PVC | iguPUR | **PUR** | TPE

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

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

Example image

igus® chainflex® CF280.UL.H

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 ≥ 400 m
Oil resistance	none 1 2 **3** 4 highest
Torsion	none **1** 2 3 4 ±360°

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

CF280.UL.H
PUR
10 x d

Guarantee igus chainflex 36 month guarantee

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

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	≥ 400 m	
Oil resistance	none	1	2	**3**	4	highest			
Torsion	none	**1**	2	3	4	±360°			

CF280.UL.H
PUR
10 x d

Example image

Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Copper index	Weight	Part No.	Hybrid technology	Manufacturer
	[mm²]	[mm]	[kg/km]	[kg/km]			
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