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

Example image

10,000,000 Cycles guaranteed

10 x d Bend radius E-Chain®

32.8 ft Travel distance E-Chain®

- For medium mechanical load requirements
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant
- Variable Frequency Drives

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**	-13 °F to +176 °F (-25 °C to +80 °C)
	flexible	-40 °F to +176 °F (-40 °C to +80 °C)
	fixed	-58 °F to +176 °F (-50 °C to +80 °C)
v max.	**unsupported**	32.81 ft/s (10 m/s)
	gliding	6.56 ft/s (2 m/s)
a max.		164.1 ft/s² (50 m/s²)
Travel distance		Unsupported travel distances and for gliding applications up to 32.8 ft (10 m), Class 2

Cable structure

Conductor	Stranded conductor in bending-resistant version consisting of bare copper wires (following DIN EN 60228).
Conductor insulation	Mechanically high-quality, especially low-capacitance XLPE mixture.
Conductor construction	Power cores and control pair elements wound with a short pitch length around a high tensile strength centre element.
Color code	According to Servo-Hybrid specification. Latest data sheet ▶ www.chainflex.com/CF280ULH
Element shield	Bending-resistant tinned copper braid. 80% optical coverage
Intermediate layer	Polyester tape over external layer
Overall shield	Bending-resistant tinned copper braid. 80 % optical coverage
Outer jacket	Low-adhesion, halogen-free, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN EN 50363-10-2). Color: Orange (similar to RAL 2003) Variants ▶ See P/N Table

Electrical Information

Nominal voltage	1000 V
Test voltage	4000 V (following DIN EN 50395)

Configurators ▶ www.igus.com/CF280-UL-H

36 month guarantee ... 1,354 types from stock ... no cutting charges

CF280-UL-H
PUR
10 x d

Basic requirements	low	1	2	3	**4**	5	6	7	highest
Travel distance	unsupported	1	**2**	3	4	5	6	≥ 1312 ft	
Oil resistance	none	1	2	**3**	4	highest			
Torsion	none	**1**	2	3	4	±360°			

Class 4.2.3.1

Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
Offshore	MUD-resistant following NEK 606 - status 2009
Flame resistance	According to IEC 60332-1-2, 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 verified	Certificate No. B129699: igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year
UL/CSA AWM	1000 V, +80C See data sheet for details ▶ www.igus.com/CF280-UL-H
NFPA 79	Complies to Electrical Standard for Industrial Machinery NFPA 79 Section 12.9
EAC	Certificate No. RU C-DE.ME77.B.02324 (TR ZU)
CTP	Certificate No. C-DE.PB49.B.00420 (Fire protection)
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
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 standardization.
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 26-27)

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°F]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-13/+5	12.5	13.5	14.5
+5/+158	10	11	12
+158/+176	12.5	13.5	14.5

* Higher number of cycles? Online lifetime calculation ▶ www.chainflex.com/chainflexlife

Typical application areas

- For medium mechanical load requirements, Class 4
- Unsupported travel distances and for gliding applications up to 33 ft (10 m), Class 2
- Almost unlimited resistance to oil, Class 3
- Indoor and outdoor applications without direct sun radiation
- Machining units/machine tools, low temperature applications

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 ≥ 1312 ft
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.	AWG	Number of Conductors and rated cross section	Outer diameter max.		Copper index		Weight		Part No.	Hybrid technology	Manufacturer
		[mm²]	[in.]	[mm]	lbs/mft	[kg/km]	lbs/mft	[kg/km]			
Sick (Hiperface DSL)											
CF280-UL-H100-07-04-D	18	4 G 0.75	0.47	12.0	73.9	110	134.4	200	**CF280-UL-H100-07-04-D**	Sick (Hiperface DSL)	please see selection table on page 267
	22	2 x 0.34 SHLD									
	22	1 STP x 22 AWG									
CF280-UL-H101-10-04-D	17	4 G 1.0	0.47	12.0	89.4	133	137.8	205	**CF280-UL-H101-10-04-D**	Sick (Hiperface DSL)	please see selection table on page 267
	18	2 x 0.75 SHLD									
	22	1 STP x 22 AWG									
CF280-UL-H101-15-04-D	16	4 G 1.5	0.51	13.0	104.8	156	144.5	215	**CF280-UL-H101-15-04-D**	Sick (Hiperface DSL)	please see selection table on page 267
	18	2 x 0.75 SHLD									
	22	1 STP x 22 AWG									
CF280-UL-H102-25-04-D	14	4 G 2.5	0.57	14.5	136.4	203	217.7	324	**CF280-UL-H102-25-04-D**	Sick (Hiperface DSL)	please see selection table on page 267
	17	2 x 1.0 SHLD									
	22	1 STP x 22 AWG									
CF280-UL-H102-40-04-D	12	4 G 4.0	0.65	16.5	188.8	281	289.6	431	**CF280-UL-H102-40-04-D**	Sick (Hiperface DSL)	please see selection table on page 267
	17	2 x 1.0 SHLD									
	22	1 STP x 22 AWG									
CF280-UL-H102-60-04-D	10	4 G 6.0	0.69	17.5	244.6	364	335.3	499	**CF280-UL-H102-60-04-D**	Sick (Hiperface DSL)	please see selection table on page 267
	17	2 x 1.0 SHLD									
	22	1 STP x 22 AWG									
SEW											
CF280-UL-H200-15-07-D [15)]	16	7 x 1.5	0.63	16.0	135.7	202	237.9	354	**CF280-UL-H200-15-07-D** [15)]	SEW Kabeltyp A/1,5	SEW
	18	2 x 0.75 SHLD									
CF280-UL-H200-25-07-D [15)]	14	7 x 2.5	0.79	20.0	194.2	289	350.1	521	**CF280-UL-H200-25-07-D** [15)]	SEW Kabeltyp A/2,5	SEW
	18	2 x 0.75 SHLD									
CF280-UL-H201-15-04-D [15)]	16	4 G 1.5	0.55	14.0	93.4	139	182.8	272	**CF280-UL-H201-15-04-D** [15)]	SEW Kabeltyp B/1,5	SEW
	18	2 x 0.75 SHLD									
	18	3 x 0.75 SHLD									
CF280-UL-H201-25-04-D [15)]	14	4 G 2.5	0.57	14.5	123.0	183	213.7	318	**CF280-UL-H201-25-04-D** [15)]	SEW Kabeltyp B/2,5	SEW
	18	2 x 0.75 SHLD									
	18	3 x 0.75 SHLD									
CF280-UL-H203-15-04-D	16	4 G 1.5	0.47	12.0	106.2	158	170.0	253	**CF280-UL-H203-15-04-D**	SEW Kabeltyp E/1,5	SEW
	17	3 x 1.0 SHLD									
CF280-UL-H203-25-04-D	14	4 G 2.5	0.53	13.5	132.4	197	186.1	277	**CF280-UL-H203-25-04-D**	SEW Kabeltyp E/2,5	SEW
	17	3 x 1.0 SHLD									
CF280-UL-H204-15-04-D	16	4 G 1.5	0.59	15.0	134.4	200	228.5	340	**CF280-UL-H204-15-04-D**	SEW Kabeltyp D/1,5	SEW
	18	2 x 0.75 SHLD									
	17	3 x 1.0 SHLD									
CF280-UL-H206-40-04-D	12	4 G 4.0	0.69	17.5	227.8	339	323.9	482	**CF280-UL-H206-40-04-D**	SEW Kabeltyp D/4,0	SEW
	18	2 x 0.75 SHLD									
	16	3 x 1.5 SHLD									
CF280-UL-H206-60-04-D	10	4 G 6.0	0.75	19.0	289.6	431	435.4	648	**CF280-UL-H206-60-04-D**	SEW Kabeltyp D/6,0	SEW
	18	2 x 0.75 SHLD									
	16	3 x 1.5 SHLD									

[15)] Color outer jacket: Black (similar to RAL 9005)
Note: The given outer diameters are maximum values.
G = with green-yellow earth core **x =** without earth core

Configurators ▶ www.igus.com/CF280-UL-H

Other types ▶ page 298

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	≥ 1312 ft	
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.	AWG	Number of Conductors and rated cross section	Outer diameter max.		Copper index		Weight		Part No.	Hybrid technology	Manufacturer
		[mm²]	[in.]	[mm]	lbs/mft	[kg/km]	lbs/mft	[kg/km]			
SINAMICS S210											
CF280-UL-H300-03-04-D	22	4 G 0.34	0.39	10.0	49.7	74	93.4	139	**CF280-UL-H300-03-04-D**	SINAMICS S210	Siemens
	22	2 x 0.34 SHLD									
	26	4 x 26 AWG SHLD									
CF280-UL-H301-07-04-D	18	4 G 0.75	0.43	11.0	67.2	100	113.6	169	**CF280-UL-H301-07-04-D**	SINAMICS S210	Siemens
	20	2 x 0.5 SHLD									
	26	4 x 26 AWG SHLD									
IndraDrive											
CF280-UL-H400-25-05-D	14	5 x 2.5	0.67	17.0	161.3	240	261.4	389	**CF280-UL-H400-25-05-D**	IndraDrive	Bosch Rexroth
	22	5 x 0.35									
	22	4 x 0.35 SHLD									
Heidenhain											
CF280-UL-H501-15-04-D	16	4 G 1.5	0.59	15.0	121.6	181	188.8	281	**CF280-UL-H501-15-04-D**	Heidenhain	B&R
	18	2 x 0.75 SHLD									
	26	(2x2x0,14)C									
	24	2 x 0.25 SHLD									
CF280-UL-H502-40-04-D	12	4 G 4.0	0.65	16.5	198.2	295	273.5	407	**CF280-UL-H502-40-04-D**	Heidenhain	B&R
	17	(2x1,0)C									
	26	(2x2x0,14)C									
	24	2 x 0.25 SHLD									
isH Servo											
CF280-UL-H601-25-05 [13)]	14	5 G 2.5	0.57	14.5	106.2	158	194.2	289	**CF280-UL-H601-25-05** [13)]	isH Servo	ELAU/Schneider Electric
	24	(4G 24 AWG)C									
	24	2 x 0.25 SHLD									

[13)] Color outer jacket: Yellow-green (similar to RAL 6018)
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth conductor **x =** without earth conductor

Other types ▶ page 296

Configurators ▶ www.igus.com/CF280-UL-H