

|                           |                                |  |
|---------------------------|--------------------------------|--|
| 0036910                   | <b>DATA SHEET</b>              |  |
| Valid from:<br>24.08.2018 | <b>ÖLFLEX® SERVO FD 798 CP</b> |  |

## Application

ÖLFLEX® SERVO FD 798 CP cables are high-flexible, screened, oil-resistant, halogen free, signal (encoder and resolver) cables with an outer sheath of Polyurethane. They are designed for use in high-dynamic applications with acceleration up to 50 m/s<sup>2</sup> in power chains as well as for fixed installation. They are also suitable for use in dry, damp or wet areas. They are suitable for outdoor use if the indicated temperature range is observed.

ÖLFLEX® SERVO FD 798 CP cables are increased resistant to oils and at room temperature largely resistant to acids and alkalis. The outer sheath withstands high mechanical stresses, in particular abrasion and dragging. It is also cut proof and resists microbes and hydrolysis. They are especially suitable for increased requirements (Extended Line) in power chains and in permanently moved machine parts. They are suitable for linear, automated movements. The maximum tensile load is 15 N/mm<sup>2</sup> of conductor cross-section during installation and operation. Compulsory guidance is not permitted.

The screening braid protects against interference from electrical fields.

Application range:

Connecting cable between servo controller and encoder/resolver / speed generators, in power chains or moving machine parts, particularly in wet areas of machine tools and transfer lines, assembly lines, production lines, in all kinds of machines.

Use acc. to UL: PUR sheathed cable for internal wiring or external interconnection of electronic equipment.

Use acc. to CSA: PUR sheathed cable for internal wiring or external interconnection of electronic equipment with or without mechanical load conditions.

## Design

|                     |  |
|---------------------|--|
| Design              | according to UL AWM 758, Style 20236 and based on EN 50525-2-21 resp. VDE 0285-2-21  |
| Approvals           | UL AWM 758, Style 20236<br>CSA AWM I A/B II A/B C22.2 No. 210- 15  |
| Conductor           | tinned copper stranded   |
| Core insulation     | PP Polypropylen  |
| Core identification | coloured, details see below  |
| Screen              | braid of tinned copper wires, coverage = 85% (nominal value)   |
| Outer sheath        | Polyurethane-compound TMPU acc. to EN 50363-10-2 resp. VDE 0207-363-10-2<br>UL AWM 758, CSA AWM C22.2 No.210-15<br>colour: green, similar RAL 6018 |

## Electrical properties

|                 |   |
|-----------------|---|
| Nominal voltage | IEC: 30 V<br>UL/CSA: 30 V                           |
| Test voltage    | core / core: 1500 V rms<br>core / screen: 750 V rms |

## Mechanical and thermal properties

|                     |   |
|---------------------|---|
| Min. bending radius | flexing: up from 7.5 x cable diameter<br>fixed installation: 4 x cable diameter   |
| Temperature range   | flexing (VDE): -40 °C up to +90 °C max. conductor temp.<br>flexing (UL/CSA): up to +80 °C max. conductor temp.<br>fixed installation (VDE): -50 °C up to +90 °C max. conductor temp.<br>fixed installation(UL/CSA): up to +80 °C max. conductor temp. |

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| Flammability     | flame retardant in acc. with IEC 60332-1-2 resp. VDE 0482-332-1-2<br>UL: Vertical flame test VW-1<br>CSA: FT1  |
| Halogen-free     | acc. to VDE 0472 part 815  |
| UV-resistance    | acc. to EN 50618 resp. VDE 0283-618<br>acc. to EN 50620 resp. VDE 0285-620<br>acc. to EN ISO 4892-2-2006, method A (change of colour allowed)  |
| Ozone resistance | acc. to EN 50396 resp. VDE 0473-396, method B  |
| Oil resistance   | acc. to EN 50363-10-2 resp. VDE 0207-363-10-2  |
| MUD resistance   | MUD resistant acc. to IEC 61892-4 Annex D  |
| Tests            | acc. to IEC 60811 resp. VDE 0473 part 811, VDE 0472, EN 50395, UL 1581   |
| EU Directives    | These cables are conform to the EC-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances).<br>As this product is designed for appropriate use in a voltage range of < 50 V AC resp. < 75 V DC, it is not subject to the Low Voltage Directive 2014/35/EU. |

**Core-Identification-Code for ÖLFLEX® SERVO FD 798 CP**

|                |  |
|----------------|--|
| <b>0036910</b> | Dimension: <b>4 x 2 x 0.34 + 4 x 0.5</b><br><br>Pairs: 0.34: BN/BK; RD/OG, YE/GN, BU/VT<br>Cores: 0.5: BU-WH, BK-WH, RD-WH, YE-WH<br><br>Overall screen: Tinned copper braid, coverage = 85 % (nominal value)  |
| <b>0036911</b> | Dimension: <b>3 x (2 x 0.14) + 2 x (0.5)</b><br><br>Pairs: 0.14: YE/GN, RD/BU, GY/PK<br>Pair shield: Drain wire: Tinned copper wire strands<br>Wrapped with tinned copper wires<br>Covering: Polyolefin<br>Cores: 0.5: WH, BN<br>Core shield: Wrapped with tinned copper wires<br>Covering: Polyolefin<br><br>Overall screen: Tinned copper braid, coverage = 85 % (nominal value) |
| <b>0036912</b> | Dimension: <b>3 x (2 x 0.14) + 4 x 0.14 + 2 x 0.5</b><br><br>Pairs: 0.14: YE/GN, BK/BN, RD/OG<br>Pair shield: Drain wire: Tinned copper wire strands<br>Wrapped with tinned copper wires<br>Pair: 0.5: BN-RD/BN-BU<br>Cores: 4-conductor bundle: 0.14: GY, BU, WH-YE, WH-BK<br><br>Overall screen: Tinned copper braid, coverage = 85 % (nominal value)                            |

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**0036913** Dimension: **3 x (2 x 0.14) + 4 x 0.14 + 2 x 0.5 + 4 x 0.22**

Pairs: 0.14: YE/GN, BK/BN, RD/OG  
Pair shield: Drain wire: Tinned copper wire strands  
Wrapped with tinned copper wires

Pair: 0.5: BN-RD/BN-BU

Cores: 4-conductor bundle: 0.14: GY, BU, WH-YE, WH-BK

Cores: 4-conductor bundle: 0.22: BN-YE, BN-GY, GN-BK, GN-RD

Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

**0036914** Dimension: **9 x 0.5**

**Cores:** BU, WH, RD, PK, GN, YE, BN, BK, GY

Overall screen: Drain wire: Tinned copper wire strands  
Tinned copper braid, coverage = 85 % (nominal value)

**0036915** Dimension: **4 x 2 x 0.25 + 2 x 1.0**

Pairs: 0.25: BN/GN, GY/PK, BU/VT, RD/BK

Cores: 1.0: WH, BN

Overall screen: Drain wire: Tinned copper wire strands  
Tinned copper braid, coverage = 85 % (nominal value)

**0036916** Dimension: **6 x 2 x 0.25 + 2 x 0.5**

Pairs: 0.25: WH/BN, GN/YE, GY/PK, BU/RD, BK/VT, GY-PK/RD-BU

Cores: 0.5: WH, BN

Overall screen: Drain wire: Tinned copper wire strands  
Tinned copper braid, coverage = 85 % (nominal value)

**0036917** Dimension: **10 x 0.14 + 2 x 0.5**

Cores: 0.14: WH, BN, GN, YE, GY, PK, BU, RD, BK, VT

Pair: 0.5: WH/BN

Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

**0036918** Dimension: **10 x 0.14 + 4 x 0.5**

Cores: 0.14: WH, BN, GN, YE, GY, PK, BU, RD, BK, VT

Cores: 0.5: WH, BN, BU, BK

Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

**0036920** Dimension: **4 x 2 x 0.14 + 4 x 0.5**

Pairs: 0.14: RD/BK, BN/GN, YE/VT, GY/PK

Cores: 0.5: WH, BU, WH-GN, BN-GN

Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

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**0036921** Dimension: **4 x 2 x 0.25**

Pairs: 0.25: WH/BN, GN/YE, GY/PK, BU/RD

Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

**0036923** Dimension: **8 x 2 x 0.18**

Pairs: 0.18: WH-YE/WH-GN, WH-RD/WH-OG, WH-BK/WH-BN, GY/WH, BU/VT, YE/GN, RD/OG, BK/BN

Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

**0036924** Dimension: **4 x 2 x 0.18**

Pairs: 0.18: BK/BN, RD/OG, YE/GN, BU/VT

Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

**0036926** Dimension: **12 x 0,22**

**Cores:** BK, BN, RD, OG, YE, GN, BU, VT, GY, WH, WH-BK, WH-BN

Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

**0036927** Dimension: **4 x 2 x 0.25 + 2 x 0.5**

Pairs: 0.25: BN/GN, GY/PK, BU/VT, RD/BK

Cores: 1.0: WH, BN

Overall screen: Drain wire: Tinned copper wire strands  
Tinned copper braid, coverage = 85 % (nominal value)

**0036928** Dimension: **2 x 2 x 0.14 + 2 x (2 x 0.14) + 4 x 0.5 + (4 x 0.14)**

Pairs: 0.14: BU/RD, GY/PK

Pairs: 0.14: WH/BN, GN/YE

Pair shield: Wrapped with tinned copper wires

Cores: 0.5: WH, BN, GN, YE

Cores: 4-conductor bundle 0.14: WH, BN, GN, YE

Wrapped with tinned copper wires

Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

**0036929** Dimension: **2 x (2 x 0.25) + 2 x 0.5**

Pairs: 0.25: WH/BN, GN/YE

Pair shield: Aluminium-laminated foil, wrapped with tinned copper wires

Cores: 0.5: PK, GY

Overall screen: Drain wire: Tinned copper wire strands  
Tinned copper braid, coverage = 85 % (nominal value)

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**0036930** Dimension: **2 x 2 x 0.25 + 2 x 0.5**

Pairs: 0.25: RD/BK, GY/PK

Cores: 0.5: WH, BN

Overall screen: Drain wire: Tinned copper wire strands  
Tinned copper braid, coverage = 85 % (nominal value)

### Dynamic performance

Pulling force (Dynamic):  $\leq 20 \text{ N/mm}^2$

Pulling force (Static):  $\leq 50 \text{ N/mm}^2$

Max. Acceleration: see Table A

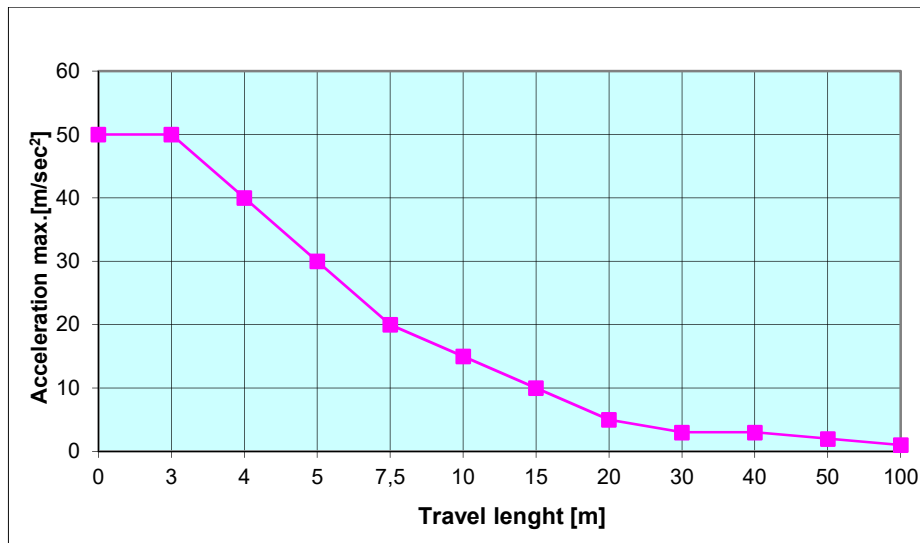
Max. Speed (sliding): 5 m/s resp. 300 m/min

Max. Length (horizontal): see Table A

Bending cycles and power chain operation parameters See Selection Table A2-1 in the appendix of our online catalogue  
For use in power chains: Please comply with assembly guideline Appendix T3

Max. Torsion load:  $\pm 30^\circ / \text{m}$

**Table A**



| Travel length [m] | Acceleration [m/sec <sup>2</sup> ] |
|-------------------|------------------------------------|
| 0                 | 50                                 |
| 3                 | 50                                 |
| 4                 | 40                                 |
| 5                 | 30                                 |
| 7,5               | 20                                 |
| 10                | 15                                 |
| 15                | 10                                 |
| 20                | 5                                  |
| 30                | 3                                  |
| 40                | 3                                  |
| 50                | 2                                  |
| 100               | 1                                  |