

# ÖLFLEX® ROBOT 900 P/900 DP

Robotic cable for flexing & torsion motion

LAPP KABEL STUTTGART ÖLFLEX® ROBOT 900 P

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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  $\pm 360^\circ/\text{m}$  (unshielded) for wide variety of robot applications

## Complete the installation



SKINTOP®  
strain relief  
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EPIC®  
connectors  
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## Technical data

### Minimum bend radius:

- unshielded: 15 x cable diameter
- shielded: 15 x cable diameter

### Maximum torsion (twist):

- unshielded:  $\pm 360^\circ/\text{m}$
- shielded:  $\pm 180^\circ/\text{m}$

### Temperature range:

- for flexible use:  $-40^\circ\text{C}$  to  $+80^\circ\text{C}$

### Nominal voltage:

- up to 22 AWG: 48V AC
- 20 AWG & larger: 300/500V

### Test voltage:

- up to 22 AWG: 1500V
- 20 AWG & larger: 3000V

### Conductor stranding:

extra fine wire

### Color code:

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

### Approvals:

CE & RoHS  
based on VDE 0281/0282 & 0812

Torsional & robotic cable

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.