

ÖLFLEX® ROBOT F1/F1 (C)

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

LAPP KABEL STUTTGART ÖLFLEX® ROBOT F1

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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.

Recommended applications

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

Approvals



Cable attributes page 649

OIL	OR-05	FLAME	FR-02
MOTION	TCF-01	MECH.	MP-05

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

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

Complete the installation



SKINTOP®
strain relief
page 492



EPIC®
connectors
page 284

Technical data

Minimum bend radius:
- unshielded: 10 x cable diameter
- shielded: 10 x cable diameter

Maximum torsion (twist):
- unshielded: $\pm 360^\circ/\text{m}$
- shielded: $\pm 180^\circ/\text{m}$

Temperature range: -40°C to $+80^\circ\text{C}$

Nominal voltage:
- UL/CSA:
- up to 16 AWG: 600V
- 14 AWG & larger: 1000V
- IEC:
- up to 22 AWG: 250V
- 20 - 14 AWG: 300/500V

Conductor stranding: extra fine wire

Color code:
- up to 22 AWG: DIN 47100: chart 8, page 682
- 20 AWG & larger: white conductors with black numbers, plus green/yellow ground

Approvals:
UL: AWM 20940
Attributes: NFPA 79
Canada: cRU AWM I/II A/B
Additional: CE & RoHS

Torsional & robotic cable

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			
24 AWG (0.25 mm²)						
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
22 AWG (0.34 mm²)						
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
20 AWG (0.5 mm²)						
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			
18 AWG (1 mm²)						
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
16 AWG (1.5 mm²)						
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
10 AWG (6 mm²)						
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			
24 AWG (0.5 mm²)						
0029653	3pr	0.315	8.0	26	67	53112220
0029654	25	0.543	13.8	77	188	53112250
22 AWG (0.34 mm²)						
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
16 AWG (1.5 mm²)						
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.