

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

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

## Dynamic information

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

## Cable structure

	<b>Conductor</b>	Stranded conductor in bending-resistant design consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core structure</b>	Power cores and control pair elements wound with a short pitch length around a high tensile strength centre element.
	<b>Core identification</b>	According to Servo Hybrid specifications. Latest datasheet: <a href="http://www.igus.eu/CF220ULH">www.igus.eu/CF220ULH</a>
	<b>Element shield</b>	Bending-resistant braiding made of tinned copper wires.
	<b>Intermediate layer</b>	Foil taping over the outer layer.
	<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage approx. 55 % linear, approx. 80 % optical
	<b>Outer jacket</b>	Low-adhesion, 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)

## Electrical information

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

# Class 4.2.3.1

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	> 400 m
Oil resistance	none	1	2	3	4	5	6	7	highest
Torsion	none	1	2	3	4	5	6	7	±180°

## Properties and approvals

	<b>UV resistance</b>	Medium.
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3.
	<b>Offshore</b>	MUD-resistant following NEK 606 - status 2009.
	<b>Flame retardant</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>Halogen-free</b>	Following DIN EN 60754.
	<b>UL/CSA</b>	Style 10989 and 21223, 1000 V, 80 °C
	<b>NFFPA</b>	Following NFPA 79-2012 chapter 12.9.
	<b>EAC</b>	Certificate no. RU C-DE.ME77.B.02324 (TR ZU)
	<b>CTP</b>	Certificate no. C-DE.PB49.B.00420 (Fire safety)
	<b>CEI</b>	Following CEI 20-35.
	<b>Lead-free</b>	Following 2011/65/EU (RoHS-II).
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27.07.05.02.01.D, tested by IPA according to standard 14644-1.
	<b>DESINA</b>	According to VDW, DESINA standardisation.
	<b>CE</b>	Following 2014/35/EU.

## Guaranteed lifetime according to guarantee conditions (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? Online lifetime calculation: [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical mechanical application areas

- For medium duty applications
- Almost unlimited resistance to oil
- Indoor and outdoor applications without direct solar radiation
- Unsupported travel distances and up to 10 m for gliding applications
- Machining units/machine tools, low temperature applications



igus® chainflex® CF280.UL.H

Example image

Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Copper index	Weight	Part No.	Hybrid technology	Manufacturer
	mm <sup>2</sup>	mm	kg/km	kg/km			
CF280.UL.H100.07.04.D	(4G0.75+(2x0.34)C +(2xAWG22)C)C	12.0	117	207	CF280.UL.H100.07.04.D	Sick (Hiperface DSL)	please see selection table on page 249
CF280.UL.H101.10.04.D	(4G1.0+(2x0.75)C +(2xAWG22)C)C	12.5	139	233	CF280.UL.H101.10.04.D	Sick (Hiperface DSL)	please see selection table on page 249
CF280.UL.H101.15.04.D	(4G1.5+(2x0.75)C +(2xAWG22)C)C	13.5	159	278	CF280.UL.H101.15.04.D	Sick (Hiperface DSL)	please see selection table on page 249
CF280.UL.H102.25.04.D	(4G2.5+(2x1.0)C +(2xAWG22)C)C	15.0	217	338	CF280.UL.H102.25.04.D	Sick (Hiperface DSL)	please see selection table on page 249
CF280.UL.H102.60.04.D	(4G6.0+(2x1.0)C +(2xAWG22)C)C	18.0	394	589	CF280.UL.H102.60.04.D	Sick (Hiperface DSL)	please see selection table on page 249
CF280.UL.H200.15.07.D	(7x1.5+(2x0.75)C)C	16.5	216	368	CF280.UL.H200.15.07.D	SEW Cable type A/1,5	SEW
CF280.UL.H200.25.07.D	(7x2.5+(2x0.75)C)C	20.0	308	540	CF280.UL.H200.25.07.D	SEW Cable type A/2,5	SEW
CF280.UL.H201.15.04.D	4G1.5+(2x0.75)C +(3x0.75)C	14.0	148	281	CF280.UL.H201.15.04.D	SEW Cable type B/1,5	SEW
CF280.UL.H201.25.04.D	4G2.5+(2x0.75)C +(3x0.75)C	15.0	195	330	CF280.UL.H201.25.04.D	SEW Cable type B/2,5	SEW
CF280.UL.H203.15.04.D	(4G1.5+(3x1.0)C)C	12.0	169	264	CF280.UL.H203.15.04.D	SEW Cable type E/1,5	SEW
CF280.UL.H203.25.04.D	(4G2.5+(3x1.0)C)C	14.0	206	323	CF280.UL.H203.25.04.D	SEW Cable type E/2,5	SEW
CF280.UL.H204.15.04.D	(4G1.5+(2x0.75)C +(3x1.0)C)C	15.0	214	354	CF280.UL.H204.15.04.D	SEW Cable type D/1,5	SEW
CF280.UL.H206.60.04.D	(4G6.0+(2x0.75)C +(3x1.5)C)C	19.5	460	677	CF280.UL.H206.60.04.D	SEW Cable type D/6,0	SEW
CF280.UL.H400.25.05.D	(5x2.5+(5x0.35) +(4x0.35)C)C	17.0	257	406	CF280.UL.H400.25.05.D	IndraDrive	Bosch Rexroth
CF280.UL.H501.15.04.D	(4G1.5+(2x0.75)C +(2x2x0.14+2x0.25)C)C	15.0	193	293	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	315	427	CF280.UL.H502.40.04.D	Heidenhain	B&R
CF280.UL.H601.25.05 <sup>6)</sup>	5G2.5+(4xAWG24)C +(2x0.25)C	14.5	169	300	CF280.UL.H601.25.05 <sup>6)</sup>	isH Servo	ELAU/Schneider Electric

<sup>6)</sup> Colour outer jacket: Yellow-green (similar to RAL 6018)  
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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