 -5	6.5
53112110	M16 X 1.5	2 - 7	7
53112120	M20 X 1.5	5 - 10	8
53112130	M25 X 1.5	6 - 13	8
53112140	M32 X 1.5	7 - 15	9
53112150	M40 X 1.5	15 - 23	9
53112160	M50 X 1.5	22 - 29	10
53112170	M63 X 1.5	28 - 39	15
53112511	M75 X 1.5	53 - 63	15
53112515	M110 X 2.0	76 - 88	25

SKINTOP® MS-M ATEX & MSR-M ATEX

The SKINTOP® MS-M / MSR-M ATEX a nickel-plated brass cable gland with metric connecting thread which combines high quality with regard to consistency and reliability, it is especially designed for use with electrical equipment in areas with risk of explosion, especially in the chemical and petrochemical industry.

The cable entries SKINTOP® MS-M ATEX and SKINTOP® MSR-M ATEX are sufficient to the requirements of explosion protection to equipment-group II and equipment category 2G and 1D, type of protection Increased Safety “e” (in acc. to EN 60079-0, EN60079-7, EN 61241-1).

TECHNICAL DATA

Material:
Gland Body: Nickel Plated Brass
Cap Nut: Nickel Plated Brass
Seal: Elastomere
Insert: Plastic Polyamide-based
O Ring: Elastomere

Connecting thread: M12 x 1.5 up to M63 x 1.5 in acc. to EN 60423

IP protection: IP 68 10 bar, in acc. to EN 60529.

Temperature range: -30°C up to +100°C

SKINTOP® MS-M ATEX

Part No.	Thread Size	To suit cable dia. between (mm)	Thread length (mm)
53112700	M12 X 1.5	3 - 7	6.5
53112710	M16 X 1.5	4.5 - 10	7
53112720	M20 X 1.5	7 -13	8
53112730	M25 X 1.5	9 - 17	8
53112740	M32 X 1.5	11 - 21	9
53112750	M40 X 1.5	19 - 28	9
53112760	M50 X 1.5	26 - 35	10
53112770	M63 X 1.5	34 - 45	15
53112779	M63 X 1.5 plus	44 - 55	15

SKINTOP® MSR-M ATEX

Part No.	Thread Size	To suit cable dia. between (mm)	Thread length (mm)
53112705	M12 X 1.5	2 - 5	6.5
53112715	M16 X 1.5	4 - 7	7
53112725	M20 X 1.5	5 - 10	8
53112735	M25 X 1.5	6 - 13	8
53112745	M32 X 1.5	7 - 15	9
53112755	M40 X 1.5	16 - 23	9
53112765	M50 X 1.5	19 - 29	10
53112775	M63 X 1.5	32 - 39	15

SKINTOP® MS-SC-M / MS-SC-M-XL

The SKINTOP® MS-SC-M Screen Connection is the ideal gland for all copper screened cables. The widely variable clamping ranges greatly simplify installation and assignment and thus allow efficient stock keeping. With the SKINTOP® MS-SC-M the cable is centred, attached, strain relieved and hermetically sealed to IP68 in a single step. As a variant for panels or housings with a larger wall thickness we recommend SKINTOP® MS-SC-M-XL which has a longer connection thread.

TECHNICAL DATA

Material:	Brass Nickel-plated
Sealing ring:	Chloroprene rubber
O-ring:	NBR
Protection Class	IP68, test in acc. to EN 60 529
UL File No.	E79903
Temperature:	-25°C up to +100°C
Thread Type:	ISO metric

SKINTOP® MS-SC-M

Part No.	Thread Size	To suit cable dia. between (mm)	Thread length (mm)
53112610	M12 X 1.5	3.5 - 7	6.5
53112620	M16 X 1.5	4.5 - 9	7.0
53112630	M20 X 1.5	7 -12.5	8.0
53112640	M25 X 1.5	9 - 16.5	8.0
53112650	M32 X 1.5	11 - 21	9.0
53112660	M40 X 1.5	19 - 28	9.0
53112670	M50 X 1.5	27 - 35	10.0

SKINTOP® MS-SC-M-XL

Part No.	Thread Size	To suit cable dia. between (mm)	Thread length (mm)
53112625	M16 X 1.5	4.5 - 9	12.0
53112635	M20 X 1.5	7 -12.5	12.0
53112645	M25 X 1.5	9 - 16.5	12.0
53112655	M32 X 1.5	11 - 21	15.0
53112665	M40 X 1.5	19 - 28	15.0
53112675	M50 X 1.5	27 - 35	15.0

SKINTOP® MS-SC-M BRUSH

SKINTOP® MS-SC-M a nickel-plated brass cable gland especially designed for copper-screened cables, used to achieve a low resistance screen contact, strain relief and high protection class. The SKINTOP® MS-SC-M BRUSH contacts the screen much faster than any other system.

TECHNICAL DATA

Gland body: Nickel-plated Brass

Cap Nut: Nickel-plated Brass

Insert with lammeller design: Plastic polyamide-based

Seal insert for lammeller design: Elastomer

Contact brush: Brass wire

Sealing ring for connecting: Elastomer

Connecting thread: M25x1.5,M32x1.5, M40x1.5, M50x1.5, M63x1.5 in acc. to EN 60423

IP protection: IP68, test in acc. to EN 60 529

Temperature range: -25°C up to +100°C

SKINTOP® MS-SC-M Brush

Part No.	Thread Size	To suit cable dia. between (mm)	Thread length (mm)
53112676	M25 X 1.5	9-17	8
53112677	M32 X 1.5	11 - 21	9
53112678	M40 X 1.5	19 - 28	9
53112679	M50 X 1.5	27 - 35	10
53112680	M63 X 1.5	34 - 45	15
53112681	M63 X 1.5 plus	44 - 55	15
53112501	M75 X 1.5	53 - 63	15
53112500	M75 X 1.5 plus	58 - 68	15
53112503	M90 X 2.0	66 - 78	20
53112505	M110 X 2.0	76 - 88	20
53112504	M110 X 2.0 plus	86 - 98	20

SKINDICHT® SVF-M

The SKINDICHT® SVF-M, a flat cable gland made of brass with hexagonal body. The special feature of this flat cable gland is the design of the sealing lips. The lateral sealing lips fit automatically around various cable dimensions, so that flat cables of different outer dimensions can be sealed with only one seal. With suitable matching it is even possible to fit two flat cables with one gland. For suitable flat cables see ÖLFLEX® LIFT F for indoor applications or ÖLFLEX® CRANE F for outdoor applications.

TECHNICAL DATA

Material: Gland Body: Nickel Plated Brass
Cap Nut: Nickel Plated Brass
Seal: Polychloroprene
Washer: Steel plate zinc plated

Connecting thread: M20x1.5 up to M63x1.5 in acc. to EN 50262

Temperature range: -20°C up to +100°C

Part No.	Thread Size	To suit cable dia. between (mm)	Thread length (mm)
52107320	M20 X 1.5	0 - 15	0 - 5
52107340	M25 X 1.5	9 - 20	3 - 8
52107350	M32 X 1.5	14 - 27	4 - 11.5
52107360	M40 X 1.5	24 - 34	4 - 11.5
52107370	M50 X 1.5	29 - 44	5 - 12
52107380	M63 X 1.5	34 - 50	5 - 12

SKINTOP® NYLON & METAL LOCKNUTS

A range of nylon and nickel plated brass locknuts to fasten the Skintop® glands. These accessories are manufactured to the same high quality as the glands and ensure fast and easy installation of the appropriate products.

SKINTOP® NYLON LOCKNUTS

Part No. Grey (RAL7001)	Light Grey (RAL7935)	Black (RAL9005)	Thread Size (mm)
53119000	53119003	53119100	12
53119010	53119013	53119110	16
53119020	53119023	53119120	20
53119030	53119033	53119130	25
53119040	53119043	53119140	32
53119050	53119053	53119150	40
53119060	53119063	53119160	50
53119070	53119073	53119170	63

SKINTOP® METAL LOCKNUTS

Earth Potential Bonding Locknut
When the nut is tightened, the cutting edges cut through the insulating layer, thus guaranteeing an optimum contact.

Part No.	Thread Size (mm)	Part No.	Thread Size (mm)
52103300	12 X 1.5	52103360	50 X 1.5
52103310	16 X 1.5	52103370	63 X 1.5
52103320	20 X 1.5	52103371	75 X 1.5
52103330	25 X 1.5	52103372	90 X 2.0
52103340	32 X 1.5	52103373	110 X 2.0
52103350	40 X 1.5		

SKINDICHT® BLK-GL-M

The blind plug SKINDICHT® BLK-GL-M, made up of Polyamide, reinforced with glass fibre are used to close existing metric threaded holes.

TECHNICAL FEATURES:

Connecting thread: M12x1, 5 up to M 63x1.5 in acc to EN 50262

Material: Polyamide reinforced with glass fibre (UL 94 HB)
O-ring: Elastomere

Temperature range: -40°C up to +100°C

Colour: RAL 7001 silver grey
RAL 7035 light grey
RAL 9005 black UV-resistant

IP protection: IP 68

Part No.			
Grey (RAL7001)	Light Grey (RAL7935)	Black (RAL9005)	Thread Size (mm)
52006109	52006107	52006106	12 X 1.5
52006119	52006117	52006116	16 X 1.5
52006129	52006127	52006126	20 X 1.5
52006139	52006137	52006136	25 X 1.5
52006149	52006147	52006146	32 X 1.5
52006159	52006157	52006156	40 X 1.5
52006169	52006167	52006166	50 X 1.5
52006179	52006177	52006176	63 X 1.5

SKINDICHT® BL-M

SKINDICHT® BL-M Brass blanking plugs with metric thread for ensuring the protection class for un-used pre-threaded holes.

TECHNICAL FEATURES:

Connecting thread: M 12x1.5 up to M 75 x1.5 in acc. to EN 60423

Material: Nickel plated brass

Protection class: IP 54
IP68 with O-ring

Temperature Range: -30°C to +100°C with O-ring
-60°C to +200°C without O-ring

SKINDICHT® BL-M

Part No.	Thread Size (mm)	Part No.	Thread Size (mm)
52103100	12 X 1.5	52103140	32 X 1.5
52103110	16 X 1.5	52103150	40 X 1.5
52103120	20 X 1.5	52103160	50 X 1.5
52103130	25 X 1.5	52103170	63 X 1.5

SKINDICHT® BL-M with O-ring

Part No.	Thread Size (mm)	Part No.	Thread Size (mm)
52103105	12 X 1.5	52103145	32 X 1.5
52103115	16 X 1.5	52103155	40 X 1.5
52103125	20 X 1.5	52103165	50 X 1.5
52103135	25 X 1.5	52103175	63 X 1.5
		52103195	75 X 1.5

SKINDICHT® MR-M

The SKINDICHT® MR-M reducers enable the use of cable glands with smaller connection threads than the already existing threaded hole in machines, devices and housings.

TECHNICAL FEATURES:

Out Metric thread: M 16 x 1.5/12 x 1.5 up to M 63 x 1.5/ 50 x 1.5 in acc. to EN 50262

Material: Nickel-plated brass

Temperature range: -60°C up to +200°C

Part No.	Male Thread (mm)	Female Thread (mm)
52104310	16 X 1.5	12 X 1.5
52104311	20 X 1.5	12 X 1.5
52104312	20 X 1.5	16 X 1.5
52104313	25 X 1.5	16 X 1.5
52104314	25 X 1.5	20 X 1.5
52104315	32 X 1.5	20 X 1.5
52104316	32 X 1.5	25 X 1.5
52104317	40 X 1.5	25 X 1.5
52104318	40 X 1.5	32 X 1.5
52104319	50 X 1.5	32 X 1.5
52104320	50 X 1.5	40 X 1.5
52104321	63 X 1.5	40 X 1.5
52104322	63 X 1.5	50 X 1.5

SKINDICHT® ME-M

The SKINDICHT® ME-M enlargers enable the use of cable glands with larger connection threads than the already existing threaded hole in machines, devices and housings.

TECHNICAL FEATURES:

Thread: Metric connection threas acc. to EN 50262

Material: Nickel-plated brass

Temperature range: -60°C up to +200°C

Part No.	Male Thread (mm)	Female Thread (mm)
52104450	12 X 1.5	16 X 1.5
52104452	16 X 1.5	20 X 1.5
52104454	20 X 1.5	25 X 1.5
52104456	25 X 1.5	32 X 1.5
52104458	32 X 1.5	40 X 1.5
52104460	40 X 1.5	50 X 1.5
52104462	50 X 1.5	63 X 1.5

LAPP GROUP

EPIC® Rectangular Connector Inserts

A flexible system of housings, inserts and contacts that come together to offer a robust, secure and easy to assemble solution. With the rectangular connectors, you can be assured of the perfect connection time after time.

EPIC® H-A 3/4

Application area:	Machine and apparatus building, control tech.
Termination:	Screw termination.
Further information:	Contacts same as H-BE with or withour wire protection
Rated voltage:	400V
Rated current:	10A
Number of poles:	H-A 3 + PE integrated, H-A 4 + PE integrated
Housing:	H-A 3

EPIC® H-A 10, 16, 32, 48

Application area:	Machine and apparatus building, control tech.
Termination:	Screw termination.
Further information:	Contacts same as H-BE with or withour wire protection
Rated voltage:	250V
Rated current:	16A
Number of poles:	H-A 10 + PE integrated, H-A 16 + PE integrated H-A 32 (PIN 17...32), H-A 48 (PIN 33...48)
Housing:	H-A 10, H-A 16, H-A 32, H-A 48

EPIC® H-BE High degree of reliability

Application area:	From machine tools to control cabinets.
Termination:	Screw termination (with & without wire protection).
Further information:	Pre-mating earth contact.
Rated voltage:	500V
Rated current:	16A
Number of poles:	H-BE 6, H-BE 10, H-BE 16, H-BE 24, H-BE 32 (PIN 17...32), H-BE 48 (PIN 33...48)
Housing:	H-BE 6,10 & H-BE 16,32,48

EPIC® H-BS - For high current: 35A

Application area:	Machine tools and plant construction.
Termination:	Screw termination.
Further information:	Pre-mating earth contact.
Rated voltage:	400V
Rated current:	35A
Number of poles:	H-BS 6, H-BS 12 (PIN 7...12)
Housing:	H-B 16, H-B 32.

EPIC® STA

Application area:	Control systems, laboratories and slide-in tech.
Termination:	Screw termination and soldering termination.
Further information:	High contact density, small size same contacts with BE up to 2.5mm²
Rated voltage:	60V
Rated current:	10A
Number of poles:	STA 6, STA 14, STA 20
Housing:	H-A 3, H-A 10, H-A 16.

EPIC® H-EE High number of poles

Application area:	From mechanical engineering up to control cabinet, light & sound, plastics, machine tools.
Termination:	Crimp termination, Crimp contacts, same as H-BE - up to 4.0mm²
Further information:	Pre-mating earth contact.
Rated voltage:	500V
Rated current:	16A
Number of poles:	H-EE 10, H-EE 18, H-BE 32, H-EE 46, H-EE 64 (PIN 33...64), H-EE 92 (PIN 47...92)
Housing:	H-B 6, 10, 16, 24, 32, 48.

For the full range of rectangular inserts visit **www.lappgroup.co.uk**

LAPP GROUP

EPIC® ULTRA

A new range of top entry or side entry hoods and panel mount or side entry housings in a nickel plated zinc die cast material which offers an anti corrosion, impact and scratch resistant finish. When used in conjunction with the SKINTOP® MS-M Brush gland offers a 360° EMC protection which acts as a Farrady cage.

HOOD

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

SOCKET HOUSING

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

PANEL BASED HOUSING

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

CABLE CONNECTOR HOUSING

The cable connector hood mates with a top entry hood to offer cable to cable connection.

HOUSING EPIC® H-A 3

Basic material:	Zinc-die casting Thermoplastic
Cable entry:	PG or Metric
Locking:	Single locking lever
Protective cover:	Optional on panel mount- surface mount base.

HOUSIN-G EPIC® H-A 10/16

Basic material:	Aluminium Alloy
Cable entry:	PG or Metric
Locking:	Single locking lever
Protective cover:	Optional on panel mount- surface mount base.

HOUSING EPIC® H-A 32/48

Basic material:	Aluminium Alloy
Cable entry:	PG or Metric
Locking:	Double locking lever
Protective cover:	Optional on panel mount- surface mount base.

For the full range of rectangular inserts visit **www.lappgroup.co.uk**

LAPP GROUP

EPIC® Rectangular Connection Selector Guide

Inserts	No. of contacts	Term Tech	Suitable Contacts	Cross-sec (mm	IEC: Rated Voltage (V)	IEC: Rated Current (A)	Suitable Housing
H-A 3	3 + PE	Screw	-	0.5 - 2.5	400	23	H-A 3
H-A 4	4 + PE	Screw	-	0.5 - 2.5	400	23	H-A 4
H-A 10	10 + PE	Screw	-	0.5 - 2.5	250	16	H-A 10
H-A 16	16 + PE	Screw	-	0.5 - 2.5	250	16	H-A 16
H-A 32	32 + PE	Screw	-	0.5 - 2.5	250	16	H-A 32
H-A 48	48 + PE	Screw	-	0.5 - 2.5	250	16	H-A 48
STA 6	6	Screw	-	0.5 - 1.5	24AC/60 DC	10	H-A 3
STA 6	6	Solder	-	Max. 1.5	24AC/60 DC	10	H-A 3
STA 14	14	Screw	-	0.5 - 1.5	24AC/60 DC	10	H-A 10
STA 14	14	Solder	-	Max. 1.5	24AC/60 DC	10	H-A 10
STA 20	20	Screw	-	0.5 - 15	24AC/60 DC	10	H-A 16
STA 20	20	Solder	-	Max. 1.5	24AC/60 DC	10	H-A 16
H-Q 5	5 + PE	Crimp	H-BE 2.5	0.5 - 2.5	230 /400	16	H-A 3
H-D 7	7 + PE	Crimp	H-D 1.6	0.14 - 2.5	24AC/60 DC	10	H-A 3
H-D 8	8	Crimp	H-D 1.6	0.14 - 2.5	250	10	H-A 3
H-D 15	15 + PE	Crimp	H-D 1.6	0.14 - 2.5	250	10	H-A 10
H-D 25	25 + PE	Crimp	H-D 1.6	0.14 - 2.5	250	10	H-A 16
H-D 40	40 + PE	Crimp	H-D 1.6	0.14 - 2.5	250	10	H-A 16
H-D 64	64 + PE	Crimp	H-D 1.6	0.14 - 2.5	250	10	H-B 24
H-DD 24	24 + PE	Crimp	H-D 1.6	0.14 - 2.5	250	10	H-B 6
H-DD 42	42 + PE	Crimp	H-D 1.6	0.14 - 2.5	250	10	H-B 10
H-DD 72	72 + PE	Crimp	H-D 1.6	0.14 - 2.5	250	10	H-B 16
H-DD 108	108 + PE	Crimp	H-D 1.6	0.14 - 2.5	250	10	H-B 24
H-DD 144	144 + PE	Crimp	H-D 1.6	0.14 - 2.5	250	10	H-B 32
H-DD 216	216 + PE	Crimp	H-D 1.6	0.14 - 2.5	250	10	H-B 48
H-BE 6	6 + PE	Screw	-	0.5 - 2.5	500	16	H-B 6
H-BE 10	10 + PE	Screw	-	0.5 - 2.5	500	16	H-B 10
H-BE 16	16 + PE	Screw	-	0.5 - 2.5	500	16	H-B 16
H-BE 24	24 + PE	Screw	-	0.5 - 2.5	500	16	H-B 24
H-BE 32	32 + PE	Screw	-	0.5 - 2.5	500	16	H-B 32
H-BE 48	48 + PE	Screw	-	0.5 - 2.5	500	16	H-B 48

EPIC® Rectangular Connection Selector Guide

Inserts	No. of contacts	Term Tech	Suitable Contacts	Cross-sec (mm	IEC: Rated Voltage (V)	IEC: Rated Current (A)	Suitable Housing
H-EE 10	10 + PE	Crimp	H-BE 2.5	0.5 - 4.0	500	16	H-B 6
H-EE 18	18 + PE	Crimp	H-BE 2.5	0.5 - 4.0	500	16	H-B 10
H-EE 32	32 + PE	Crimp	H-BE 2.5	0.5 - 4.0	500	16	H-B 16
H-EE 46	46 + PE	Crimp	H-BE 2.5	0.5 - 4.0	500	16	H-B 24
H-EE 64	64 +PE	Crimp	H-BE 2.5	0.5 - 4.0	500	16	H-B 32
H-EE 92	92 +PE	Crimp	H-BE 2.5	0.5 - 4.0	500	16	H-B 48
H-BS 6	6 + PE	Screw	-	0.5 - 6.0	400	35	H-B 16
H-BS 12	12 + PE	Screw	-	0.5 - 6.0	400	35	H-B 24
H-BVE 3	3 + 2 + PE	Screw	-	0.5 - 2.5	630	16	H-B 10
H-BVE 6	6 + 2 + PE	Screw	-	0.5 - 2.5	630	16	H-B 16
H-BVE 10	10+2+PE	Screw	-	0.5 - 2.5	630	16	H-B 24
Term Blk TB-H-BE 6	6 + PE	Screw	-	0.5 - 4.0	500	16	H-B 6
Term Blk TB-H-BE10	10 + PE	Screw	-	0.5 - 4.0	500	16	H-B 10
Term Blk TB-H-BE 16	16 + PE	Screw	-	0.5 - 4.0	500	16	H-B 16
Term Blk TB-H-BE 24	24 + PE	Screw	-	0.5 - 4.0	500	16	H-B 24
Term Blk TB-H-BE 40	40 + PE	Screw	-	0.5 - 1.5	250	10	H-B 16
Term Blk TB-H-BE 64	64 +PE	Screw	-	0.5 - 1.5	250	10	H-B 24

EPIC® Rectangular Connection Selector Guide (continued)

Inserts	No. of contacts	Term Tech	Suitable Contacts	Cross-sec (mm	IEC: Rated Voltage (V)	IEC: Rated Current (A)	Suitable Housing
Mod High Current	1 + PE	Screw	-	10.0-25.0	1000	82	Module Frame
Mod High Current	2	Screw	-	10.0-25.0	1000	82	Module Frame
Mod High Voltage	3	Crimp	MC 3.6	1.5 - 10.0	1000	50	Module Frame
Mod High Voltage	4 + PE	Crimp	MC 2.5	0.5 - 25.0	1000	16	Module Frame
Mod 3 Pole	3	Crimp	MC 3.6	1.5 - 10.0	630	40	Mod Fme
Mod 4 Pole	4	Crimp	H-BE 2.5	0.5 - 4.0	630	25	Mod Fme
Mod 4 Pole	4	Cage Clamp	-	0.5 - 2.5	400	14	Mod Fme
Mod 5 Pole	5	Crimp	MC 2.5	0.5 - 4.0	400	20	Mod Fme
Mod 3 Pole Co-ax	3	Solder	MC - Co-ax		250		Module Frame
Mod Profibus DP	2 + Shield	Screw	-	Max 1.5	30	1	Module Frame
Mod Uni Bus	4 + Shield	Screw	-	Max 1.5	30	1	Module Frame
Mod RJ45	8 + 4	Crimp	H-D 1.6	Cat.5 / 0.14 - 2.5	125/600	1.5/10	Module Frame
Mod Frame MCR 6	-	For 2 Modules	-	-	-	-	H-B 6
Mod Frame MCR 10	-	For 3 Modules	-	-	-	-	H-B 10
Mod Frame MCR 16	-	For 5 Modules	-	-	-	-	H-B 16
Mod Frame MCR 24	-	For 7 Modules	-	-	-	-	H-B 24

EPIC® CIRCON LS1 Circular Connectors

The LS1 CIRCON power connectors with the contact configurations 5+PE, 3+PE+4 are designed to be used in servo motors and servo harnessing. Available in coupler, connector and panel mount configurations that satisfy simple cable-to-cable and cable-to-machine requirements. The connectors come with an integrated EMC screen termination.

MATERIAL

Housing:	Zinc die cast nickel plated
Insulation Body:	PA - UL94V-0
Sealing:	FPM
Contacts:	Brass gold plated

TECHNICAL DATA:

Rated current:	1mm contacts	7A
	2mm contacts	22A
Rated voltage:	1mm contacts	250V
	2mm contacts	630V
Temperature range:	-25°C to +125°C	
Protection degree:	IP 68 (10h/1m)	
Mating cycles:	500	

EPIC® CIRCON M23 Circular Connectors

The M23 CIRCON connectors are designed for signal transmission in servo motors and servo harnessing, measurement and control technology, and plant engineering. Available in coupler, connector and panel mount configurations that satisfy simple cable-to-cable and cable-to-machine requirements. Contacts available in crimp or solder terminations. Three keying arrangements to avoid incorrect mating.

MATERIAL

Housing: Zinc die cast nickel plated

Sealing: FPM

Contacts: Brass gold plated

TECHINCAL DATA:

Type	Rated Current	Rated Voltage	Rated Impulse Voltage
2mm Contacts (2.5mm²)			
6 pole	18A	150V	4 kV
7 pole	18A	150V	4 kV
8 + 1 pole	20A	150V	2.5 kV
1mm Contacts (1.0mm²)			
8 + 1 pole	7A	150V	2.5 kV
9 pole	7A	150V	1.5 kV
12 pole	7A	100V	1.5 kV
16 pole	7A	100V	1.5 kV
17 pole	7A	50V	0.8 kV

POWER RATING

For wires & cables having nominal voltage up to 1000 V and heat resistant wire & cables at ambient temperature 30°C

CABLE CATEGORY						
	A Single Core Cable • Rubber insulated • TPE Insulated • PVC Insulated • Heat resistant	B Multi-core cables for portable appliances • Rubber insulated • PVC insulated • TPE insualted		C Multi-core cables excl. for Portable appliances • Rubber insulated • TPE Insulated • PVC Insulated Heat resistant	D Multi-core heavy duty rubber cables ≤0.6/1kv Single core special rubber cables 0.6/1kv/1.8/3kv	
Number of current carrying conductors	1	2	3	2 or 3	3	1
Norminal cross section in mm²	Current rating in A	Current rating in A		Current rating in A	Current rating in A	
0.5	12	3	3	9	-	-
0.75	15	6	6	12	-	-
1.0	19	10	10	15	-	-
1.5.	24	16	16	18	23	30
2.5	32	25	20	26	30	41
4	42	32	25	34	41	55
6	54	40	-	44	53	70
10	73	63	-	61	74	98
16	98	-	-	82	99	132
25	129	-	-	108	131	176
35	158	-	-	135	162	218
50	198	-	-	168	202	276
70	245	-	-	207	250	347
95	292	-	-	250	301	416
120	344	-	-	292	-	488
150	391	-	-	335	-	566
185	448	-	-	382	-	644
240	528	-	-	453	-	775
300	608	-	-	523	-	898
400	726	-	-	-	-	-
500	830	-	-	-	-	-
Source of current rating:	DIN VDE 0298-4, 2008-08 Table 11 Column 2	DIN VDE 0298-4, 2008-08 Table 11 Column 3 + 4		DIN VDE 0298-4, 2008-08 Table 11 Column 5	DIN VDE 0298-4, 2008-08 Table 15 Column 4 + 2	

Notes – Additional de-rating factors can apply dependant on application. Please check following:

- Other ambient temperature see page 136
- More than 3 current carrying cores of multi-core cables up to 10mm² see page 136
- Ambient temperatures 50°C of heat resistant cables see page 137

Column A –D Cable Categories

A: Single cores: H05V-K, H07V-K, Multi-standard wiring cable, ÖLFLEX Heat 105-145, ÖLFLEX Heat 180 and ÖLFLEX Heat 205/260 single core cables.

B: Multi-core cables for portable appliances: ÖLFLEX CLASSIC 100, H05VV-F, 450P, 500P, H05RR-F, H05RN-F, H05BQ-F, H07BQ-F

C: Multi-core cables excluding for use in portable appliances: All ÖLFLEX, ÖLFLEX Crane, ÖLFLEX Heat, ÖLFLEX Heat 180, ÖLFLEX Heat 205/250 multi-core cables

D: Multi-core heavy duty rubber cables: 0.6/1kv ÖLFLEX Crane NSHTOU, ÖLFLEX Crane VS NSHTOU, NSSHOU, Single core special rubber cables 0.6/1kv or 1.8/3kv NSGAFOU, NSHXAFOU

CORRECTION FACTORS

Rated temperature of the conductor of the cable or wire (See product page of the catalogue "Technical Data" for temperature range, use upper value)					
	60°C	70°C	80°C	85°C	90°C
Ambient temperature in °C	**Correction factor, applicable to value of current carrying capacity**				
10	1.29	1.22	1.18	1.17	1.15
15	1.22	1.17	1.14	1.13	1.12
20	1.15	1.12	1.10	1.09	1.08
25	1.08	1.06	1.05	1.04	1.04
30	1.00	1.00	1.00	1.00	1.00
35	0.91	0.94	0.95	0.95	0.96
40	0.82	0.87	0.89	0.90	0.91
45	0.71	0.79	0.84	0.85	0.87
50	0.58	0.71	0.77	-	0.82
55	0.41	0.61	0.71	-	0.76
60	-	0.50	0.63	-	0.71
65	-	0.35	0.55	-	0.65
70	-	-	0.45	-	0.58
75	-	-	0.32	-	0.50
80	-	-	-	-	0.41
85	-	-	-	-	0.29

CORRECTION FACTORS FOR MULTI-CORE CABLES

For multi-core cables having conductor size up to 10mm²
(DIN VDE 0298-4, 2003-08 Table 26)

NUmber of current carrying conductors	Correction factor for cables in free air	Correction factor for cables in earth (burial)
5	0.75	0.70
7	0.65	0.60
10	0.55	0.50
14	0.50	0.45
19	0.45	0.40
24	0.40	0.35
40	0.35	0.30
61	0.30	0.25

CORRECTION FACTORS OF HEAT RESISTANT CABLES AND WIRES

Cables and wires classified according to its rated temperature of the conductor (See product page of the catalogue "Technical Data" for temperature range, use upper value)			
	Halogen free single core H07Z-K 90°C	ÖLFLEX HEAT 145	ÖLFLEX HEAT 180 Silicone Rubber
Ambient temperature in °C	**Correction factors, applying to current rating of Power Rating column A, C or D for heat resistant wires and cables. (Source: DIN VDE 0298-4,2003-08, Table 18)**		
Up to 50	1.00	1.00	1.00
55	0.94	1.00	1.00
60	0.87	1.00	1.00
65	0.79	1.00	1.00
70	0.71	1.00	1.00
75	0.61	1.00	1.00
80	0.50	1.00	1.00
85	0.35	0.91	1.00
90	-	0.82	1.00
95	-	0.71	1.00
100	-	0.58	1.00
105	-	0.41	1.00
110	-	-	1.00
115	-	-	1.00
120	-	-	1.00
130	-	-	1.00
135	-	-	1.00
140	-	-	1.00
150	-	-	1.00
155	-	-	0.91
160	-	-	0.82
165	-	-	0.71
170	-	-	0.58
175	-	-	0.41

LAPP GROUP

AWG TO METRIC CONVERSION CHART

In North America the cross section of cables are mostly stated in AWG sizes (American Wire Gauge). The following is a conversion to metric (mm^2). However please consider that there are no definite equivalents because the requirements of both systems regarding cross section and conductor resistance differ to each other. The table below should help to find the right nominal cross section.

Required North American dimension	Geo-metrical conversion	Metrical nominal cross section which fulfils the electrical requirements
AWG	mm^2	mm^2
4/0	107.22	120
3/0	85.01	95
2/0	67.43	70
1/0	53.49	70
1	42.41	50
2	33.62	35
4	21.15	25
6	13.30	16
8	8.37	10
10	5.26	6
12	3.31	4
14	2.08	2.5
16	1.31	1.5
18	0.82	1
20	0.52	0.75
22	0.33	0.34
24	0.20	0.25
26	0.13	0.14