

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



**10 million**  
Double strokes guaranteed



**10 x d**  
Bend radius, e-chain®



**10m**  
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

New cable suitable for Bosch Rexroth ctrIX DRIVE

## 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 up to +80°C
		<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
		<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10m/s
		<b>gliding</b>	2m/s
	<b>a max.</b>		50m/s <sup>2</sup>
	<b>Travel distance</b>		Unsupported travels and up to 10m for gliding applications, Class 2

## Cable structure

	<b>Conductor</b>	Stranded conductor in bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE 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 specification. Current data sheet ► <a href="http://www.chainflex.eu/CF220ULH">www.chainflex.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 linear approx. 55%, optical approx. 80%
	<b>Outer jacket</b>	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 ► <a href="#">Product range table</a>

## Electrical information

	<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL) Variants ► <a href="#">Product range table</a>
	<b>Testing voltage</b>	4,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

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

## Class 4.2.3.1

### 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 2016
	<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
	<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 verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
	<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF280ULH">www.igus.eu/CF280ULH</a>
	<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
	<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
	<b>Cleanroom</b>	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
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EU
	<b>UK CA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)
	<b>Info</b>	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 data sheet for the cable series.

### Guaranteed service life (details see page 28-29)

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](http://www.igus.eu/chainflexlife)

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 10m 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



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



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]
<b>SICK (HIPERFACE DSL)</b>				
CF280.UL.H100.07.04.D	(4G0.75+(2x0.34)C+(2xAWG22)C)C	12.0	110	200
CF280.UL.H101.10.04.D	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	133	205
CF280.UL.H101.15.04.D	(4G1.5+(2x0.75)C+(2xAWG22)C)C	13.0	156	215
CF280.UL.H102.25.04.D	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	203	324
CF280.UL.H102.40.04.D <sup>11)</sup>	(4G4.0+(2x1.0)C+(2xAWG22)C)C	16.5	281	431
CF280.UL.H102.60.04.D	(4G6.0+(2x1.0)C+(2xAWG22)C)C	17.5	364	499
<b>SEW cable type A, B, C, D, E</b>				
CF280.UL.H200.15.07.D <sup>15)</sup>	(7x1.5+(2x0.75)C)C	16.0	202	354
CF280.UL.H200.25.07.D <sup>15)</sup>	(7x2.5+(2x0.75)C)C	20.0	289	521
CF280.UL.H201.15.04.D <sup>15)</sup>	4G1.5+(2x0.75)C+(3x0.75)C	14.0	139	272
CF280.UL.H201.25.04.D <sup>15)</sup>	4G2.5+(2x0.75)C+(3x0.75)C	14.5	183	318
CF280.UL.H203.15.04.D	(4G1.5+(3x1.0)C)C	12.0	158	253
CF280.UL.H203.25.04.D	(4G2.5+(3x1.0)C)C	13.5	197	277
CF280.UL.H204.15.04.D	(4G1.5+(2x0.75)C+(3x1.0)C)C	15.0	200	340
CF280.UL.H206.40.04.D	(4G4.0+(2x0.75)C+(3x1.5)C)C	17.5	339	482
CF280.UL.H206.60.04.D	(4G6.0+(2x0.75)C+(3x1.5)C)C	19.0	431	648
<b>MOVILINK DDI</b>				
CF280.UL.H207.15.04.D	(4G1.5+2x(2x1.0)C+HF50-0.9/2.95)C	15.5	191	303
CF280.UL.H207.25.04.D	(4G2.5+2x(2x1.0)C+HF50-0.9/2.95)C	16.5	232	351

<sup>11)</sup> Phase-out model  
<sup>15)</sup> 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

Class 4.2.3.1

Part No.	Hybrid technology	Hybrid manufacturer
<b>SICK (HIPERFACE DSL)</b>		
CF280.UL.H100.07.04.D	SICK (HIPERFACE DSL)	please see selection table on page 278
CF280.UL.H101.10.04.D	SICK (HIPERFACE DSL)	please see selection table on page 278
CF280.UL.H101.15.04.D	SICK (HIPERFACE DSL)	please see selection table on page 278
CF280.UL.H102.25.04.D	SICK (HIPERFACE DSL)	please see selection table on page 278
CF280.UL.H102.40.04.D <sup>11)</sup>	SICK (HIPERFACE DSL)	please see selection table on page 278
CF280.UL.H102.60.04.D	SICK (HIPERFACE DSL)	please see selection table on page 278
<b>SEW cable type A, B, C, D, E</b>		
CF280.UL.H200.15.07.D <sup>15)</sup>	SEW cable type A/1.5	SEW
CF280.UL.H200.25.07.D <sup>15)</sup>	SEW cable type A/2.5	SEW
CF280.UL.H201.15.04.D <sup>15)</sup>	SEW cable type B/1.5	SEW
CF280.UL.H201.25.04.D <sup>15)</sup>	SEW cable type B/2.5	SEW
CF280.UL.H203.15.04.D	SEW cable type E/1.5	SEW
CF280.UL.H203.25.04.D	SEW cable type E/2.5	SEW
CF280.UL.H204.15.04.D	SEW cable type D/1.5	SEW
CF280.UL.H206.40.04.D	SEW cable type D/4.0	SEW
CF280.UL.H206.60.04.D	SEW cable type D/6.0	SEW
<b>MOVILINK DDI</b>		
CF280.UL.H207.15.04.D	MOVILINK DDI	SEW
CF280.UL.H207.25.04.D	MOVILINK DDI	SEW

Further cable types ► Page 310

EPLAN download, configurators ► [www.igus.eu/CF280ULH](http://www.igus.eu/CF280ULH)



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

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

Basic requirements  
Travel distance  
Oil resistance  
Torsion

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

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]
<b>SINAMICS S210</b>				
CF280.UL.H300.03.04.D	(4G0.34+(2x0.34)C+(4xAWG26)C)C	10.0	74	139
CF280.UL.H301.07.04.D	(4G0.75+(2x0.5)C+(4xAWG26)C)C	11.0	100	169
CF280.UL.H304.15.04.D	(4G1.5+(2x1.5)C+(4xAWG26)C)C	13.0	170	240
CF280.UL.H304.25.04.D	(4G2.5+(2x1.5)C+(2xAWG26)C)C	14.5	215	289
<b>IndraDrive</b>				
CF280.UL.H400.25.05.D	(5x2.5+(5x0,35)+(4xAWG22)C)C	17.0	240	389
<b>ctrlX DRIVE</b>				
New CF280.UL.H401.07.04.D	(4G0.75+(2x0.5)C+(4xAWG24)C)C	13.0	144	220
<b>HEIDENHAIN</b>				
CF280.UL.H501.15.04.D	(4G1.5+(2x0.75)C+(2x2x0.14+2x0.25)C)C	15.0	181	281
CF280.UL.H502.40.04.D	(4G4.0+(2x1.0)C+(2x2x0.14+2x0.25)C)C	16.5	295	407

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

Further cable types ► Page 308



Cables available in the chainflex® CASE

Simple savings on delivery, storage space and re-ordering with the chainflex® CASE - ship'n store by igus®.

More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



Class 4.2.3.1

Part No.	Hybrid technology	Hybrid manufacturer
<b>SINAMICS S210</b>		
CF280.UL.H300.03.04.D	SINAMICS S210	Siemens
CF280.UL.H301.07.04.D	SINAMICS S210	Siemens
CF280.UL.H304.15.04.D	SINAMICS S210	Siemens
CF280.UL.H304.25.04.D	SINAMICS S210	Siemens
<b>IndraDrive</b>		
CF280.UL.H400.25.05.D	IndraDrive	Bosch Rexroth
<b>ctrlX DRIVE</b>		
CF280.UL.H401.07.04.D	ctrlX DRIVE	Bosch Rexroth
<b>HEIDENHAIN</b>		
CF280.UL.H501.15.04.D	HEIDENHAIN	B&R
CF280.UL.H502.40.04.D	HEIDENHAIN	B&R

Order example: **CF280.UL.H101.10.04** – to your desired length (0.5m steps)  
CF280.UL.H chainflex® series .101.10.04 Code hybrid bus element

Order online ► [www.igus.eu/CF280ULH](http://www.igus.eu/CF280ULH)

Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

EPLAN download, configurators ► [www.igus.eu/CF280ULH](http://www.igus.eu/CF280ULH)