

Hybrid servo cable | **PUR** | chainflex® CF280.UL.H

36

10 million

Guaranteed double strokes

10 x d

Bend radius e-chain®

10 m

Travel distance, e-chain®

- For medium duty applications
 - PUR outer jacket
 - Shielded
 - Oil-resistant and coolant-resistant
- Flame retardant
 - PVC and halogen-free
 - Notch-resistant
 - Hydrolysis and microbe-resistant

Dynamic information

	Bend radius	e-chain® linear	min. 10 x d
		flexible	min. 8 x d
		fixed	min. 5 x d
	Temperature	e-chain® linear	-25 °C up to +80 °C
		flexible	-40 °C up to +80 °C (following DIN EN 60811-504)
		fixed	-50 °C up to +80 °C (following DIN EN 50305)
	v max.	unsupported	10 m/s
		gliding	2 m/s
	a max.		50 m/s²
	Travel distance		Unsupported travels and up to 10 m for gliding applications, Class 2

Cable structure

	Conductor	Stranded conductor in bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	Core insulation	Mechanically high-quality, especially low-capacitance TPE mixture.
	Core structure	Power cores and control pair elements wound with a short pitch length around a high tensile strength centre element.
	Core identification	According to Servo-Hybrid specification. Latest data sheet ► www.chainflex.eu/CF220ULH
	Element shield	Bending-resistant braiding made of tinned copper wires.
	Intermediate layer	Foil taping over the outer layer.
	Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55 %, optical approx. 80 %
	Outer jacket	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Pastel orange (similar to RAL 2003) Variants ► Product range table

Electrical information

	Nominal voltage	600/1000 V (following DIN VDE 0298-3)
	Testing voltage	4000 V (following DIN EN 50395)

Properties and approvals

	UV resistance	Medium
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Basic requirements
Travel distance
Oil resistance
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400 m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

Class 4.2.3.1

	Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
	Offshore	MUD-resistant following NEK 606 - status 2009
	Flame retardant	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	Halogen-free	Following DIN EN 60754
	UL/CSA	► Product range table
	NFPA	Following NFPA 79-2018, chapter 12.9
	EAC	Certificate No. RU C-DE.ME77.B.02324 (TR ZU)
	CTP	Certificate No. C-DE.PB49.B.00420 (Fire protection)
	CEI	Following CEI 20-35
	Lead-free	Following 2011/65/EC (RoHS-II)
	Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with CF77.UL.05.12.D - tested by IPA according to standard DIN EN ISO 14644-1
	DESINA	According to VDW, DESINA standardisation
	CE	Following 2014/35/EU
	Info	As hybrid cables are always designed for specific drive systems, additional electrotechnical data may need to be considered. You will find more information in the latest datasheet for the cable series.

Guaranteed service life (details see page 22-23)

Double strokes*	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-25/-15	12.5	13.5	14.5
-15/+70	10	11	12
+70/+80	12.5	13.5	14.5

* Higher number of double strokes? Service life calculation online ► www.igus.eu/chainflexlife

Typical mechanical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 10 m for gliding applications, Class 2
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications without direct sun radiation
- Machining units/machine tools, low temperature applications



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Class 4.2.3.1

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Torsion

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none	1	2	3	4	highest			
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igus® chainflex® CF280.UL.H

Example image

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Hybrid technology	Manufacturer
Sick (Hiperface DSL) ▶ Style 10867 (11117 for AWG22) and 21223, 1000 V, 80 °C							
CF280.UL.H100.07.04.D	(4G0.75+(2x0.34)C+(2xAWG22)C)C	12.0	110	200	CF280.UL.H100.07.04.D	Sick (Hiperface DSL)	please see selection table on page 255
CF280.UL.H101.10.04.D	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.5	130	224	CF280.UL.H101.10.04.D	Sick (Hiperface DSL)	please see selection table on page 255
CF280.UL.H101.15.04.D	(4G1.5+(2x0.75)C+(2xAWG22)C)C	13.5	149	268	CF280.UL.H101.15.04.D	Sick (Hiperface DSL)	please see selection table on page 255
CF280.UL.H102.25.04.D	(4G2.5+(2x1.0)C+(2xAWG22)C)C	15.0	203	324	CF280.UL.H102.25.04.D	Sick (Hiperface DSL)	please see selection table on page 255
CF280.UL.H102.40.04.D	(4G4.0+(2x1.0)C+(2xAWG22)C)C	16.5	281	431	CF280.UL.H102.40.04.D	Sick (Hiperface DSL)	please see selection table on page 255
CF280.UL.H102.60.04.D	(4G6.0+(2x1.0)C+(2xAWG22)C)C	18.0	369	564	CF280.UL.H102.60.04.D	Sick (Hiperface DSL)	please see selection table on page 255
SEW ▶ Style 10989 and 21223, 1000 V, 80 °C							
CF280.UL.H200.15.07.D ¹⁵⁾	(7x1.5+(2x0.75)C)C	16.5	202	354	CF280.UL.H200.15.07.D ¹⁵⁾	SEW Kabeltyp A/1,5	SEW
CF280.UL.H200.25.07.D ¹⁵⁾	(7x2.5+(2x0.75)C)C	20.0	289	521	CF280.UL.H200.25.07.D ¹⁵⁾	SEW Kabeltyp A/2,5	SEW
CF280.UL.H201.15.04.D ¹⁵⁾	4G1.5+(2x0.75)C+(3x0.75)C	14.0	139	272	CF280.UL.H201.15.04.D ¹⁵⁾	SEW Kabeltyp B/1,5	SEW
CF280.UL.H201.25.04.D ¹⁵⁾	4G2.5+(2x0.75)C+(3x0.75)C	15.0	183	318	CF280.UL.H201.25.04.D ¹⁵⁾	SEW Kabeltyp B/2,5	SEW
CF280.UL.H203.15.04.D	(4G1.5+(3x1.0)C)C	12.0	158	253	CF280.UL.H203.15.04.D	SEW Kabeltyp E/1,5	SEW
CF280.UL.H203.25.04.D	(4G2.5+(3x1.0)C)C	14.0	193	310	CF280.UL.H203.25.04.D	SEW Kabeltyp E/2,5	SEW
CF280.UL.H204.15.04.D	(4G1.5+(2x0.75)C+(3x1.0)C)C	15.0	200	340	CF280.UL.H204.15.04.D	SEW Kabeltyp D/1,5	SEW
CF280.UL.H206.40.04.D	(4G4.0+(2x0.75)C+(3x1.5)C)C	18.0	339	482	CF280.UL.H206.40.04.D	SEW Kabeltyp D/4,0	SEW
CF280.UL.H206.60.04.D	(4G6.0+(2x0.75)C+(3x1.5)C)C	19.5	431	648	CF280.UL.H206.60.04.D	SEW Kabeltyp D/6,0	SEW
SINAMICS S210 ▶ Style 10867 and 20233, 300 V, 80 °C							
CF280.UL.H300.03.04.D	(4G0.34+(2x0.34)C+(4xAWG26)C)C	10.0	77	133	CF280.UL.H300.03.04.D	SINAMICS S210	Siemens (SINAMICS S210)
CF280.UL.H301.07.04.D	(4G0.75+(2x0.5)C+(4xAWG26)C)C	11.0	103	160	CF280.UL.H301.07.04.D	SINAMICS S210	Siemens (SINAMICS S210)
IndraDrive ▶ Style 10867 (0.35 mm²), 11117 (Bus element), 10989 (2.5 mm²) and 21223, 1000 V, 80 °C							
CF280.UL.H400.25.05.D	(5x2.5+(5x0.35)+(4xAWG22)C)C	17.0	240	389	CF280.UL.H400.25.05.D	IndraDrive	Bosch Rexroth (IndraDrive)
Heidenhain ▶ Style 10867 (0.14/0.25/0.75/1.0 mm²), Style 10989 (1.5/4.0 mm²) and 21223, 1000 V, 80 °C							
CF280.UL.H501.15.04.D	(4G1.5+(2x0.75)C+(2x2x0.14+2x0.25)C)C	15.0	181	281	CF280.UL.H501.15.04.D	Heidenhain	B&R
CF280.UL.H502.40.04.D	(4G4.0+(2x1.0)C+(2x2x0.14+2x0.25)C)C	17.0	295	407	CF280.UL.H502.40.04.D	Heidenhain	B&R
isH Servo ▶ Style 10867 (AWG24/0.25 mm²), Style 10989 (2.5 mm²) and 21223, 1000 V, 80 °C							
CF280.UL.H601.25.05 ¹³⁾	5G2.5+(4xAWG24)C+(2x0.25)C	14.5	158	289	CF280.UL.H601.25.05 ¹³⁾	isH Servo	ELAU/Schneider Electric (isH Servo)

¹³⁾ Colour outer jacket: Yellow-green (RAL 6018)
¹⁵⁾ Colour outer jacket: Jet black (RAL 9005)
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.
G = with green-yellow earth core x = without earth core



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