




### 60 Quick select chart

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| 222 | UNITRONIC® FD 890                   |     |  |

## Quick select chart

Product	Shield	Jacket material	Temperature range		Nominal voltage	Flexing cycles	Page
			flexing	stationary			
ÖLFLEX® CHAIN 896 P	no	PUR	-40°C to +80°C	-50°C to +80°C	AWM: 1000V European: 600/1000V	10 million	61
ÖLFLEX® FD 855 P	no	PUR	-40°C to +80°C	-50°C to +80°C	AWM: 1000V European: 300/500V	10 million	62
ÖLFLEX® FD 855 CP	yes						
ÖLFLEX® CHAIN TM	no	spec. formulated thermoplastic polymer	-25°C to +90°C	-40°C to +105°C	UL TC: 600V UL AWM: 1000V European: 300/500V	5 million	64
ÖLFLEX® CHAIN TM CY	yes						
ÖLFLEX® FD 890	no	PVC	-5°C to +90°C	-25°C to +90°C	AWM: 600V	5 million	66
ÖLFLEX® FD 890 CY	yes						
ÖLFLEX® CHAIN 809	no	PVC	0°C to +80°C	-40°C to +80°C	AWM: 1000V European: 300/500V	2 million	68
ÖLFLEX® CHAIN 809 CY	yes						
ÖLFLEX® CLASSIC FD 810	no	PVC	0°C to +70°C	-40°C to +70°C	European: 300/500V	5 million	70
ÖLFLEX® CLASSIC FD 810 CY	yes						
ÖLFLEX® CHAIN 90 P	no	PUR	-35°C to +80°C	-45°C to +80°C	AWM: 1000V European: 600/1000V	10 million	72
ÖLFLEX® CHAIN 90 CP	yes						
ÖLFLEX® FD 90	no	PVC	-5°C to +90°C	-40°C to +90°C	AWM: 600V European: 600/1000V	5 million	74
ÖLFLEX® FD 90 CY	yes						
ÖLFLEX® CHAIN 809 SC	no	PVC	0°C to +90°C	-40°C to +90°C	AWM: 600V European: 600/1000V	2 million	76
ÖLFLEX® CHAIN 809 SC CY	yes						
ÖLFLEX® FD AUTO-X	no	TPE	-5°C to +90°C	-40°C to +105°C	UL TC/AWM: 600V UL WTTC: 1000V	5 million	78

# ÖLFLEX® CHAIN 896 P

High-acceleration continuous flex power & control cable with PUR jacket



ÖLFLEX® CHAIN 896 P is specially designed, manufactured, and tested by LAPP for usage in modern high-acceleration cable track applications as well as long travel lengths. For bending cycles and operation parameters, see [www.lappusa.com/cf-rating](http://www.lappusa.com/cf-rating)

## Recommended applications

Factory automation; industrial machinery; cable tracks used in assembly & pick and place machinery; machine tools; transfer lines

## Approvals



Cable attributes		page 648	
OIL	OR-05	FLAME	FR-02
MOTION	CF-04A	MECH.	MP-05

Complete the installation	
SKINTOP® strain relief page 492	EPIC® connectors page 284

ÖLFLEX® CONNECT solution	
ÖLFLEX® CONNECT CHAIN page 617	

## Technical data

<p> <b>Minimum bend radius:</b></p> <ul style="list-style-type: none"> <li>- for continuous flexing:                     <ul style="list-style-type: none"> <li>- up to 6 AWG: 7.5 x cable diameter</li> <li>- 4 AWG: 10 x cable diameter</li> </ul> </li> <li>- for stationary use: 4 x cable diameter</li> </ul> <p> <b>Temperature range:</b></p> <ul style="list-style-type: none"> <li>- for continuous flexing: -40°C to +80°C</li> <li>- for stationary use: -50°C to +80°C</li> </ul> <p> <b>Nominal voltage:</b></p> <ul style="list-style-type: none"> <li>- UL/CSA: 1000V</li> <li>- IEC U<sub>0</sub>/U: 600/1000V</li> </ul>	<p> <b>Test voltage:</b> 4000V</p> <p> <b>Conductor stranding:</b> Class 6 super fine wire</p> <p> <b>Color code:</b> black with white numbers, plus green/yellow ground</p> <p> <b>Approvals:</b></p> <ul style="list-style-type: none"> <li>UL: AWM 20234</li> <li>Attributes: NFPA 79</li> <li>Canada: cRU AWM FT1</li> <li>CSA AWM I/II A</li> <li>Additional: VDE Reg. no 8661</li> <li>CE &amp; RoHS</li> <li>MUD acc. to IEC 61892-4 Annex D</li> </ul>
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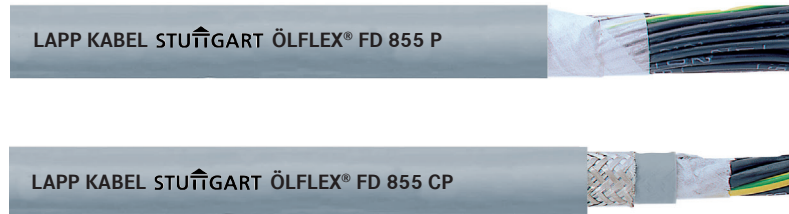
Part number	Number of conductors incl. ground	Nominal outer diameter in mm		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® SL PG thread
<b>16 AWG (1.5 mm²)</b>						
1023229	4	0.378	9.6	39	81	S2113
1023230	5	0.394	10.0	48	96	S2113
<b>14 AWG (2.5 mm²)</b>						
1023238	4	0.433	11.0	65	117	S2113
1023239	5	0.473	12.0	81	141	S2116
<b>12 AWG (4 mm²)</b>						
1023245	4	0.493	12.5	103	163	S2116
1023246	5	0.540	13.7	129	212	S2121
<b>10 AWG (6 mm²)</b>						
1023248	4	0.563	14.3	155	225	S2121
1023249	5	0.619	15.7	194	295	S2121

Part number	Number of conductors incl. ground	Nominal outer diameter in mm		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® SL PG thread
<b>8 AWG (10 mm²)</b>						
1023250	4	0.670	17.0	258	338	S2121
1023251	5	0.745	18.9	323	446	S2129
<b>6 AWG (16 mm²)</b>						
1023252	4	0.835	21.2	413	544	S2129
1023253	5	0.938	23.8	516	716	S2129
<b>4 AWG (25 mm²)</b>						
1023254	4	1.020	25.9	645	843	S2136
1023255	5	1.143	29.0	806	1063	S2136

Recommended SKINTOP® assumes minimal OD variance. Additional configurations are available; please see our SKINTOP® section. If not otherwise specified, all values relating to the product are nominal values. Photographs are not to scale and are not true representations of the products in question.

# ÖLFLEX® FD 855 P/855 CP

Halogen-free highly flexible cable with PUR jacket



ÖLFLEX® FD 855 P is designed for extreme mechanical stresses due to a tighter bend radius in continuous flex applications. Materials are halogen-free and environmentally friendly with an expanded temperature range. The polyurethane jacket is mechanically and chemically resistant to many environments. ÖLFLEX® FD 855 CP is a shielded version available with an overall tinned copper braid. This is recommended when electrical interference needs to be suppressed. For bending cycles and operation parameters, see [www.lappusa.com/cf-rating](http://www.lappusa.com/cf-rating)

## Recommended applications

Cable tracks; power chains; most automated manufacturing systems; gantry robots; pick and place units; conveyor systems; machine tools, continuous flexing applications

## Approvals



Cable attributes		page 648	
OIL	OR-05	FLAME	FR-02
MOTION	CF-04	MECH.	MP-05

Complete the installation	
SKINTOP® strain relief	page 492
EPIC® connectors	page 284

ÖLFLEX® CONNECT solution	
ÖLFLEX® CONNECT CHAIN	page 617

## Technical data

<b>Minimum bend radius:</b>		<b>Conductor stranding:</b>	Class 6 super fine wire
- for continuous flexing:	5 x cable diameter	<b>Color code:</b>	black with white numbers, plus green/yellow ground
- shielded:	7.5 x cable diameter	<b>Approvals:</b>	UL: AWM 21576
<b>Temperature range:</b>		Attributes:	NFPA 79
- for continuous flexing:	-40°C to +80°C	Canada:	cRU AWM I/II A/B
- for stationary use:	-50°C to +80°C	Additional:	CE & RoHS
<b>Nominal voltage:</b>			MUD acc. to IEC 61892-4 Annex D
- UL/c(UL):	1000V		halogen-free: VDE 0472-815
- IEC U <sub>0</sub> /U:	300/500V		
<b>Test voltage:</b>	3000V		

## Unshielded construction

**Conductors:** finely stranded bare copper

**Insulation:** TPE; dry lubricant; non-woven wrapping over outer layer

**Jacket:** polyurethane; gray

## Shielded construction

**Conductors:** finely stranded bare copper

**Insulation:** TPE; dry lubricant; non-woven wrapping over outer layer

**Inner jacket:** TPE

**Shielding:** tinned copper braid (85% coverage)

**Jacket:** polyurethane; gray

## Application advantage

- Our highest-performing continuous flexing cable
- Bend radius of 5 x cable diameter
- Designed for long travel distances up to 100 m horizontal
- Oil- and abrasion-resistant PUR jacket
- Cold temperature resistant to -40°C

If not otherwise specified, all values relating to the product are nominal values. Photographs are not to scale and are not true representations of the products in question.

ÖLFLEX® FD 855 P

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>20 AWG (0.5 mm<sup>2</sup>)</b>						
0027530	2	0.201	5.1	7	23	S1107
0027531	3	0.217	5.5	9	27	S1107
0027532	5	0.260	6.6	16	37	S1109
0027533	6	0.280	7.1	19	42	S1111
0027534	7	0.303	7.7	23	51	S1111
0027535	12	0.358	9.1	39	77	S1111
0027536	18	0.429	10.9	58	111	S1113
0027537	20	0.453	11.5	65	121	S1113
0027538	25	0.528	13.4	81	147	S1116
0027540	30	0.535	13.6	97	169	S1121
0027541	36	0.579	14.7	116	195	S1121
<b>19 AWG (0.75 mm<sup>2</sup>)</b>						
0027545	2	0.220	5.6	9	28	S1107
0027546	3	0.236	6.0	15	34	S1107
0027547	4	0.264	6.7	19	40	S1109
0027548	5	0.287	7.3	24	48	S1111
0027549	7	0.346	8.8	34	67	S1111
0027550	12	0.406	10.3	58	106	S1113
0027551	18	0.488	12.4	87	147	S1116
0027552	20	0.524	13.3	97	161	S1116
0027553	25	0.610	15.5	121	208	S1121
0027555	36	0.665	16.9	174	276	S1121

\* 2c cable does not include ground

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>18 AWG (1 mm<sup>2</sup>)</b>						
0027560	2	0.236	6.0	13	34	S1107
0027561	3	0.256	6.5	19	41	S1109
0027562	4	0.283	7.2	26	47	S1111
0027563	5	0.307	7.8	32	62	S1111
0027564	7	0.374	9.5	45	82	S1111
0027565	12	0.441	11.2	77	132	S1113
0027566	18	0.539	13.7	116	184	S1121
0027568	25	0.661	16.8	161	259	S1121
<b>16 AWG (1.5 mm<sup>2</sup>)</b>						
0027575	2	0.264	6.7	19	46	S1109
0027576	3	0.287	7.3	29	56	S1111
0027586	4	0.315	8.0	39	67	S1111
0027577	5	0.354	9.0	48	86	S1111
0027578	7	0.422	10.7	68	119	S1113
0027579	12	0.500	12.7	116	185	S1116
0027580	18	0.598	15.2	174	272	S1121
0027582	25	0.740	18.8	242	380	S1129
0027585	36	0.811	20.6	348	510	S1129
0027587	41	0.882	22.4	413	657	S1129
<b>14 AWG (2.5 mm<sup>2</sup>)</b>						
0027370	3	0.350	8.9	48	81	S1111
0027371	4	0.390	9.9	65	110	S1113
0027372	5	0.433	11.0	81	132	S1113
0027373	7	0.528	13.4	113	179	S1116
0027374	12	0.622	15.8	194	300	S1121
0027375	18	0.744	18.9	290	447	S1129
0027376	25	0.925	23.5	403	624	S1129

ÖLFLEX® FD 855 CP

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
<b>20 AWG (0.5 mm<sup>2</sup>)</b>						
0027605	2	0.264	6.7	22	45	53112210
0027606	3	0.280	7.1	27	53	53112210
0027607	5	0.323	8.2	36	72	53112220
0027608	6	0.343	8.7	40	81	53112220
0027609	7	0.374	9.5	45	89	53112230
0027610	12	0.429	10.9	65	128	53112230
0027611	18	0.508	12.9	88	165	53112240
0027612	20	0.531	13.5	105	189	53112240
0027613	25	0.614	15.6	128	247	53112250
0027615	30	0.622	15.8	149	274	53112250
0027616	36	0.665	16.9	169	308	53112250
<b>19 AWG (0.75 mm<sup>2</sup>)</b>						
0027620	2	0.283	7.2	27	53	53112220
0027621	3	0.299	7.6	32	65	53112220
0027622	4	0.327	8.3	39	75	53112220
0027623	5	0.350	8.9	44	85	53112220
0027624	7	0.417	10.6	57	111	53112230
0027625	12	0.476	12.1	85	155	53112240
0027626	18	0.575	14.6	133	222	53112250
0027628	25	0.697	17.7	174	308	53112260
0027630	36	0.768	19.5	234	407	53112260

\* 2c cable does not include ground

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
<b>18 AWG (1 mm<sup>2</sup>)</b>						
0027635	2	0.299	7.6	30	62	53112220
0027636	3	0.319	8.1	37	73	53112220
0027637	4	0.346	8.8	46	85	53112220
0027638	5	0.378	9.6	54	99	53112230
0027639	7	0.445	11.3	71	132	53112240
0027640	12	0.520	13.2	118	196	53112240
0027641	18	0.626	15.9	163	281	53112250
0027643	25	0.768	19.5	221	386	53112260
<b>16 AWG (1.5 mm<sup>2</sup>)</b>						
0027649	2	0.327	8.3	39	77	53112220
0027650	3	0.350	8.9	51	93	53112220
0027661	4	0.386	9.8	61	105	53112230
0027651	5	0.425	10.8	75	133	53112230
0027652	7	0.492	12.5	97	171	53112240
0027653	12	0.587	14.9	163	280	53112250
0027654	18	0.685	17.4	233	379	53112260
0027656	25	0.843	21.4	327	545	53112260
<b>14 AWG (2.5 mm<sup>2</sup>)</b>						
0027380	3	0.421	10.7	74	130	53112230
0027381	4	0.461	11.7	91	157	53112240
0027382	5	0.504	12.8	121	197	53112240
0027383	7	0.614	15.6	165	281	53112250
0027384	12	0.709	18.0	253	423	53112260
0027385	18	0.846	21.5	382	613	53112260
0027386	25	1.043	26.5	514	851	53112270

Recommended SKINTOP® assumes minimal OD variance. Additional configurations are available; please see our SKINTOP® section. If not otherwise specified, all values relating to the product are nominal values.

# ÖLFLEX® CHAIN TM/TM CY

Continuous flex control cable with TC-ER rating



ÖLFLEX® CHAIN TM/TM CY are highly flexible multi conductor tray cables designed for continuous flex applications. ÖLFLEX® CHAIN TM CY has an overall tinned copper braid that provides protection against EMI and RFI. Fine stranding and a specially formulated thermoplastic polymer jacket optimize flex life and provide excellent resistance to mineral oils, synthetic oils, and water-based coolants. For bending cycles and operation parameters, see [www.lappusa.com/cf-rating](http://www.lappusa.com/cf-rating)

### Recommended applications

Cable tracks & power chains; gantry robots; pick and place units; conveyor systems; machine tools; other continuous flexing applications

### Approvals



Cable attributes		page 648	
OIL	OR-03	FLAME	FR-03
MOTION	CF-02*	MECH.	MP-03

Complete the installation

SKINTOP® strain relief page 492	EPIC® connectors page 284
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ÖLFLEX® CONNECT solution

ÖLFLEX® CONNECT CHAIN page 617
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### Unshielded construction

- Conductors:** finely stranded bare copper
- Insulation:** specially formulated PVC/nylon; non-woven wrapping over outer layer
- Jacket:** specially formulated thermoplastic polymer; black

### Shielded construction

- Conductors:** finely stranded bare copper
- Insulation:** specially formulated PVC/nylon; non-woven wrapping over outer layer
- Shielding:** tinned copper braid (85% coverage)
- Jacket:** specially formulated thermoplastic polymer; black

### Application advantage

- UL TC-ER reduces material costs, as no conduit is needed
- Multi-standard approval reduces part numbers and cost
- Meets UL Oil Res I/II, resistant to harsh environments for a long service life
- Copper shielding complies with EMC requirements
- Resistant to a wide range of disinfecting solutions used in the food, beverage, chemical and related industries, according to ECOLAB® PM 40-1 test procedure

### Technical data

<b>Minimum bend radius:</b> - for continuous flexing: 7.5 x cable diameter - shielded: 10 x cable diameter	<b>Color code:</b> black with white numbers, plus green/yellow ground
<b>Temperature range:</b> - UL/CSA TC: -25°C to +90°C - for continuous flexing: -25°C to +90°C - for stationary use: -40°C to +105°C	<b>Approvals:</b> UL: TC-ER per UL 1277 MTW per UL 1063 WTTTC per UL 2277 submersible pump PLTC-ER per UL 13 ITC-ER per UL 2250 DP-1 per UL 1690 AWM 20886 Attributes: UL Oil Res I/II 75°C Wet; 90°C Dry sunlight resistant direct burial NFPA 79 NEC: Class 1 Division 2 per NEC Article 501 Canada: c(UL) CIC/TC FT4 CSA AWM I/II A/B FT4 Additional: CE & RoHS *UL Verified ID A522492: Continuous Flex Test Method Verified
<b>Nominal voltage:</b> - UL/CSA TC: 600V - UL AWM: 1000V - IEC U <sub>0</sub> /U: 300/500V	
<b>Test voltage:</b> 2000V	
<b>Conductor stranding:</b> Class 6 super fine wire	

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If not otherwise specified, all values relating to the product are nominal values.  
Photographs are not to scale and are not true representations of the products in question.

ÖLFLEX® CHAIN TM

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>18 AWG (1 mm²)</b>						
8718030	3	0.308	7.8	20	44	S1111
8718040	4	0.337	8.6	26	55	S1111
8718050	5	0.365	9.3	33	64	S1111
8718070	7	0.423	10.7	46	84	S1113
8718120	12	0.486	12.3	79	141	S1116
8718180	18	0.606	15.4	118	207	S1121
8718250	25	0.699	17.8	164	278	S1129
<b>16 AWG (1.5 mm²)</b>						
8716030	3	0.340	8.6	29	62	S1111
8716040	4	0.373	9.5	39	75	S1111
8716050	5	0.405	10.3	49	90	S1113
8716070	7	0.473	12.0	68	121	S1116
8716120	12	0.580	14.7	112	209	S1121
8716180	18	0.679	17.2	175	298	S1121
8716250	25	0.786	20.0	242	417	S1129

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>14 AWG (2.5 mm²)</b>						
8714040	4	0.419	10.6	65	121	S1113
8714070	7	0.570	14.5	113	192	S1121
<b>12 AWG (4 mm²)</b>						
8712040	4	0.487	12.4	104	198	S1116
<b>10 AWG (6 mm²)</b>						
8710040	4	0.600	15.2	155	267	S1121

ÖLFLEX® CHAIN TM CY

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
<b>18 AWG (1 mm²)</b>						
8718030S	3	0.330	8.4	40	82	53112220
8718040S	4	0.359	9.1	48	106	53112220
8718050S	5	0.392	10	57	123	53112230
8718070S	7	0.450	11.4	94	139	53112240
8718120S	12	0.547	13.9	153	229	53112250
8718180S	18	0.633	16.1	216	317	53112250
8718250S	25	0.734	18.6	226	436	53112260
<b>16 AWG (1.5 mm²)</b>						
8716030S	3	0.362	9.2	52	115	53112220
8716040S	4	0.400	10.2	66	128	53112230
8716050S	5	0.432	11	76	150	53112230
8716070S	7	0.500	12.7	98	181	53112240
8716120S	12	0.607	15.4	167	311	53112250
8716180S	18	0.714	18.1	235	456	53112260
8716250S	25	0.870	22.1	313	639	53112260

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
<b>14 AWG (2.5 mm²)</b>						
8714040S	4	0.447	11.4	93	181	53112240
8714070S	7	0.597	15.2	147	282	53112250
<b>12 AWG (4 mm²)</b>						
8712040S	4	0.515	13.1	154	311	53112240
<b>10 AWG (6 mm²)</b>						
8710040S	4	0.635	16.1	208	386	53112250

Recommended SKINTOP® assumes minimal OD variance. Additional configurations are available; please see our SKINTOP® section. If not otherwise specified, all values relating to the product are nominal values.

# ÖLFLEX® FD 890/890 CY

Super flexible heavy duty continuous flex control cable with PVC jacket



ÖLFLEX® FD 890 is a time-tested, performance-proven multi-conductor cable designed for continuous flex applications. Fine stranding and specially formulated compounds optimize flexing life and provide excellent resistance to mineral oils, synthetic oils, and water-based coolants. ÖLFLEX® FD 890 CY is a shielded version available with an overall tinned copper braid. This is recommended when electrical interference needs to be suppressed. For bending cycles and operation parameters, see [www.lappusa.com/cf-rating](http://www.lappusa.com/cf-rating).

## Recommended applications

Cable tracks & power chains; gantry robots; pick and place units; conveyor systems; machine tool and other continuous flexing applications

## Approvals



Cable attributes		page 648	
OIL	OR-04	FLAME	FR-02
MOTION	CF-03*	MECH.	MP-02

Complete the installation	
SKINTOP® strain relief	page 492
EPIC® connectors	page 284

ÖLFLEX® CONNECT solution	
ÖLFLEX® CONNECT CHAIN	page 617

## Unshielded construction

**Conductors:** finely stranded bare copper

**Insulation:** specially formulated PVC; dry lubricant; non-woven wrapping over outer layer

**Jacket:** specially formulated PVC; black

## Shielded construction

**Conductors:** finely stranded bare copper

**Insulation:** specially formulated PVC; dry lubricant; non-woven wrapping over outer layer

**Inner jacket:** PVC

**Shielding:** tinned copper braid (85% coverage)

**Jacket:** specially formulated PVC; black

## Application advantage

- Meets Oil Res I/II, resistant to harsh environments for long service life
- Pressure-extruded jacket for precision connectorization
- Passes UL 1277 impact and crush tests

## Technical data

<b>Minimum bend radius:</b>		<b>Color code:</b>	black with white numbers, plus green/yellow ground
- for continuous flexing:	7.5 x cable diameter		
- shielded:	10 x cable diameter		
<b>Temperature range:</b>		<b>Approvals:</b>	UL: AWM 2587 AWM 21098 (Oil)
- for continuous flexing:	-5°C to +90°C	Attributes:	UL Oil Res I/II sunlight resistant NFPA 79 UL 758 80°C Oil Test
- for stationary use:	-25°C to +90°C	Canada:	CSA AWM I/II A/B FT1 CSA C22.2, 210.2
<b>Nominal voltage:</b>	600V	Additional:	CE & RoHS
<b>Test voltage:</b>	2000V	*UL Verified ID A522492:	Continuous Flex Test Method Verified
<b>Conductor stranding:</b>	better than Class 6 super fine wire		

If not otherwise specified, all values relating to the product are nominal values. Photographs are not to scale and are not true representations of the products in question.

ÖLFLEX® FD 890

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>20 AWG (0.5 mm²)</b>						
8920034	3	0.264	6.7	10	43	S2109
8920044	4	0.291	7.4	16	53	S2111
8920054	5	0.323	8.2	19	68	S2111
8920074	7	0.382	9.7	27	75	S2113
8920124	12	0.457	11.6	39	124	S2113
8920184	18	0.539	13.7	69	183	S2121
8920254	25	0.677	17.2	96	265	S2121
<b>18 AWG (1 mm²)</b>						
8918034	3	0.287	7.3	18	46	S2111
8918044	4	0.327	8.3	24	60	S2111
8918054	5	0.355	9.0	29	74	S2111
8918074	7	0.429	10.9	41	102	S2113
8918124	12	0.500	12.7	70	158	S2116
8918154	15	0.559	14.2	88	202	S2121
8918184	18	0.614	15.6	105	234	S2121
8918254	25	0.763	19.4	146	336	S2129
8918344	34	0.826	21.0	211	434	S2129
<b>16 AWG (1.5 mm²)</b>						
8916034	3	0.323	8.2	30	79	S2111
8916044	4	0.358	9.1	39	106	S2111
8916054	5	0.393	10.0	49	132	S2113

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
8916074	7	0.480	12.2	68	138	S2116
8916124	12	0.555	14.1	117	214	S2121
8916184	18	0.685	17.4	175	323	S2129
8916254	25	0.854	21.7	242	505	S2129
8916344	34	0.925	23.5	329	623	S2129
8916504	50	1.094	27.8	437	880	S2136
<b>14 AWG (2.5 mm²)</b>						
8914044	4	0.456	11.6	67	148	S2113
8914074	7	0.614	15.6	117	227	S2121
<b>12 AWG (4 mm²)</b>						
8912044	4	0.531	13.5	104	208	S2121
8912074	7	0.740	18.8	181	335	S2129
<b>10 AWG (6 mm²)</b>						
8910044	4	0.640	16.3	155	275	S2121
<b>8 AWG (10 mm²)</b>						
8908044	4	0.756	19.2	259	481	S2129
<b>6 AWG (16 mm²)</b>						
8906044	4	0.909	23.1	413	709	S2129
<b>4 AWG (25 mm²)</b>						
8904044	4	1.059	26.9	646	1005	S2136
<b>2 AWG (35 mm²)</b>						
8902044	4	1.252	31.8	904	1240	S2248

ÖLFLEX® FD 890 CY

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
<b>20 AWG (0.5 mm²)</b>						
8920034S	3	0.342	8.7	27	82	53112220
8920044S	4	0.370	9.4	38	97	53112230
8920054S	5	0.409	10.4	44	108	53112230
8920074S	7	0.468	11.9	52	137	53112240
8920124S	12	0.551	14.0	68	214	53112250
8920184S	18	0.657	16.7	112	293	53112250
8920254S	25	0.803	20.4	158	421	53112260
<b>18 AWG (1 mm²)</b>						
8918034S	3	0.375	9.5	40	91	53112230
8918044S	4	0.419	10.6	48	112	53112230
8918054S	5	0.447	11.4	57	131	53112240
8918074S	7	0.528	13.4	76	198	53112240
8918124S	12	0.636	16.2	125	271	53112250
8918184S	18	0.719	18.3	162	357	53112260
8918254S	25	0.887	22.5	218	538	53112260
8918344S	34	0.986	25.0	211	660	53112270
<b>16 AWG (1.5 mm²)</b>						
8916034S	3	0.409	10.4	54	121	53112230
8916044S	4	0.444	11.3	68	154	53112240

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
8916054S	5	0.480	12.2	81	170	53112240
8916074S	7	0.598	15.2	125	258	53112250
8916124S	12	0.673	17.1	174	366	53112260
8916184S	18	0.826	21.0	239	493	53112260
8916254S	25	0.996	25.3	320	687	53112270
8916344S	34	1.067	27.1	446	769	53112270
<b>14 AWG (2.5 mm²)</b>						
8914044S	4	0.551	14.0	103	181	53112250
8914074S	7	0.709	18.0	175	347	53112260
8914184S	18	1.012	25.7	385	762	53112270
<b>12 AWG (4 mm²)</b>						
8912044S	4	0.650	16.5	160	302	53112250
8912074S	7	0.858	21.8	251	517	53112260
<b>10 AWG (6 mm²)</b>						
8910044S	4	0.752	19.1	215	333	53112260
<b>8 AWG (10 mm²)</b>						
8908044S	4	0.882	22.4	330	701	53112260
<b>6 AWG (16 mm²)</b>						
8906044S	4	1.066	27.1	498	986	53112270

Recommended SKINTOP® assumes minimal OD variance. Additional configurations are available; please see our SKINTOP® section. If not otherwise specified, all values relating to the product are nominal values.

# ÖLFLEX® CHAIN 809/809 CY

Continuous flex control cable with PVC jacket



ÖLFLEX® CHAIN 809 is a flexible multi-conductor cable designed for basic continuous flexing applications. ÖLFLEX® CHAIN 809 CY is a shielded version available with an overall tinned copper braid. This is recommended when electrical interference needs to be suppressed. For bending cycles and operation parameters, see [www.lappusa.com/cf-rating](http://www.lappusa.com/cf-rating).

## Recommended applications

Cable tracks; power chains; gantry robots; pick and place units; conveyor systems; machine tools; basic continuous flexing applications

## Approvals



Cable attributes		page 648	
OIL	OR-01	FLAME	FR-02
MOTION	CF-01*	MECH.	MP-01

Complete the installation	
SKINTOP® strain relief	page 492
EPIC® connectors	page 284

ÖLFLEX® CONNECT solution	
ÖLFLEX® CONNECT CHAIN	page 617

## Unshielded construction

**Conductors:** finely stranded bare copper  
**Insulation:** PVC; dry lubricant; non-woven wrapping over outer layer  
**Jacket:** PVC; gray

## Shielded construction

**Conductors:** finely stranded bare copper  
**Insulation:** PVC; dry lubricant; non-woven wrapping over outer layer  
**Shielding:** tinned copper braid (85% coverage)  
**Jacket:** PVC; gray

## Application advantage

- Designed with North American and European approvals
- Reduced-diameter shielded design
- Flame retardant: UL/CSA VW-1, FT 1

## Technical data

<p> <b>Minimum bend radius:</b>                      - for continuous flexing: 10 x cable diameter                      - sliding applications: 12 x cable diameter</p> <p> <b>Temperature range:</b>                      - for continuous flexing: 0°C to +80°C                      - for stationary use: -40°C to +80°C</p> <p> <b>Nominal voltage:</b>                      - UL/CSA: 1000V                      - VDE U<sub>0</sub>/U: 300/500V</p>	<p> <b>Test voltage:</b>                      - conductor/conductor: 4000V                      - conductor/shield: 2000V</p> <p> <b>Conductor stranding:</b> Class 5 fine wire</p> <p> <b>Color code:</b> black with white numbers, plus green/yellow ground</p> <p> <b>Approvals:</b>                      UL: AWM 20886                      Attributes: NFPA 79                      Canada: cRU AWM I/II A/B FT 1                      Additional: CE &amp; RoHS based on VDE 0281 Part 13</p>
<p>*UL Verified ID A522492: Continuous Flex Test Method Verified</p>	

If not otherwise specified, all values relating to the product are nominal values. Photographs are not to scale and are not true representations of the products in question.

ÖLFLEX® CHAIN 809

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>20 AWG (0.5 mm<sup>2</sup>)</b>						
1026700	2	0.205	5.2	7	27	S1107
1026701	3	0.217	5.5	10	32	S1107
1026702	4	0.236	6.0	13	39	S1107
1026703	5	0.256	6.5	16	45	S1109
1026704	7	0.303	7.7	23	59	S1111
1026705	12	0.362	9.2	39	91	S1111
1026706	18	0.433	11.0	58	131	S1113
1026707	25	0.524	13.3	81	184	S1116
<b>19 AWG (0.75 mm<sup>2</sup>)</b>						
1026708	2	0.220	5.6	10	33	S1107
1026709	3	0.236	6.0	15	40	S1107
1026710	4	0.256	6.5	19	49	S1109
1026711	5	0.280	7.1	25	58	S1111
1026712	7	0.335	8.5	34	79	S1111
1026713	12	0.406	10.3	58	122	S1113
1026714	18	0.480	12.2	87	174	S1116
1026715	25	0.583	14.8	122	244	S1121
<b>18 AWG (1 mm<sup>2</sup>)</b>						
1026716	2	0.232	5.9	13	39	S1107
1026717	3	0.248	6.3	19	48	S1109

\* 2c cable does not include ground

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
1026718	4	0.272	6.9	26	59	S1109
1026719	5	0.295	7.5	32	70	S1111
1026720	7	0.354	9.0	45	95	S1111
1026721	12	0.429	10.9	77	149	S1113
1026722	18	0.520	13.2	116	218	S1116
1026723	25	0.618	15.7	161	299	S1121
<b>16 AWG (1.5 mm<sup>2</sup>)</b>						
1026724	2	0.256	6.5	19	50	S1109
1026725	3	0.272	6.9	29	62	S1109
1026726	4	0.299	7.6	39	77	S1111
1026727	5	0.335	8.5	48	93	S1111
1026728	7	0.406	10.3	68	127	S1113
1026729	12	0.484	12.3	116	198	S1116
1026730	18	0.584	14.9	174	288	S1121
1026731	25	0.705	17.9	242	401	S1129
<b>14 AWG (2.5 mm<sup>2</sup>)</b>						
1026732	3	0.331	8.4	48	97	S1111
1026733	4	0.366	9.3	65	120	S1111
1026734	7	0.500	12.7	81	146	S1116
<b>12 AWG (4 mm<sup>2</sup>)</b>						
1026737	4	0.437	11.1	108	179	S1113

ÖLFLEX® CHAIN 809 CY

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
<b>20 AWG (0.5 mm<sup>2</sup>)</b>						
1026751	2	0.228	5.8	24	30	53112210
1026752	3	0.240	6.1	29	40	53112210
1026753	4	0.260	6.6	33	56	53112210
1026754	5	0.280	7.1	38	65	53112210
1026755	7	0.335	8.5	46	91	53112220
1026756	12	0.394	10.0	70	134	53112230
1026757	18	0.465	11.8	95	185	53112240
1026758	25	0.555	14.1	142	235	53112250
<b>19 AWG (0.75 mm<sup>2</sup>)</b>						
1026759	2	0.244	6.2	29	38	53112210
1026760	3	0.260	6.6	35	47	53112210
1026761	4	0.280	7.1	41	64	53112210
1026762	5	0.303	7.7	48	87	53112220
1026763	7	0.358	9.1	60	113	53112220
1026764	12	0.429	10.9	93	156	53112230
1026765	18	0.512	13.0	142	212	53112240
1026766	25	0.614	15.6	188	292	53112250
<b>18 AWG (1 mm<sup>2</sup>)</b>						
1026767	2	0.256	6.5	34	56	53112210
1026768	3	0.272	6.9	42	74	53112210

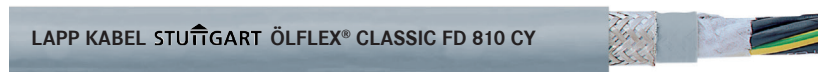
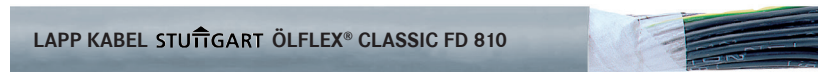
\* 2c cable does not include ground

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
1026769	4	0.295	7.5	50	87	53112220
1026770	5	0.327	8.3	59	105	53112220
1026771	7	0.386	9.8	75	129	53112230
1026772	12	0.461	11.7	124	192	53112240
1026773	18	0.551	14.0	180	265	53112250
1026774	25	0.657	16.7	238	327	53112250
<b>16 AWG (1.5 mm<sup>2</sup>)</b>						
1026775	2	0.280	7.1	44	65	53112210
1026776	3	0.295	7.5	55	84	53112220
1026777	4	0.331	8.4	67	111	53112220
1026778	5	0.358	9.1	80	130	53112220
1026779	7	0.429	10.9	103	165	53112230
1026780	12	0.524	13.3	180	245	53112240
1026781	18	0.618	15.7	251	372	53112250
1026782	25	0.736	18.7	356	493	53112260
<b>14 AWG (2.5 mm<sup>2</sup>)</b>						
1026783	3	0.354	9.0	79	126	53112220
1026784	4	0.398	10.1	99	159	53112230
1026785	7	0.531	13.5	170	228	53112240
<b>12 AWG (4 mm<sup>2</sup>)</b>						
1026788	4	0.469	11.9	167	205	53112240

Recommended SKINTOP® assumes minimal OD variance. Additional configurations are available; please see our SKINTOP® section. If not otherwise specified, all values relating to the product are nominal values.

# ÖLFLEX® CLASSIC FD 810/810 CY

Continuous flex control cable with PVC jacket



ÖLFLEX® CLASSIC FD 810 is a flexible multi-conductor cable designed for continuous flex applications. It is specially designed to optimize flex life and provides excellent resistance to minerals oils, synthetic oils, and water-based coolants. ÖLFLEX® CLASSIC FD 810 CY is a shielded version available with an overall tinned copper braid. This is recommended when electrical interference needs to be suppressed. For bending cycles and operation parameters, see [www.lappusa.com/cf-rating](http://www.lappusa.com/cf-rating).

## Recommended applications

Cable tracks; power chains; gantry robots; pick and place units; conveyor systems; machine tools; continuous flexing applications

## Approvals



Cable attributes		page 648	
OIL	OR-01	FLAME	FR-02
MOTION	CF-02*	MECH.	MP-01

Complete the installation	
SKINTOP® strain relief	page 492
EPIC® connectors	page 284

ÖLFLEX® CONNECT solution	
ÖLFLEX® CONNECT CHAIN	page 617

## Unshielded construction

**Conductors:** finely stranded bare copper

**Insulation:** PVC; dry lubricant; non-woven wrapping over outer layer

**Jacket:** PVC; gray

## Shielded construction

**Conductors:** finely stranded bare copper

**Insulation:** PVC; dry lubricant; non-woven wrapping over outer layer

**Inner jacket:** PVC

**Shielding:** tinned copper braid (85% coverage)

**Jacket:** PVC; gray

## Application advantage

- European version with CE approvals
- Number-coded conductors for easier installation

## Technical data

<b>Minimum bend radius:</b> - for continuous flexing:	7.5 x cable diameter	<b>Conductor stranding:</b>	Class 6 super fine wire
<b>Temperature range:</b> - for continuous flexing: - for stationary use:	0°C to +70°C -40°C to +70°C	<b>Color code:</b>	black with white numbers, plus green/yellow ground
<b>Nominal voltage:</b>	300/500V	<b>Approvals:</b>	CE & RoHS based on VDE 0245/0281
<b>Test voltage:</b>	4000V	*UL Verified ID A522492:	Continuous Flex Test Method Verified

If not otherwise specified, all values relating to the product are nominal values. Photographs are not to scale and are not true representations of the products in question.

ÖLFLEX® CLASSIC FD 810

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>20 AWG (0.5 mm<sup>2</sup>)</b>						
0026100	2	0.209	5.3	7	27	S1107
0026101	3	0.224	5.7	10	32	S1107
0026102	4	0.248	6.3	13	39	S1109
0026103	5	0.268	6.8	16	45	S1109
0026104	7	0.315	8.0	23	59	S1111
0026105	12	0.374	9.5	39	91	S1111
0026106	18	0.449	11.4	58	131	S1113
0026107	25	0.539	13.7	81	184	S1121
0026109	34	0.614	15.6	110	241	S1121
0026110	50	0.728	18.5	161	346	S1129
<b>19 AWG (0.75 mm<sup>2</sup>)</b>						
0026119	2	0.224	5.7	10	33	S1107
0026120	3	0.244	6.2	15	40	S1107
0026121	4	0.268	6.8	19	49	S1109
0026122	5	0.291	7.4	25	58	S1111
0026123	7	0.350	8.9	34	79	S1111
0026124	12	0.417	10.6	58	122	S1113
0026125	16	0.472	12.0	78	157	S1116
0026126	18	0.500	12.7	87	174	S1116
0026127	25	0.598	15.2	122	244	S1121
<b>18 AWG (1 mm<sup>2</sup>)</b>						
0026130	2	0.240	6.1	13	39	S1107
0026131	3	0.260	6.6	19	48	S1109
0026132	4	0.287	7.3	26	59	S1111
0026133	5	0.315	8.0	32	70	S1111
0026134	7	0.378	9.6	45	95	S1113
0026135	12	0.449	11.4	77	149	S1113
0026138	18	0.547	13.9	116	218	S1121

\* 2c cable does not include ground

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
0026139	25	0.646	16.4	161	299	S1121
0026142	41	0.811	20.6	265	478	S1129
0026143	50	0.878	22.3	323	574	S1129
<b>16 AWG (1.5 mm<sup>2</sup>)</b>						
0026149	2	0.268	6.8	19	50	S1109
0026150	3	0.291	7.4	29	62	S1111
0026151	4	0.319	8.1	39	77	S1111
0026152	5	0.358	9.1	48	93	S1111
0026153	7	0.429	10.9	68	127	S1113
0026154	12	0.508	12.9	116	198	S1116
0026156	18	0.614	15.6	174	288	S1121
0026157	25	0.733	18.6	242	401	S1129
0026159	34	0.831	21.1	329	526	S1129
<b>14 AWG (2.5 mm<sup>2</sup>)</b>						
0026170	3	0.354	9.0	48	97	S1111
0026171	4	0.394	10.0	65	120	S1113
0026172	5	0.441	11.2	81	146	S1113
0026173	7	0.535	13.6	113	204	S1121
0026175	14	0.677	17.2	226	368	S1121
<b>12 AWG (4 mm<sup>2</sup>)</b>						
0026180	3	0.417	10.6	81	144	S1113
0026181	4	0.461	11.7	108	179	S1116
<b>10 AWG (6 mm<sup>2</sup>)</b>						
0026183	4	0.547	13.9	150	266	S1121
<b>8 AWG (10 mm<sup>2</sup>)</b>						
0026185	4	0.693	17.6	258	433	S1129
0026186	5	0.772	19.6	323	528	S1129
<b>6 AWG (16 mm<sup>2</sup>)</b>						
0026187	4	0.827	21.0	413	620	S1129

ÖLFLEX® CLASSIC FD 810 CY

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
<b>20 AWG (0.5 mm<sup>2</sup>)</b>						
0026200	2	0.272	6.9	22	50	53112210
0026201	3	0.287	7.3	26	56	53112220
0026202	4	0.311	7.9	31	66	53112220
0026203	5	0.331	8.4	36	74	53112220
0026204	7	0.386	9.8	47	96	53112230
0026205	12	0.445	11.3	67	135	53112240
0026206	18	0.528	13.4	103	193	53112240
0026207	25	0.626	15.9	136	265	53112250
<b>19 AWG (0.75 mm<sup>2</sup>)</b>						
0026219	2	0.287	7.3	26	57	53112220
0026220	3	0.307	7.8	32	67	53112220
0026221	4	0.331	8.4	40	78	53112220
0026222	5	0.354	9.0	46	89	53112220
0026223	7	0.421	10.7	60	120	53112230
0026224	12	0.488	12.4	87	170	53112240
0026226	18	0.587	14.9	138	247	53112250
0026227	25	0.685	17.4	182	333	53112260
<b>18 AWG (1 mm<sup>2</sup>)</b>						
0026230	2	0.303	7.7	31	65	53112220
0026231	3	0.323	8.2	38	77	53112220
0026232	4	0.350	8.9	47	90	53112220
0026233	5	0.386	9.8	54	107	53112230
0026234	7	0.449	11.4	74	139	53112240
0026235	12	0.528	13.4	122	211	53112240
0026238	18	0.634	16.1	171	298	53112250
0026239	25	0.740	18.8	245	411	53112260

\* 2c cable does not include ground

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
0026241	34	0.846	21.5	311	529	53112260
0026242	41	0.913	23.2	364	617	53112260
<b>16 AWG (1.5 mm<sup>2</sup>)</b>						
0026249	2	0.331	8.4	39	79	53112220
0026250	3	0.354	9.0	50	93	53112220
0026251	4	0.390	9.9	61	114	53112230
0026252	5	0.429	10.9	75	135	53112230
0026253	7	0.500	12.7	97	176	53112240
0026254	12	0.594	15.1	166	271	53112250
0026256	18	0.701	17.8	234	376	53112260
0026257	25	0.835	21.2	335	533	53112260
0026259	34	0.941	23.9	470	675	53112260
<b>14 AWG (2.5 mm<sup>2</sup>)</b>						
0026270	2	0.425	10.8	80	139	53112230
0026271	4	0.465	11.8	108	166	53112240
0026272	5	0.520	13.2	130	206	53112240
0026273	7	0.622	15.8	176	281	53112250
<b>12 AWG (4 mm<sup>2</sup>)</b>						
0026281	4	0.539	13.7	160	242	53112250
0026282	5	0.602	15.3	188	293	53112250
<b>10 AWG (6 mm<sup>2</sup>)</b>						
0026283	4	0.634	16.1	214	345	53112250
<b>8 AWG (10 mm<sup>2</sup>)</b>						
0026285	4	0.795	20.2	350	554	53112260
<b>6 AWG (16 mm<sup>2</sup>)</b>						
0026287	4	0.929	23.6	524	811	53112260

Recommended SKINTOP® assumes minimal OD variance. Additional configurations are available; please see our SKINTOP® section. If not otherwise specified, all values relating to the product are nominal values.

# ÖLFLEX® CHAIN 90 P/90 CP

Highly flexible single-conductor cable with PUR jacket



### Unshielded construction

**Conductors:** finely stranded bare copper

**Insulation:** special black or green/yellow compound based on TPE

**Jacket:** polyurethane; black

### Shielded construction

**Conductors:** finely stranded bare copper

**Insulation:** special black or green/yellow compound based on TPE

**Shielding:** tinned copper braid

**Jacket:** polyurethane; black

ÖLFLEX® CHAIN 90 P is a highly flexible PUR 1000V single-conductor cable for continuous flex applications. The polyurethane jacket is mechanically and chemically resistant to many environments. ÖLFLEX® CHAIN 90 CP with tinned copper braid shielding is used for applications where EMI emissions need to be suppressed. For bending cycles and operation parameters, see [www.lappusa.com/cf-rating](http://www.lappusa.com/cf-rating).

### Recommended applications

Power chains or moving machine parts; for wiring of electric and electronic equipment in switch cabinets; test systems in the automotive industry; vehicles and stationary fuel cell systems

### Approvals



### Application advantage

- Suitable for heavy duty power chain applications
- Can substitute multi-conductor power cables where space requirements can cause problems
- Suitable for dry or damp interior use
- Available in larger conductor sizes for power applications
- CSA FT1 flame retardant

Cable attributes		page 648	
OIL	OR-05	FLAME	FR-02
MOTION	CF-04	MECH.	MP-05

Complete the installation	
SKINTOP® strain relief	page 492
EPIC® connectors	page 284

ÖLFLEX® CONNECT solution	
ÖLFLEX® CONNECT CHAIN	page 617

### Technical data

<b>Minimum bend radius:</b>		<b>Test voltage:</b>	4000V
- for installation:	3 x cable diameter	<b>Conductor stranding:</b>	Class 6 super fine wire
- for continuous flexing:	7.5 x cable diameter	<b>Approvals:</b>	UL: AWM 11624, VW-1
<b>Temperature range:</b>		Attributes:	NFPA 79
- for continuous flexing:	-35°C to +80°C	Canada:	cRU AWM I/II A FT1
- for flexible use:	-50°C to +80°C	Additional:	CE & RoHS
<b>Nominal voltage:</b>			
- UL/CSA:	1000V		
- IEC U <sub>0</sub> /U:	600/1000V		

If not otherwise specified, all values relating to the product are nominal values. Photographs are not to scale and are not true representations of the products in question.

## ÖLFLEX® CHAIN 90 P

black conductor

Part number	Number of conductors incl. ground	Nominal outer diameter in mm		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® SL PG thread
<b>16 AWG (1.5 mm²)</b>						
1026514	1	0.248	6.3	10	32	S2109
<b>14 AWG (2.5 mm²)</b>						
1026516	1	0.272	6.9	16	42	S2109
<b>12 AWG (4 mm²)</b>						
1026518	1	0.283	7.2	26	52	S2109
<b>10 AWG (6 mm²)</b>						
1026520	1	0.303	7.7	39	64	S2111
<b>8 AWG (10 mm²)</b>						
1026522	1	0.358	9.1	65	98	S2111
<b>6 AWG (16 mm²)</b>						
1026524	1	0.417	10.6	103	138	S2113
<b>4 AWG (25 mm²)</b>						
1026526	1	0.484	12.3	161	195	S2116
<b>2 AWG (35 mm²)</b>						
1026528	1	0.524	13.3	226	278	S2116
<b>1 AWG (50 mm²)</b>						
1026530	1	0.626	15.9	323	360	S2121
<b>2/0 AWG (70 mm²)</b>						
1026532	1	0.709	18	452	522	S2129
<b>3/0 AWG (95 mm²)</b>						
1026534	1	0.783	19.9	614	672	S2129
<b>4/0 AWG (120 mm²)</b>						
1026536	1	0.886	22.5	775	840	S2129
<b>250 KCMIL (150 mm²)</b>						
1026538	1	0.969	24.6	969	1000	S2136
<b>350 KCMIL (185 mm²)</b>						
1026540	1	1.071	27.2	1195	1203	S2136
<b>450 KCMIL (240 mm²)</b>						
1026542	1	1.264	32.1	1550	1602	S2142
<b>500 KCMIL (300 mm²)</b>						
1026544	1	1.339	34	1938	1994	S2142

green/yellow conductor

Part number	Number of conductors incl. ground	Nominal outer diameter in mm		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® SL PG thread
<b>16 AWG (1.5 mm²)</b>						
1026513	1	0.248	6.3	10	32	S2109
<b>14 AWG (2.5 mm²)</b>						
1026515	1	0.272	6.9	16	42	S2109
<b>12 AWG (4 mm²)</b>						
1026517	1	0.283	7.2	26	52	S2109
<b>10 AWG (6 mm²)</b>						
1026519	1	0.303	7.7	39	64	S2111
<b>8 AWG (10 mm²)</b>						
1026521	1	0.358	9.1	65	98	S2111
<b>6 AWG (16 mm²)</b>						
1026523	1	0.417	10.6	103	138	S2113
<b>4 AWG (25 mm²)</b>						
1026525	1	0.484	12.3	161	195	S2116
<b>2 AWG (35 mm²)</b>						
1026527	1	0.524	13.3	226	278	S2116
<b>1 AWG (50 mm²)</b>						
1026529	1	0.626	15.9	323	360	S2121
<b>2/0 AWG (70 mm²)</b>						
1026531	1	0.709	18	452	522	S2129
<b>3/0 AWG (95 mm²)</b>						
1026533	1	0.783	19.9	614	672	S2129
<b>4/0 AWG (120 mm²)</b>						
1026535	1	0.886	22.5	775	840	S2129
<b>250 KCMIL (150 mm²)</b>						
1026537	1	0.969	24.6	969	1000	S2136
<b>350 KCMIL (185 mm²)</b>						
1026539	1	1.071	27.2	1195	1203	S2136
<b>450 KCMIL (240 mm²)</b>						
1026541	1	1.264	32.1	1550	1602	S2142
<b>500 KCMIL (300 mm²)</b>						
1026543	1	1.339	34	1938	1994	S2142

## ÖLFLEX® CHAIN 90 CP

Part number	Number of conductors incl. ground	Nominal outer diameter in mm		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® MS-SC PG thread
<b>16 AWG (1.5 mm²)</b>						
1026547	1	0.276	7	16	40	53112210
<b>14 AWG (2.5 mm²)</b>						
1026548	1	0.299	7.6	28	61	53112220
<b>12 AWG (4 mm²)</b>						
1026549	1	0.311	7.9	40	67	53112220
<b>10 AWG (6 mm²)</b>						
1026550	1	0.331	8.4	55	81	53112220
<b>8 AWG (10 mm²)</b>						
1026551	1	0.386	9.8	83	121	53112230
<b>6 AWG (16 mm²)</b>						
1026553	1	0.445	11.3	126	161	53112230
<b>4 AWG (25 mm²)</b>						
1026555	1	0.512	13	189	229	53112240
<b>2 AWG (35 mm²)</b>						
1026557	1	0.559	14.2	268	323	53112250

Part number	Number of conductors incl. ground	Nominal outer diameter in mm		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® MS-SC PG thread
<b>1 AWG (50 mm²)</b>						
1026559	1	0.661	16.8	371	410	53112250
<b>2/0 AWG (70 mm²)</b>						
1026561	1	0.752	19.1	520	592	53112260
<b>3/0 AWG (95 mm²)</b>						
1026563	1	0.850	21.6	698	781	53112260
<b>4/0 AWG (120 mm²)</b>						
1026565	1	0.929	23.6	860	929	53112260
<b>250 KCMIL (150 mm²)</b>						
1026567	1	1.020	25.9	1089	1124	53112270
<b>350 KCMIL (185 mm²)</b>						
1026569	1	1.122	28.5	1317	1332	53112270
<b>450 KCMIL (240 mm²)</b>						
1026571	1	1.315	33.4	1690	1750	53112670*
<b>500 KCMIL (300 mm²)</b>						
1026573	1	1.390	35.3	2097	2160	53112670*

\* SKINTOP® MS-SC with metric thread.

Recommended SKINTOP® assumes minimal OD variance. Additional configurations are available; please see our SKINTOP® section. If not otherwise specified, all values relating to the product are nominal values.

# ÖLFLEX® FD 90/90 CY

Flexible single-conductor power supply cable with PVC jacket



ÖLFLEX® FD 90 is a flexible 600V UL and CSA approved single-conductor cable for continuous flex applications. It is designed with super fine wire stranding and specially formulated PVC compounds that are resistant to most mineral oils and water-based coolants. ÖLFLEX® FD 90 CY with tinned copper braid shielding is used for applications where EMI emissions need to be suppressed. For bending cycles and operation parameters, see [www.lappusa.com/cf-rating](http://www.lappusa.com/cf-rating).

## Recommended applications

Power circuits and applications requiring flexible power cable to interconnect the power supply to the machine

## Approvals



Cable attributes		page 648	
OIL	OR-01	FLAME	FR-02
MOTION	CF-02*	MECH.	MP-01

Complete the installation	
SKINTOP® strain relief	page 492
EPIC® connectors	page 284

ÖLFLEX® CONNECT solution	
ÖLFLEX® CONNECT CHAIN	page 617

## Unshielded construction

**Conductors:** finely stranded bare copper

**Insulation:** specially formulated black or green/yellow PVC; non-woven wrapping

**Jacket:** specially formulated PVC; black

## Shielded construction

**Conductors:** finely stranded bare copper

**Insulation:** specially formulated black PVC; non-woven wrapping

**Shielding:** tinned copper braid

**Jacket:** specially formulated PVC; orange

## Application advantage

- Core line for ordinary duty in power chain applications
- North American UL/CSA and European market approvals
- Suitable for dry, damp interior use
- Available in larger conductor sizes for power applications
- CSA FT1 flame retardant

## Technical data

**Minimum bend radius:**  
 - for continuous flexing: 7.5 x cable diameter  
 - for stationary use: 3 x cable diameter

**Temperature range:**  
 - for continuous flexing: -5°C to +90°C  
 - for stationary use: -40°C to +90°C

**Nominal voltage:**  
 - UL/CSA: 600V  
 - IEC: 600/1000V

**Test voltage:** 4000V

**Conductor stranding:** Class 6 super fine wire

**Approvals:**  
 UL: AWM 10107  
 Attributes: NFPA 79  
 Canada: CSA AWM I/II A/B FT1 (≤ 4/0 AWG)  
 cRU AWM I/II A/B FT1 (≥ 300 KCMIL)  
 Additional: CE & RoHS based on VDE 0250/0281  
 \*UL Verified ID A522492: Continuous Flex Test Method Verified

If not otherwise specified, all values relating to the product are nominal values. Photographs are not to scale and are not true representations of the products in question.

ÖLFLEX® FD 90

black conductor

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>8 AWG (10 mm²)</b>						
0026601	1	0.354	9.0	65	118	S2111
<b>6 AWG (16 mm²)</b>						
0026604	1	0.413	10.5	103	161	S2113
<b>4 AWG (25 mm²)</b>						
0026608	1	0.465	11.8	161	243	S2116
<b>2 AWG (35 mm²)</b>						
0026611	1	0.559	14.2	226	324	S2121
<b>1 AWG (50 mm²)</b>						
0026614	1	0.638	16.2	323	444	S2121
<b>2/0 AWG (70 mm²)</b>						
0026617	1	0.720	18.3	452	603	S2129
<b>3/0 AWG (95 mm²)</b>						
0026620	1	0.780	19.8	613	792	S2129
<b>4/0 AWG (120 mm²)</b>						
0026623	1	0.921	23.4	774	1022	S2129
<b>250 KCMIL (150 mm²)</b>						
0026626	1	0.988	25.1	968	1169	S2136
<b>350 KCMIL (185 mm²)</b>						
0026629	1	1.106	28.1	1193	1549	S2136
<b>450 KCMIL (240 mm²)</b>						
0026635	1	1.244	31.6	1548	1978	S2248
<b>500 KCMIL (300 mm²)</b>						
0026641	1	1.319	33.5	1935	2382	S2248

green/yellow conductor

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>8 AWG (10 mm²)</b>						
0026600	1	0.354	9.0	65	118	S2111
<b>6 AWG (16 mm²)</b>						
0026603	1	0.413	10.5	103	161	S2113
<b>4 AWG (25 mm²)</b>						
0026607	1	0.465	11.8	161	243	S2116
<b>2 AWG (35 mm²)</b>						
0026610	1	0.559	14.2	226	324	S2121
<b>1 AWG (50 mm²)</b>						
0026613	1	0.638	16.2	323	444	S2121
<b>2/0 AWG (70 mm²)</b>						
0026616	1	0.720	18.3	452	603	S2129
<b>3/0 AWG (95 mm²)</b>						
0026619	1	0.780	19.8	613	792	S2129
<b>4/0 AWG (120 mm²)</b>						
0026622	1	0.921	23.4	774	1022	S2129
<b>250 KCMIL (150 mm²)</b>						
0026625	1	0.988	25.1	968	1169	S2136
<b>350 KCMIL (185 mm²)</b>						
0026628	1	1.106	28.1	1193	1549	S2136
<b>450 KCMIL (240 mm²)</b>						
0026634	1	1.244	31.6	1548	1978	S2248
<b>500 KCMIL (300 mm²)</b>						
0026640	1	1.319	33.5	1935	2382	S2248

ÖLFLEX® FD 90 CY

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
<b>8 AWG (10 mm²)</b>						
0026651	1	0.382	9.7	86	153	53112230
<b>6 AWG (16 mm²)</b>						
0026653	1	0.441	11.2	125	200	53112240
<b>4 AWG (25 mm²)</b>						
0026655	1	0.492	12.5	173	276	53112240
<b>2 AWG (35 mm²)</b>						
0026657	1	0.594	15.1	269	408	53112250
<b>1 AWG (50 mm²)</b>						
0026659	1	0.673	17.1	373	543	53112260
<b>2/0 AWG (70 mm²)</b>						
0026661	1	0.764	19.4	521	726	53112260

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
<b>3/0 AWG (95 mm²)</b>						
0026663	1	0.823	20.9	691	929	53112260
<b>4/0 AWG (120 mm²)</b>						
0026665	1	0.965	24.5	862	1177	53112270
<b>250 KCMIL (150 mm²)</b>						
0026667	1	1.031	26.2	948	1293	53112270
<b>350 KCMIL (185 mm²)</b>						
0026669	1	1.150	29.2	1300	1755	53112270
<b>450 KCMIL (240 mm²)</b>						
0026671	1	1.295	32.9	1697	2266	53112670*
<b>500 KCMIL (300 mm²)</b>						
0026673	1	1.370	34.8	2103	2759	53112670*

\* SKINTOP® MS-SC with metric thread.

Recommended SKINTOP® assumes minimal OD variance. Additional configurations are available; please see our SKINTOP® section. If not otherwise specified, all values relating to the product are nominal values.

# ÖLFLEX® CHAIN 809 SC/809 SC CY

Highly flexible single-conductor cable with PVC jacket



ÖLFLEX® CHAIN 809 SC is a flexible 600V single-conductor cable for continuous flex applications. It is designed with fine wire stranding and specially formulated PVC compounds that are resistant to most mineral oils and water-based coolants. ÖLFLEX® CHAIN 809 SC CY with tinned copper braid shielding is used for applications where EMI emissions need to be suppressed. For bending cycles and operation parameters, see [www.lappusa.com/cf-rating](http://www.lappusa.com/cf-rating).

### Recommended applications

Power chains or moving machine parts; wiring electric and electronic equipment in switch cabinets; specially designed for power circuits of servo motors driven by frequency converters; test systems in the automotive industry; vehicles and stationary fuel cell systems.

### Approvals



### Unshielded construction

- Conductors:** finely stranded bare copper
- Insulation:** specially formulated black or green/yellow PVC
- Jacket:** specially formulated PVC; black

### Shielded construction

- Conductors:** finely stranded bare copper
- Insulation:** specially formulated black PVC
- Shielding:** tinned copper braid
- Jacket:** specially formulated PVC; black

### Application advantage

- Suitable for light & ordinary duty in power chain applications
- North American UL/CSA & European market approvals
- Suitable for dry or damp interior use
- Available in larger conductor sizes for power applications
- CSA FT1 flame retardant

Cable attributes		page 648	
OIL	OR-01	FLAME	FR-02
MOTION	CF-01	MECH.	MP-01

Complete the installation	
SKINTOP® strain relief	page 492
EPIC® connectors	page 284

ÖLFLEX® CONNECT solution	
ÖLFLEX® CONNECT CHAIN	page 617

### Technical data

<b>Minimum bend radius:</b>		<b>Test voltage:</b>	4000V
- for installation:	4 x cable diameter	<b>Conductor stranding:</b>	Class 5 fine wire
- for flexible use:	10 x cable diameter	<b>Approvals:</b>	UL: AWM 10107
<b>Temperature range:</b>		Attributes:	NFPA 79
- for continuous flexing:	0°C to +90°C	Canada:	cRU AWM II AB FT1
- for flexible use:	-40°C to +90°C	Additional:	CE & RoHS
<b>Nominal voltage:</b>			based on VDE 0250/0285
- UL/CSA:	600V		
- IEC U <sub>0</sub> /U:	600/1000V		

If not otherwise specified, all values relating to the product are nominal values. Photographs are not to scale and are not true representations of the products in question.

## ÖLFLEX® CHAIN 809 SC

black conductor

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>10 AWG (6 mm²)</b>						
1062901	1	0.291	7.4	36	68	S2109
<b>8 AWG (10 mm²)</b>						
1062903	1	0.354	9	65	106	S2111
<b>6 AWG (16 mm²)</b>						
1062905	1	0.390	9.9	103	146	S2113
<b>4 AWG (25 mm²)</b>						
1062907	1	0.445	11.3	161	207	S2113
<b>2 AWG (35 mm²)</b>						
1062909	1	0.516	13.1	226	287	S2116
<b>1 AWG (50 mm²)</b>						
1062911	1	0.626	15.9	323	411	S2121
<b>2/0 AWG (70 mm²)</b>						
1062913	1	0.693	17.6	452	524	S2129
<b>3/0 AWG (95 mm²)</b>						
1062915	1	0.780	19.8	613	683	S2129
<b>4/0 AWG (120 mm²)</b>						
1062917	1	0.906	23	774	872	S2129
<b>250 KCMIL (150 mm²)</b>						
1062919	1	0.976	24.8	968	1075	S2136
<b>350 KCMIL (185 mm²)</b>						
1062921	1	1.067	27.1	1193	1326	S2136
<b>450 KCMIL (240 mm²)</b>						
1062923	1	1.205	30.6	1548	1628	S2136

green/yellow conductor

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>10 AWG (6 mm²)</b>						
1062900	1	0.291	7.4	36	68	S2109
<b>8 AWG (10 mm²)</b>						
1062902	1	0.354	9	65	106	S2111
<b>6 AWG (16 mm²)</b>						
1062904	1	0.390	9.9	103	146	S2113
<b>4 AWG (25 mm²)</b>						
1062906	1	0.445	11.3	161	207	S2113
<b>2 AWG (35 mm²)</b>						
1062908	1	0.516	13.1	226	287	S2116
<b>1 AWG (50 mm²)</b>						
1062910	1	0.626	15.9	323	411	S2121
<b>2/0 AWG (70 mm²)</b>						
1062912	1	0.693	17.6	452	524	S2129
<b>3/0 AWG (95 mm²)</b>						
1062914	1	0.780	19.8	613	683	S2129
<b>4/0 AWG (120 mm²)</b>						
1062916	1	0.906	23	774	872	S2129
<b>250 KCMIL (150 mm²)</b>						
1062918	1	0.976	24.8	968	1075	S2136
<b>350 KCMIL (185 mm²)</b>						
1062920	1	1.067	27.1	1193	1326	S2136
<b>450 KCMIL (240 mm²)</b>						
1062922	1	1.205	30.6	1548	1628	S2136

## ÖLFLEX® CHAIN 809 SC CY

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
<b>10 AWG (6 mm²)</b>						
1062940	1	0.319	8.1	51	85	53112220
<b>8 AWG (10 mm²)</b>						
1062941	1	0.382	9.7	82	128	53112230
<b>6 AWG (16 mm²)</b>						
1062942	1	0.417	10.6	121	168	53112230
<b>4 AWG (25 mm²)</b>						
1062943	1	0.472	12	180	236	53112240
<b>2 AWG (35 mm²)</b>						
1062944	1	0.583	14.8	264	349	53112250
<b>1 AWG (50 mm²)</b>						
1062945	1	0.661	16.8	366	462	53112250
<b>2/0 AWG (70 mm²)</b>						
1062946	1	0.728	18.5	515	596	53112260

\* SKINTOP® MS-SC with metric thread

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® MS-SC
		in	mm	lbs/mft	lbs/mft	PG thread
<b>3/0 AWG (95 mm²)</b>						
1062947	1	0.823	20.9	686	764	53112260
<b>4/0 AWG (120 mm²)</b>						
1062948	1	0.949	24.1	856	971	53112270
<b>250 KCMIL (150 mm²)</b>						
1062949	1	1.028	26.1	1072	1203	53112270
<b>350 KCMIL (185 mm²)</b>						
1062950	1	1.118	28.4	1306	1465	53112270
<b>450 KCMIL (240 mm²)</b>						
1062951	1	1.256	31.9	1694	1797	53112670*
<b>500 KCMIL (300 mm²)</b>						
1062952	1	1.319	33.5	2097	2220	53112670*

# ÖLFLEX® FD AUTO-X

## Heavy duty continuous flex control cable

LAPP KABEL STUTTGART ÖLFLEX® FD AUTO-X



ÖLFLEX® FD AUTO-X is a flexible oil- and UV-resistant multi-conductor control cable designed for continuous flexing industrial applications. It has worldwide approvals, including UL Type TC-ER, CSA AWM, and CE. For bending cycles and operation parameters, see [www.lappusa.com/cf-rating](http://www.lappusa.com/cf-rating).

### Recommended applications

Cable tracks; power chains; gantry robots; pick and place units; conveyor systems; machine tools; continuous flexing applications

### Approvals



Cable attributes		page 648	
OIL	OR-03	FLAME	FR-03
MOTION	CF-02*	MECH.	MP-03

### Complete the installation



SKINTOP® strain relief page 492



EPIC® connectors page 284

### ÖLFLEX® CONNECT solution



ÖLFLEX® CONNECT CHAIN page 617

### Technical data

<b>Minimum bend radius:</b> - for continuous flexing:	10 x cable diameter	<b>Color code*:</b> - 3c:	blue with white numbers, plus green/ yellow ground
<b>Temperature range:</b> - for continuous flexing: - for stationary use: - UL TC-ER:	-5°C to +90°C -40°C to +105°C -25°C to +90°C	- 4c & higher (blue):	no. 2 conductor is white/blue
<b>Nominal voltage:</b> - UL TC: - UL WTTTC:	600V 1000V	* Optional colors for conductors are available upon request. Colors include red, orange, yellow, and black. Minimums may apply.	
<b>Test voltage:</b>	2000V	<b>Approvals:</b>	UL: TC-ER per UL 1277 WTTTC per UL 2277 AWM 20626 Attributes: UL Oil Res I/II 75°C wet; 90°C dry -40°C cold bend; -25°C cold impact NFPA 79 NEC: Class 1 Division 2 per NEC Articles 501, 336 Canada: CSA AWM I/II A/B FT4 c(UL) CIC/TC FT4 Additional: CE & RoHS *UL Verified ID A522492: Continuous Flex Test Method Verified
<b>Conductor stranding:</b>	Class M fine wire		

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>18 AWG (1 mm<sup>2</sup>)</b>						
251803XB	3	0.309	7.8	16	55	S2111
251805XB	5	0.358	9.1	26	85	S2111
251807XB	7	0.425	10.8	36	110	S2113
251811XB	11	0.489	12.4	58	145	S2116
251812XB	12	0.489	12.4	64	160	S2116
251825XB	25	0.720	18.3	134	322	S2129
251833XB	33	0.748	19.0	175	385	S2129
251842XB	42	0.908	23.1	222	495	S2129
251849XB	49	0.942	23.9	259	595	S2129
251865XB	65	1.075	27.3	343	860	S2136

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight	Approx. weight	SKINTOP® SL
		in	mm	lbs/mft	lbs/mft	PG thread
<b>16 AWG (1.5 mm<sup>2</sup>)</b>						
251603XB	3	0.335	8.5	26	71	S2111
251607XB	7	0.464	11.8	58	126	S2116
251611XB	11	0.569	14.5	94	203	S2121
251612XB	12	0.569	14.5	103	218	S2121
251619XB	19	0.698	17.7	162	284	S2129
251625XB	25	0.798	20.3	213	397	S2129
251633XB	33	0.877	22.3	280	509	S2129
251642XB	42	0.977	24.8	381	628	S2136
251649XB	49	1.043	26.5	418	760	S2136
251665XB	65	1.191	30.3	547	890	S2136

Replace the 'B' at the end of the part number with 'R' for red conductors, 'O' for orange conductors, 'Y' for yellow conductors, 'BK' for black conductors

Recommended SKINTOP® assumes minimal OD variance. Additional configurations are available; please see our SKINTOP® section. If not otherwise specified, all values relating to the product are nominal values. Photographs are not to scale and are not true representations of the products in question.

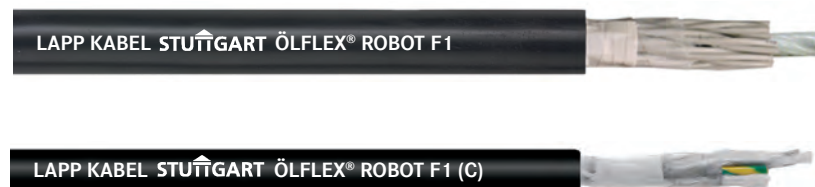
- 80 Quick select chart**
- 81 ÖLFLEX® ROBOT F1/F1 (C)**  
Robotic cable for flexing & torsion motion with UL & c(UL) AWM
- 83 ÖLFLEX® ROBOT 900 P/900 DP**  
Robotic cable for flexing & torsion motion

## Quick select chart

Product	Jacket material	Temperature range		Nominal voltage	Max. torsion twist	Torsion cycles	Page
		low	high				
ÖLFLEX® ROBOT F1	PUR	-40°C	80°C	AWM: 600V or 1000V	± 360°/m	5 million	81
ÖLFLEX® ROBOT F1 (C)					± 180°/m		
ÖLFLEX® ROBOT 900 P	PUR	-40°C	80°C	IEC: 300/500V	± 360°/m	5 million	83
ÖLFLEX® ROBOT 900 DP					± 180°/m		

# ÖLFLEX® ROBOT F1/F1 (C)

Robotic cable for flexing & torsion motion with UL & c(UL) AWM



ÖLFLEX® ROBOT F1 is designed to transmit control and monitoring signals as well as power supply in environments where combined twisting and bending stresses occur. ÖLFLEX® ROBOT F1 (C) with copper shield is designed for use where EMI emissions need to be suppressed.

## Unshielded construction

**Conductors:** finely stranded bare copper

**Insulation:** TPE; conductors or pairs twisted into bundles or layers

**Jacket:** polyurethane; black

## Shielded construction

**Conductors:** finely stranded bare copper

**Insulation:** TPE; conductors or pairs twisted into bundles or layers

**Shielding:** tinned copper spiral shield

**Jacket:** polyurethane; black

## Recommended applications

Multi-axis articulated robots with twisting and bending motion; automated handling equipment in cable tracks or moving machine parts

## Approvals



## Application advantage

- UL AWM approval for USA and Canada
- Specially formulated PUR jacket protects against the harshest of industrial plant environments
- Maximum twist of  $\pm 360^\circ/\text{m}$  unshielded for wide variety of robot applications

Cable attributes		page 649	
OIL	OR-05	FLAME	FR-02
MOTION	TCF-01	MECH.	MP-05

Complete the installation	
SKINTOP® strain relief page 492	EPIC® connectors page 284

## Technical data

<b>Minimum bend radius:</b>		<b>Conductor stranding:</b>	extra fine wire
- unshielded:	10 x cable diameter	<b>Color code:</b>	
- shielded:	10 x cable diameter	- up to 22 AWG:	DIN 47100: chart 8, page 682
<b>Maximum torsion (twist):</b>		- 20 AWG & larger:	white conductors with black numbers, plus green/yellow ground
- unshielded:	$\pm 360^\circ/\text{m}$	<b>Approvals:</b>	UL: AWM 20940
- shielded:	$\pm 180^\circ/\text{m}$	Attributes:	NFPA 79
<b>Temperature range:</b>	-40°C to +80°C	Canada:	cRU AWM I/II A/B
<b>Nominal voltage:</b>		Additional:	CE & RoHS
- UL/CSA:			
- up to 16 AWG:	600V		
- 14 AWG & larger:	1000V		
- IEC:			
- up to 22 AWG:	250V		
- 20 - 14 AWG:	300/500V		

If not otherwise specified, all values relating to the product are nominal values. Photographs are not to scale and are not true representations of the products in question.

ÖLFLEX® ROBOT F1

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® SL PG thread
		in	mm			
<b>24 AWG (0.25 mm<sup>2</sup>)</b>						
0029590	7	0.264	6.7	11	42	S2109
0029591	12	0.354	9.0	20	82	S2111
0029592	18	0.417	10.6	30	105	S2113
0029593	25	0.492	12.5	40	138	S2116
<b>22 AWG (0.34 mm<sup>2</sup>)</b>						
0029594*	2	0.181	4.6	5	26	S2107
0029596	4	0.205	5.2	10	32	S2107
0029599	12	0.370	9.4	27	87	S2111
0029600	18	0.441	11.2	40	114	S2113
0029601	25	0.516	13.1	56	148	S2116
<b>20 AWG (0.5 mm<sup>2</sup>)</b>						
0029608	18	0.484	12.3	56	136	S2116
0029609	25	0.598	15.2	80	191	S2121

\*2c cable does not include ground

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® SL PG thread
		in	mm			
<b>18 AWG (1 mm<sup>2</sup>)</b>						
0029612	4	0.283	7.2	26	58	S2111
0029614	7	0.362	9.2	44	95	S2111
0029615	12	0.488	12.4	74	159	S2116
0029616	14	0.520	13.2	86	173	S2116
0029617	16 + 1pr	0.606	15.4	128	233	S2121
0029618	18	0.634	16.1	114	235	S2121
0029619	23 + 1pr	0.709	18.0	168	310	S2129
0029620	25	0.701	17.8	161	274	S2129
<b>16 AWG (1.5 mm<sup>2</sup>)</b>						
0029624	4	0.323	8.2	38	77	S2111
0029627	7	0.413	10.5	68	126	S2113
0029629	12	0.563	14.3	114	198	S2121
0029631	25	0.776	19.7	242	444	S2129
<b>10 AWG (6 mm<sup>2</sup>)</b>						
0029641	4	0.524	13.3	148	222	S2116

ÖLFLEX® ROBOT F1 (C)

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® MS-SC PG thread
		in	mm			
<b>24 AWG (0.5 mm<sup>2</sup>)</b>						
0029653	3pr	0.315	8.0	26	67	53112220
0029654	25	0.543	13.8	77	188	53112250
<b>22 AWG (0.34 mm<sup>2</sup>)</b>						
0029655	2	0.205	5.2	12	36	53112210
0029656	3	0.213	5.4	13	38	53112210

\*2c cable does not include ground

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® MS-SC PG thread
		in	mm			
0029657	4	0.260	6.6	19	48	53112210
0029658	5pr	0.402	10.2	46	106	53112230
<b>16 AWG (1.5 mm<sup>2</sup>)</b>						
0029689	12	0.606	15.4	155	255	53112250
0029690	18	0.728	18.5	228	370	53112260

Recommended SKINTOP® assumes minimal OD variance. Additional configurations are available; please see our SKINTOP® section. If not otherwise specified, all values relating to the product are nominal values.

# ÖLFLEX® ROBOT 900 P/900 DP

Robotic cable for flexing & torsion motion



ÖLFLEX® ROBOT 900 P is a multi-conductor control and signal monitoring cable. It is designed to withstand the extreme demands of twisting and bending stresses in robotic applications. ÖLFLEX® ROBOT 900 DP has a tinned copper spiral shield and is designed for use where EMI emissions need to be suppressed.

## Recommended applications

Multi-axis articulated robots with twisting and bending motion; automated handling equipment; cable tracks or moving machine parts.

## Approvals



Cable attributes		page 648	
OIL	OR-05	FLAME	FR-02
MOTION	T-01	MECH.	MP-05

## Unshielded construction

**Conductors:** finely stranded bare copper

**Insulation:** TPE; conductors twisted in layers with low-friction core wrap

**Jacket:** polyurethane; black

## Shielded construction

**Conductors:** finely stranded bare copper

**Insulation:** TPE; conductors twisted in layers with low-friction core wrap

**Shielding:** tinned copper spiral shield

**Jacket:** polyurethane; black

## Application advantage

- Designed for applications where combined twisting and bending occur
- Specially formulated PUR jacket protects against the harshest of industrial plant environments
- Maximum twist of  $\pm 360^\circ / m$  (unshielded) for wide variety of robot applications

Complete the installation	
SKINTOP® strain relief page 492	EPIC® connectors page 284

Technical data	
<b>Minimum bend radius:</b>	- unshielded: 15 x cable diameter - shielded: 15 x cable diameter
<b>Maximum torsion (twist):</b>	- unshielded: $\pm 360^\circ / m$ - shielded: $\pm 180^\circ / m$
<b>Temperature range:</b>	- for flexible use: $-40^\circ C$ to $+80^\circ C$
<b>Nominal voltage:</b>	- up to 22 AWG: 48V AC - 20 AWG & larger: $U_0 / U$ : 300/500V
<b>Test voltage:</b>	- up to 22 AWG: 1500V - 20 AWG & larger: 3000V
<b>Conductor stranding:</b>	extra fine wire
<b>Color code:</b>	- up to 22 AWG: DIN 47100: chart 8, page 682 - 20 AWG & larger: black with white numbers, plus green/yellow ground
<b>Approvals:</b>	CE & RoHS based on VDE 0281/0282 & 0812

If not otherwise specified, all values relating to the product are nominal values. Photographs are not to scale and are not true representations of the products in question.

ÖLFLEX® ROBOT 900 P

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® SL PG thread
		in	mm			
<b>24 AWG (0.25 mm<sup>2</sup>)</b>						
0028110	7	0.244	6.2	11	32	S2107
0028116	25	0.402	10.2	40	95	S2113
<b>20 AWG (0.5 mm<sup>2</sup>)</b>						
0028145	18	0.441	11.2	58	81	S2113
0028146	25	0.524	13.3	81	171	S2116
<b>19 AWG (0.75 mm<sup>2</sup>)</b>						
0028160	4	0.260	6.6	19	42	S2109
0028164	14	0.441	11.2	68	134	S2113
<b>18 AWG (1 mm<sup>2</sup>)</b>						
0028170*	2	0.244	6.2	13	32	S2107
0028171	3	0.256	6.5	19	41	S2109
0028172	4	0.276	7.0	26	51	S2111
0028174	7	0.366	9.3	45	88	S2111
0028176	12	0.453	11.5	77	145	S2113
0028185	16 + 1pr	0.630	16.0	131	253	S2121

\* 2c cable does not include ground

Part number	Number of conductors incl. ground*	Nominal outer diameter		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® SL PG thread
		in	mm			
0028178	18	0.520	13.2	116	193	S2116
0028186	23 + 1 pr	0.681	17.3	176	316	S2129
0028180	25	0.646	16.4	161	291	S2121
0028190	34	0.783	19.9	219	384	S2129
0028191	41	0.878	22.3	264	474	S2129
<b>16 AWG (1.5 mm<sup>2</sup>)</b>						
0028198	18	0.622	15.8	174	300	S2121
<b>14 AWG (2.5 mm<sup>2</sup>)</b>						
0028181	3	0.366	9.3	48	91	S2111
0028182	4	0.398	10.1	65	115	S2113
<b>6 AWG (10 mm<sup>2</sup>)</b>						
0028400	3	0.843	21.4	310	484	S2129
<b>4 AWG (25 mm<sup>2</sup>)</b>						
0028187	3	1.031	26.2	484	791	S2136
<b>2 AWG (35 mm<sup>2</sup>)</b>						
0028189	3	1.134	28.8	677	1047	S2136

ÖLFLEX® ROBOT 900 DP

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® MS-SC PG thread
		in	mm			
<b>26 AWG (0.14 mm<sup>2</sup>)</b>						
0028100	12	0.264	6.7	29	46	53112210
0028105	3pr	0.244	6.2	11	30	53112210
<b>24 AWG (0.25 mm<sup>2</sup>)</b>						
0028126	25	0.437	11.1	70	123	53112230

Part number	Number of conductors incl. ground	Nominal outer diameter		Copper weight lbs/mft	Approx. weight lbs/mft	SKINTOP® MS-SC PG thread
		in	mm			
<b>22 AWG (0.34 mm<sup>2</sup>)</b>						
0028135	4	0.224	5.7	14	31	53112210
0028136	5pr	0.358	9.1	43	77	53112220
<b>16 AWG (1.5 mm<sup>2</sup>)</b>						
0028195	12	0.551	14.0	174	265	53112250

Recommended SKINTOP® assumes minimal OD variance. Additional configurations are available; please see our SKINTOP® section. If not otherwise specified, all values relating to the product are nominal values.