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0036910	DATA SHEET	LAPP
Valid from: 01.09.2023	ÖLFLEX® SERVO FD 798 CP	

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/s² 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/mm² 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 : Style 20236: External interconnection or internal wiring.
Style 21165: Internal wiring
Style 20549: Internal wiring of electronic equipment and appliances
Use acc. to : Internal or external interconnection with or without mechanical load conditions.

Design

Design	dimension dependent, see table 1 acc. to UL AWM Style 20236, UL 758 (UL 30 V) UL AWM Style 21165 (20549), UL 758 (UL 300V) CSA 22.2 No. 210
Certification	dimension dependent, see table 1 : AWM Style 20236 (30 V), UL 758 (File No. E63634) AWM Style 21165 (20549) (300 V), UL 758 (File No. E63634) AWM I/II A/B (File No. E63634): exception Art. Nr. 0036939 : Art. Nr. 0036939
Conductor	tinned copper stranded
Core insulation	PP Polypropylen-based compound
Core identification	coloured, details see below
Wrapping	fleece tape wrapping over core stranding
Screen (dimension dependent)	braid of tinned copper wires, coverage = 85% (nominal value)
Outer sheath	TPU, Polyurethane-compound TMPU acc. to EN 50363-10-2 UL 758, CSA C22.2 No.210 colour: green, similar RAL 6018

Electrical properties

Nominal voltage	EN: 30 V
Rated voltage	UL/CSA: dimension dependent, see table 1
Test voltage	**30 V version (UL/CSA):** core / core: 1500 V rms core / overall screen: 750 V rms

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300 V version (UL/CSA):
core / core: 2000 V rms
core / overall screen: 2000 V rms

Mechanical and thermal properties

Min. bending radius	flexing: up from 7.5 x outer diameter fixed installation: 4 x outer diameter
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
Temperature range	flexing (EN): -40 °C up to +90 °C max. conductor temp. flexing (UL/CSA): up to +80 °C max. conductor temp. fixed installation (EN): -50 °C up to +90 °C max. conductor temp. fixed installation(UL/CSA): up to +80 °C max. conductor temp.
Flammability	flame retardant acc. to IEC 60332-1-2 resp. EN 60332-1-2 UL: dimension dependent, see table 1 HFT acc. to UL 1581, Section 1090 or VW-1 acc. to UL 1581, Section 1080 CSA: FT1 acc. to CSA C22.2 No. 2556 § 9.3 (exception 0036939)
Halogen-free	acc. to IEC 60754-1 resp. EN 60754-1
UV-resistance	acc. to EN 50618 acc. to EN 50620 acc. to EN ISO 4892-2-2006, method A (change of colour allowed)
Ozone resistance	acc. to EN 50396, method B
Oil resistance	acc. to EN 50363-10-2
MUD resistance	acc. to IEC 60092-360, Annex C+D
Transfer impedance at 30 MHz (screened versions)	max. 250 mΩ/m
Tests	acc. to IEC 60811 resp. EN 60811, EN 50395, UL 1581, CSA 22.2 No. 210
General requirements	These cables are conform to the EU-Directives 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances). 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.
Environmental information	These cables meet the substance-specific requirements of the EU Directive 2011/65/EU (RoHS).

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

0036910 Dimension: **(4 x 2 x 0.34 + 4 x 0.5)**

Pairs: 0.34: BN/BK; RD/OG, YE/GN, BU/VT
Cores: 0.5: BU-WH, BK-WH, RD-WH, YE-WH

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

0036911 Dimension: **(3 x (2 x 0.14) + 2 x (0.5))**

Pairs: 0.14: YE/GN, RD/BU, GY/PK
Pair shield: Drain wire: Tinned copper wire strands
Wrapped with tinned copper wires
Covering: Polyolefin

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Cores: 0.5: WH, BN
Core shield: Wrapped with tinned copper wires
Covering: Polyolefin

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

0036912 Dimension: **(3 x (2 x 0.14) + 4 x 0.14 + 2 x 0.5)**

Pairs: 0.14: YE/GN, BK/BN, RD/OG
Pair shield: Drain wire: Tinned copper wire strands
Wrapped with tinned copper wires
Cores: 4-conductor bundle: 0.14: GY, BU, WH-YE, WH-BK
Pair: 0.5: BN-RD/BN-BU

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

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
Cores: 4-conductor bundle: 0.14: GY, BU, WH-YE, WH-BK
Pair: 0.5: BN-RD/BN-BU
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)

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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)

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

Pairs: 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: 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: 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: 0.5: 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)

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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)

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)

0036931 Dimension: **(3 x (2 x 0.14) + 2 x (1.0))**

Pairs: 0.14: GN/YE, GY/PK, RD/BU
Pair shield: Wrapped with tinned copper wires
Covering: Polyolefin
Cores: 1.0: WH, BN
Core shield: Wrapped with tinned copper wires
Covering: Polyolefin
Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

0036932 Dimension: **(4 x 2 x 0.14 + 4 x 0.5 + (4 x 0.14))**

Pairs: 0.14: BU/BK, BN/GN, VT/YE, GY/PK
Cores: 0.5: WH, BU, WH-GN, BN-GN
Cores: 4-conductor bundle 0.14: YE-BK, RD-BK, GN-BK, BU-BK
Shield: Wrapped with tinned copper wires
Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

0036933 Dimension: **(3 x 2 x 0.25 + 2 x 0.5)**

Pairs: 0.25: WH/BN, GN/YE, GY/PK
Cores: 0.5: BU, RD
Overall screen: Drain wire: Tinned copper wire strands
Tinned copper braid, coverage = 85 % (nominal value)

0036934 Dimension: **(5 x 2 x 0.25 + 2 x 0.5)**

Pairs: 0.25: GN/YE, GY/PK; WH/BN, GY-PK/RD-BU, BK/VT
Cores: 0.5: BU, RD
Overall screen: Drain wire: Tinned copper wire strands
Tinned copper braid, coverage = 85 % (nominal value)

0036935 Dimension: **(3 x 2 x 24AWG)**

Pairs: WH/BN, GN/YE, GY/PK
Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

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0036936 Dimension: **(5 x 2 x 0.14 + 2 x 0.5)**

Pairs: 0.14: WH/VT, BN/GN, YE/GY, PK/BU, RD/BK
Cores: 0.5: WH/RD; WH/GN
Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

0036937 Dimension: **(2 x 2 x 0.18 + 5 x 0.5)**

Pairs: 0.18: WH/BN, BK/VT
Cores: 0.5: GN, YE, GY, PK, BU
Overall screen: Drain wire: Tinned copper wire strands
Tinned copper braid, coverage = 85 % (nominal value)

0036938 Dimension: **(5 x 2 x 0.18 + 6 x 0.5)**

Pairs: 0.18: BK/OG, BK/GY, WH/YE, WH/GY, WH/BN
Cores: 0.5: 3xBK with No. 1-3
3xRD with No. 4-6

Overall screen: Drain wire: Tinned copper wire strands
Tinned copper braid, coverage = 85 %

0036939 Dimension: **(10 x 2 x 28AWG)**

Pairs: WH/BU, WH/YE, WH/GN, WH/RD, WH/VT, BN/BU, BN/YE, BN/GN, BN/RD, BN/VT
Overall screen: Drain wire: Tinned copper wire strands
Tinned copper braid, coverage = 85 % (nominal value)

0036940 Dimension: **(6 x 2 x 0.25)**

Pairs: WH/BN, GN/YE, GY/PK, BU/RD, BK/VT, GY-PK/RD-BU
Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

0036941 Dimension: **3 x (2 x 0.14) + (3 x 0.14)**

Pairs: 0.14: BK/YE, BK/GN, BK/RD
Pair shield: Tinned copper braid, coverage = 85 % (nominal value)
Cores: 3-conductor bundle 0.14: BK, GY, PK
Shield: Tinned copper braid, coverage = 85 % (nominal value)

0036942 Dimension: **(2 x 2 x 0.18)**

Pairs: RD/OR, BK/BN
Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

0036943 Dimension: **(4 x 1 + 4 x 2 x 0.14 + (4 x 0.14))**

Cores: 1: WH, BU, WH-GN, BN-GN
Pairs: 0.14: GY/PK, VT/YE, BN/GN, RD/BK
Cores: 4-conductor bundle 0.14: GN-BK, BU-BK, YE-BK, RD-BK
Shield: Wrapped with tinned copper wires
Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

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0036944 Dimension: **(3 x (2 x 0.25) + 3 x 0.25 + 2 x 1.0)**

Pairs: 0.25: BN/GN, GY/PK, RD/BK
Pair shield: Wrapped with tinned copper wires
Cores: 3-conductor bundle 0.25: YE, BU, VT
Cores: 1.0: BN, WH
Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

0036945 Dimension: **4 x (2 x 0.14) + 2 x (1.0)**

Pairs: 0.14: GN/YE, RD/BU, BK/VT, PK/GY
Pair shield: Tinned copper braid, coverage = 85 % (nominal value)
Cores: 1.0: WH, BN
Core shield: Tinned copper braid, coverage = 85 % (nominal value)

0036946 Dimension: **3 x (2 x 0.14) + (2 x 0.5)**

Pairs: 0.14: GN/YE, PK/GY, RD/BU
Pair shield: Tinned copper braid, coverage = 85 % (nominal value)
Pair: 0.5: WH/BN
Pair shield: Tinned copper braid, coverage = 85 % (nominal value)

0036947 Dimension: **(5 x 2 x 0.25)**

Pairs: WH/BN, GN/YE, GY/PK, BU/RD, BK/VT
Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

0036948 Dimension: **(5 x 2 x 22AWG)**

Pairs: BK/WH-BK; RD/WH-RD; GN/WH-GN; GR/WH-GR; OR/WH-OR
Overall screen: Tinned copper braid, coverage = 85 % (nominal value)

0036949 Dimension: **(3 x (2 x 0.14) + 2 x (0.5))**

Pairs: 0.14: YE/GN, BK/BN, RD/OR
Pair shield: Drain wire: Tinned copper wire strands
Wrapped with tinned copper wires
Covering: Polyolefin
Cores: 0.5: BK, RD
Core shield: Wrapped with tinned copper wires
Covering: Polyolefin
Overall screen: Tinned copper braid, coverage = 85 % (nominal value

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Table 1

Art.-No.	Number of cores x Cross section n x [mm²]	AWM Style	UL/CSA Rated voltage	UL/CSA flammability
0036910	(4x2x0.34+4x0.5)	20236	30 V	VW-1; FT1
0036949	(3x(2x0.14)+2x(0.5))	20236	30 V	VW-1; FT1
0036912	(3x(2x0.14)+4x0.14+2x0.5)	20236	30 V	VW-1; FT1
0036913	(3x(2x0.14)+4x0.14+2x0.5+4x0.22)	20236	30 V	VW-1; FT1
0036942	(2x2x0.18)	20236	30 V	VW-1; FT1
0036924	(4x2x0.18)	20236	30 V	VW-1; FT1
0036923	(8x2x0.18)	20236	30 V	VW-1; FT1
0036926	(12x0.22)	20236	30 V	VW-1; FT1
0036915	(4x2x0.25+2x1)	20236	30 V	VW-1; FT1
0036927	(4x2x0.25+2x0.5)	20236	30 V	VW-1; FT1
0036943	(4x1+4x2x0.14+(4x0.14))	21165	300 V	HFT; FT1
0036944	(3x(2x0.25)+3x0.25+2x1)	21165	300 V	HFT; FT1
0036929	(2x(2x0.25)+2x0.5)	20236	30 V	VW-1; FT1
0036930	(2x2x0.25+2x0.5)	20236	30 V	VW-1; FT1
0036914	(9x0.5)	20236	30 V	VW-1; FT1
0036946	3x(2x0.14)+(2x0.5)	21165	300 V	HFT; FT1
0036941	3x(2x0.14)+(3x0.14)	21165	300 V	HFT; FT1
0036945	4x(2x0.14)+2x(1)	21165	300 V	HFT; FT1
0036916	(6x2x0.25+2x0.5)	20236	30 V	VW-1; FT1
0036917	(10x0.14+2x0.5)	20236	30 V	VW-1; FT1
0036918	(10x0.14+4x0.5)	20236	30 V	VW-1; FT1
0036928	(2x2x0.14+2x(2x0.14)+4x0.5+(4x0.14))	20236	30 V	VW-1; FT1
0036921	(4x2x0.25)	20236	30 V	VW-1; FT1
0036947	(5x2x0.25)	21165	300 V	HFT; FT1
0036948	(5x2x22AWG)	21165	300 V	HFT; FT1
0036940	(6x2x0.25)	21165	300 V	HFT; FT1
0036920	(4x2x0.14+4x0.5)	20236	30 V	VW-1; FT1
0036911	(3x(2x0.14)+2x(0.5))	20236	30 V	VW-1; FT1
0036931	(3x(2x0.14)+2x(1))	21165	300 V	HFT; FT1
0036932	(4x2x0.14+4x0.5+(4x0.14))	21165	300 V	HFT; FT1
0036933	(3x2x0.25+2x0.5)	21165	300 V	HFT; FT1
0036934	(5x2x0.25+2x0.5)	21165	300 V	HFT; FT1
0036935	(3x2x24AWG)	21165	300 V	HFT; FT1
0036936	(5x2x0.14+2x0.5)	21165	300 V	HFT; FT1
0036937	(2x2x0.18+5x0.5)	20549	300 V	HFT; FT1
0036938	(5x2x0.18+6x0.5)	20549	300 V	HFT; FT1
0036939	(10x2x28AWG)	20236	30 V	VW-1

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