

Data sheet

chainflex® CF280.UL.H



Hybrid servo cable (Class 4.2.3.1) ● 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



SICK (HIPERFACE DSL)	SEW-EURODRIVE	SINAMICS S210
CF280.UL.H100.07.04.D- CF280.UL.H102.60.04.D	CF280.UL.H200.15.07.D- CF280.UL.H207.25.04.D	CF280.UL.H300.03.04.D- CF280.UL.H304.25.04.D
IndraDrive	ctrlX DRIVE	HEIDENHAIN
CF280.UL.H400.25.05.D	CF280.UL.H401.07.04.D- CF280.UL.H402.15.04.D	CF280.UL.H501.15.04.D- CF280.UL.H502.40.04.D



igus 4-year
chainflex cable
guarantee and
service life
calculator based
on 2 billion test
cycles per year



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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 XLPE mixture. CF280.UL.H3xx: 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 approx. 55 % linear, approx. 80 % optical
	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) Printing: black

„00000 m** igus chainflex CF280.UL.-.-.-.D① ---②③ E310776

cRUus AWM Style ④ VW-1 AWM I/II A/B 80°C ⑤ FT1 EAC/CTP CE UKCA

DESINA RoHS-II conform www.igus.eu +++ chainflex cable works +++

* **Length printing:** Not calibrated. Only intended as an orientation aid.

① / ② Cable identification according to Part No. (see technical table).

③ Printing of nominal voltage (see general electrical values).

④ / ⑤ Printing of the UL Style / Voltage (see related chapter).

Bsp.: ... chainflex ... CF280.UL.H200.15.07.D ... (7x1.5+(2x0.75)C)C ... 600/1000V ...



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Dynamic information

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

These values are based on specific applications or tests. They do not represent the limit of what is technically feasible.

Guaranteed service life according to guarantee conditions

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

Minimum guaranteed service life of the cable under the specified conditions.
 The installation of the cable is recommended within the middle temperature range.

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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 2016
	Flame retardant	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
	Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	Halogen-free	Following DIN EN 60754
	PTFE-free	This cable does not contain PTFE
	UL verified	Certificate No. V293560: „igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
	UL/CSA AWM	See table UL/CSA AWM for details
	NFPA	Following NFPA 79-2018, chapter 12.9
	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. UL05.12.D - tested by IPA according to standard DIN EN ISO 14644-1
	DESINA	According to VDW, DESINA standardisation
	CE	Following 2014/35/EU



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Properties and approvals

UL/CSA AWM Details

Part No.	UL style core insulation	UL style outer jacket	UL Voltage Rating [V]	UL Temperature Rating [°C]
CF280.UL.H10x.xx.xx.D	3646 11807 (AWG22)	21223	1000	80
CF280.UL.H20x.xx.xx.D	3646 11117 (HF50-0.9/2.95)	21223	1000	80
CF280.UL.H300.xx.xx.D	10467	20233	300	80
CF280.UL.H301.xx.xx.D	11602 (AWG26)			
CF280.UL.H304.xx.xx.D	10492 11117 (AWG26)	21223	1000	80
CF280.UL.H40x.xx.xx.D	3646 (0.35/0.5/0.75/2.5 mm²) 11117 (AWG24/AWG22)	21223	1000	80
CF280.UL.H50x.xx.xx.D	3646 10867 (0.14/0.25/0.75/1.0 mm²)	21223	1000	80

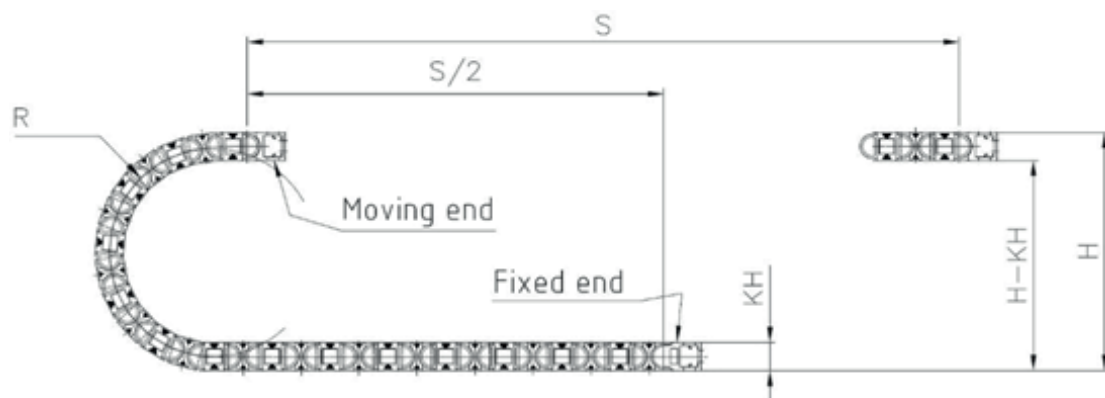


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Typical lab test setup for this cable series

Test bend radius R	approx. 125 - 175 mm
Test travel S	approx. 1 - 15 m
Test duration	minimum 2 - 4 million double strokes
Test speed	approx. 0.5 - 2 m / s
Test acceleration	approx. 0.5 - 1.5 m / s²



Typical application areas

- For medium duty applications, Class 4
- Unsupported travel distances 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 solar radiation
- Machining units/machine tools, low temperature applications

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Technical tables:

Mechanical information

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
SICK (HIPERFACE DSL)				
CF280.UL.H100.07.04.D	(4G0.75+(2x0.34)C)+(2xAWG22)C)C	12.0	106	168
CF280.UL.H101.10.04.D	(4G1.0+(2x0.75)C)+(2xAWG22)C)C	12.5	129	202
CF280.UL.H101.15.04.D	(4G1.5+(2x0.75)C)+(2xAWG22)C)C	13.0	151	228
CF280.UL.H102.25.04.D	(4G2.5+(2x1.0)C)+(2xAWG22)C)C	14.5	199	291
CF280.UL.H102.40.04.D	(4G4.0+(2x1.0)C)+(2xAWG22)C)C	16.0	268	363
CF280.UL.H102.60.04.D	(4G6.0+(2x1.0)C)+(2xAWG22)C)C	17.5	343	475
SEW Kabeltyp A, B, C, D, E				
CF280.UL.H200.15.07.D ¹⁵⁾	(7x1.5+(2x0.75)C)C	15.0	182	266
CF280.UL.H200.25.07.D ¹⁵⁾	(7x2.5+(2x0.75)C)C	18.0	263	368
CF280.UL.H201.15.04.D ^{5) 15)}	4G1.5+(2x0.75)C+(3x0.75)C	12.5	132	210
CF280.UL.H201.25.04.D ^{5) 15)}	4G2.5+(2x0.75)C+(3x0.75)C	14.5	170	270
CF280.UL.H203.15.04.D	(4G1.5+(3x1.0)C)C	11.5	133	200
CF280.UL.H203.25.04.D	(4G2.5+(3x1.0)C)C	13.0	177	262
CF280.UL.H204.15.04.D	(4G1.5+(2x0.75)C)+(3x1.0)C)C	13.5	178	263
CF280.UL.H206.40.04.D	(4G4.0+(2x0.75)C)+(3x1.5)C)C	17.0	311	424
CF280.UL.H206.60.04.D	(4G6.0+(2x0.75)C)+(3x1.5)C)C	18.5	398	517
MOVILINK DDI				
CF280.UL.H207.15.04.D	(4G1.5+2x(2x1.0)C)+HF50-0.9/2.95)C	15.5	191	304
CF280.UL.H207.25.04.D	(4G2.5+2x(2x1.0)C)+HF50-0.9/2.95)C	16.5	232	354
SINAMICS S210				
CF280.UL.H300.03.04.D	(4G0.34+(2x0.34)C)+(4xAWG26)C)C	10.0	78	130
CF280.UL.H301.07.04.D	(4G0.75+(2x0.5)C)+(4xAWG26)C)C	11.0	99	151
CF280.UL.H304.15.04.D	(4G1.5+(2x1.5)C)+(4xAWG26)C)C	13.0	159	236
CF280.UL.H304.25.04.D	(4G2.5+(2x1.5)C)+(4xAWG26)C)C	14.5	205	286
IndraDrive				
CF280.UL.H400.25.05.D	(5x2.5+(5x0.35)+(4xAWG22)C)C	15.5	222	338
ctrlX DRIVE				
CF280.UL.H401.07.04.D	(4G0.75+(2x0.5)C)+(4xAWG24)C)C	12.5	106	193
CF280.UL.H402.15.04.D	(4G1.5+(2x0.75)C)+(4xAWG24)C)C	13.5	147	235
Heidenhain				
CF280.UL.H501.15.04.D	(4G1.5+(2x0.75)C)+(2x2x0.14+2x0.25)C)C	13.5	150	240
CF280.UL.H502.40.04.D	(4G4.0+(2x1.0)C)+(2x2x0.14+2x0.25)C)C	16.5	266	378

⁵⁾ manufactured without overall shield

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



igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



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Technical tables:

Electrical information

Conductor nominal cross section [mm²]	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km]	Max. current rating at 30 °C [A]
0.14	138	2.5
0.15 (AWG26)	131	2.5
0.25	81	5
0.34 (AWG22)	59	7
0.35	56	7
0.5	41	11
0.75	26	14
1	19.5	17
1.5	13.3	21
2.5	8	30
4	4.95	41
6	3.3	53

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.



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Capacity

Part No.	Control cores		Power cores	
	Core/Core Capacity [approx. pF / m]	Core/Shield Capacity [approx. pF / m]	Core/Core Capacity [approx. pF / m]	Core/Shield Capacity [approx. pF / m]
SICK (HIPERFACE DSL)				
CF280.UL.H100.07.04.D	60	105	75	130
CF280.UL.H101.10.04.D	95	155	100	175
CF280.UL.H101.15.04.D	80	140	100	175
CF280.UL.H102.25.04.D	105	185	120	210
CF280.UL.H102.40.04.D	125	220	115	205
CF280.UL.H102.60.04.D	120	210	120	210
SEW Kabeltyp A, B, C, D, E				
CF280.UL.H200.15.07.D	80	140	100	175
CF280.UL.H200.25.07.D	110	195	105	185
CF280.UL.H201.15.04.D	80	140	100	175
CF280.UL.H201.25.04.D	105	185	100	175
CF280.UL.H203.15.04.D	80	140	100	175
CF280.UL.H203.25.04.D	105	185	100	175
CF280.UL.H204.15.04.D	80	140	100	175
CF280.UL.H206.40.04.D	125	220	105	185
CF280.UL.H206.60.04.D	120	210	120	210
MOVILINK DDI				
CF280.UL.H207.15.04.D	85	155	100	180
CF280.UL.H207.25.04.D	95	170	100	180
SINAMICS S210				
CF280.UL.H300.03.04.D	60	105	85	155
CF280.UL.H301.07.04.D	70	140	90	155
CF280.UL.H304.15.04.D	90	155	135	245
CF280.UL.H304.25.04.D	95	170	135	245
IndraDrive				
CF280.UL.H400.25.05.D	110	195	55	85
ctrlX DRIVE				
CF280.UL.H401.07.04.D	65	135	85	150
CF280.UL.H402.15.04.D	80	140	100	175
HEIDENHAIN				
CF280.UL.H501.15.04.D	85	150	105	185
CF280.UL.H502.40.04.D	120	210	95	180



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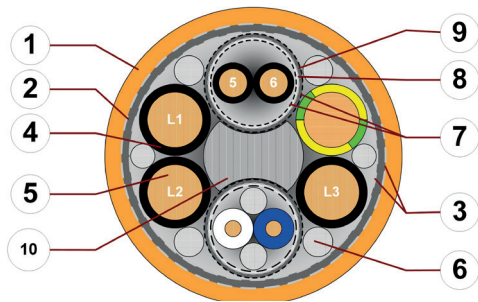
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Sick (Hiperface DSL)

CF280.UL.H100.07.04.D-CF280.UL.H102.60.04.D



Example image

For detailed overview please see design table

1. Outer jacket: Pressure extruded PUR mixture
2. Overall shield: Extremely bending-stable braid made of tinned copper wires
3. Banding: Plastic fleece
4. Core insulation: Mechanically high-quality, especially low-capacitance XLPE mixture
5. Conductor: Especially bending-resistant version consisting of bare copper wires
6. Filling: Plastic yarns
7. Element banding: Plastic foil
8. Shield foil: Aluminium-coated polyester foil
9. Element shield: Bending-resistant braiding made of tinned copper wires
10. Strain relief: Tensile stress-resistant centre element

Electrical information

Bus element	Hiperface DSL
Characteristic wave impedance (following DIN EN 50289-1-11)	$110 \pm 10 \Omega$ (10 MHz)
Operating capacity	45 pF/m

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

Details UL approval

UL/CSA	Cores 0.34/0.75/1.0/1.5/2.5/4.0/6.0: Style 3646 (1000 V, 80 °C) Cores AWG22: Style 11807 (1000 V, 80 °C) Cable: Style 21223 (1000 V, 80 °C)
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Design table

Part No.	Core group	Colour code	Core design
CF280.UL.H100.07.04.D	4G0.75	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x0.34)C	2 black cores with white numbers 5 & 6	
	(2xAWG22)C/C	one core each in white and blue	



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Sick (Hiperface DSL)

CF280.UL.H100.07.04.D-CF280.UL.H102.60.04.D

Design table

(continued)

Part No.	Core group	Colour code	Core design
CF280.UL.H101.10.04.D	4G1.0	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x0.75)C	2 black cores with white numbers 5 & 6	
	(2xAWG22)C/C	one core each in white and blue	
CF280.UL.H101.15.04.D	4G1.5	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x0.75)C	2 black cores with white numbers 5 & 6	
	(2xAWG22)C/C	one core each in white and blue	
CF280.UL.H102.25.04.D	4G2.5	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x1.0)C	2 black cores with white numbers 5 & 6	
	(2xAWG22)C/C	one core each in white and blue	
CF280.UL.H102.40.04.D	4G4.0	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x1.0)C	2 black cores with white numbers 5 & 6	
	(2xAWG22)C	one core each in white and blue	
CF280.UL.H102.60.04.D	4G6.0	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x1.0)C	2 black cores with white numbers 5 & 6	
	(2xAWG22)C	one core each in white and blue	



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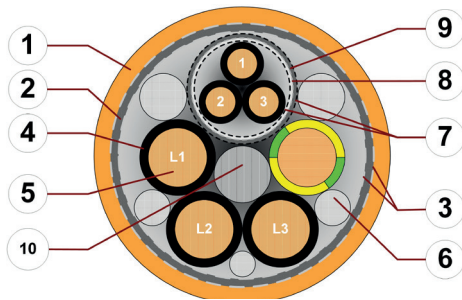
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SEW-EURODRIVE

CF280.UL.H200.15.07.D-CF280.UL.H207.25.04.D



Example image

For detailed overview please see design table

1. Outer jacket: Pressure extruded PUR mixture
2. Overall shield: Extremely bending-stable braid made of tinned copper wires
3. Banding: Plastic fleece
4. Core insulation: Mechanically high-quality, especially low-capacitance XLPE mixture
5. Conductor: Especially bending-resistant version consisting of bare copper wires
6. Filling: Plastic yarns
7. Element banding: Plastic foil
8. Shield foil: Aluminium-coated polyester foil
9. Element shield: Bending-resistant braiding made of tinned copper wires
10. Strain relief: Tensile stress-resistant centre element

Electrical information

Coaxial element	SEW-EURODRIVE MOVILINK® DDI
Characteristic wave impedance (following DIN EN 50289-1-11)	$50 \pm 5 \Omega$ (200 MHz)
Operating capacity	100 pF/m (800 kHz)

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

Details UL approval

UL/CSA	Cores 0.75/1.0/1.5/2.5/4.0/6.0: Style 3646 (1000 V, 80 °C) HF50-0.9/2.95: Style 11117 (1000 V, 80 °C) Cable: Style 21223 (1000 V, 80 °C)
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SEW-EURODRIVE

CF280.UL.H200.15.07.D-CF280.UL.H207.25.04.D

Design table

Part No.	Core group	Colour code	Core design
CF280.UL.H200.15.07.D (SEW-EURODRIVE Kabeltyp A/1,5)	4G1.5	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	3x1.5	one core each in blue, white and red	
	(2x0.75)C	2 black cores with white numbers 1 & 2	
CF280.UL.H200.25.07.D (SEW-EURODRIVE Kabeltyp A/2,5)	4G2.5	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	3x2.5	one core each in blue, white and red	
	(2x0.75)C	2 black cores with white numbers 1 & 2	
CF280.UL.H201.15.04.D (SEW-EURODRIVE Kabeltyp B/1,5)	4G1.5	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x0.75)C	one core each in white (0V) and red (24V)	
	(3x0.75)C	one core each in white (0V), orange (RS+) and green (RS-)	
CF280.UL.H201.25.04.D (SEW-EURODRIVE Kabeltyp B/2,5)	4G2.5	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x0.75)C	one core each in white (0V) and red (24V)	
	(3x0.75)C	one core each in white (0V), orange (RS+) and green (RS-)	
CF280.UL.H203.15.04.D (SEW-EURODRIVE Kabeltyp E/1,5)	4G1.5	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(3x1.0)C)C	3 black cores with white numbers 1 - 3	
CF280.UL.H203.25.04.D (SEW-EURODRIVE Kabeltyp E/2,5)	4G2.5	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(3x1.0)C)C	3 black cores with white numbers 1 - 3	



Example image

igus® chainflex® CF280.UL.H

Data sheet

chainflex® CF280.UL.H



Hybrid servo cable (Class 4.2.3.1) ● 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

SEW-EURODRIVE

CF280.UL.H200.15.07.D-CF280.UL.H207.25.04.D

Design table

(continued)

Part No.	Core group	Colour code	Core design
CF280.UL.H204.15.04.D (SEW-EURODRIVE Kabeltyp D/1,5)	4G1.5	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x0.75)C	2 black cores with white numbers 4 & 5	
	(3x1.0)C/C	3 black cores with white numbers 1 - 3	
CF280.UL.H206.40.04.D (SEW-EURODRIVE Kabeltyp D/4,0)	4G4.0	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x0.75)C	2 black cores with white numbers 4 & 5	
	(3x1.5)C	3 black cores with white numbers 1 - 3	
CF280.UL.H206.60.04.D (SEW-EURODRIVE Kabeltyp D/6,0)	4G6.0	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x0.75)C	2 black cores with white numbers 4 & 5	
	(3x1.5)C/C	3 black cores with white numbers 1 - 3	
CF280.UL.H207.15.04.D (SEW-EURODRIVE MOVILINK® DDI)	4G1.5	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	2x(2x1.0)C	yellow/orange, pink/violet	
	HF50-0.9/2.95	Coaxial element in violet	
CF280.UL.H207.25.04.D (SEW-EURODRIVE MOVILINK® DDI)	4G2.5	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	2x(2x1.0)C	yellow/orange, pink/violet	
	HF50-0.9/2.95	Coaxial element in violet	



Example image

igus® chainflex® CF280.UL.H

Data sheet

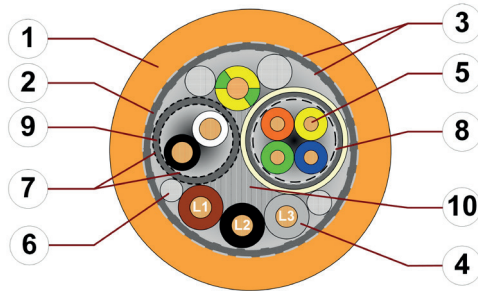
chainflex® CF280.UL.H



Hybrid servo cable (Class 4.2.3.1) ● 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

Siemens (SINAMICS S210)

CF280.UL.H300.03.04.D-CF280.UL.H304.25.04.D



Example image

For detailed overview please see design table

1. Outer jacket: Pressure extruded PUR mixture
2. Overall shield: Extremely bending-stable braid made of tinned copper wires
3. Banding: Plastic fleece
4. Core insulation: Mechanically high-quality, especially low-capacitance TPE mixture
5. Conductor: Especially bending-resistant version consisting of bare copper wires
6. Filling: Plastic yarns
7. Element banding: Plastic foil
8. Shield foil: Aluminium-coated polyester foil
9. Element shield: Bending-resistant braiding made of tinned copper wires
10. Strain relief: Tensile stress-resistant centre element

Electrical information

Bus element	SINAMICS S210
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 15 Ω (1-10 MHz)
Operating capacity	50 pF/m

 **Nominal voltage** 300/500 V (following DIN VDE 0298-3)
 CF280.UL.H300.xx.xx.D/CF280.UL.H301.xx.xx.D: 300 V (following UL)
 CF280.UL.H304.xx.xx.D: 1000 V (following UL)

 **Testing voltage** 2000 V (following DIN EN 50395)

Details UL approval

 **UL/CSA**
 CF280.UL.H300.xx.xx.D/CF280.UL.H301.xx.xx.D:
 Cores 0.34/0.5/0.75: Style 10467 (300 V, 80°C)
 Cores AWG26: Style 11602 (300 V, 80°C)
 Cable: Style 20233 (300 V, 80 °C)
 CF280.UL.H304.xx.xx.D:
 Cores 1.5/2.5: Style 10492 (1000 V, 80°C)
 Cores AWG26: Style 11117 (1000 V, 80°C)
 Cable: Style 21223 (1000 V, 80 °C)



Example image

igus® chainflex® CF280.UL.H

Data sheet

chainflex® CF280.UL.H



Hybrid servo cable (Class 4.2.3.1) ● 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



Siemens (SINAMICS S210)

CF280.UL.H300.03.04.D-CF280.UL.H304.25.04.D

Design table

Part No.	Core group	Colour code	Core design
CF280.UL.H300.03.04.D	4G0.34	one core each in grey, black and brown: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x0.34)C	one core each in black and white	
	(4xAWG26)C	one core each in yellow, blue, green and orange	
CF280.UL.H301.07.04.D	4G0.75	one core each in grey, black and brown: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x0.5)C	one core each in black and white	
	(4xAWG26)C	one core each in yellow, blue, green and orange	
CF280.UL.H304.15.04.D	4G1.5	one core each in grey, black and brown: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x1.5)C	one core each in black and white	
	(4xAWG26)C	one core each in yellow, blue, green and orange	
CF280.UL.H304.25.04.D	4G2.5	one core each in grey, black and brown: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x1.5)C	one core each in black and white	
	(4xAWG26)C	one core each in yellow, blue, green and orange	



igus 4-year
chainflex cable
guarantee and
service life
calculator based
on 2 billion test
cycles per year



Example image

Data sheet

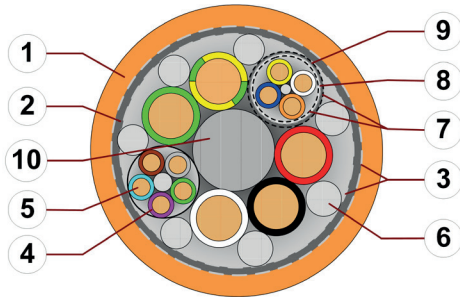
chainflex® CF280.UL.H



Hybrid servo cable (Class 4.2.3.1) ● 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

IndraDrive

CF280.UL.H400.25.05.D



1. Outer jacket: Pressure extruded PUR mixture
2. Overall shield: Extremely bending-stable braid made of tinned copper wires
3. Banding: Plastic fleece
4. Core insulation: Mechanically high-quality, especially low-capacitance XLPE mixture
5. Conductor: Especially bending-resistant version consisting of bare copper wires
6. Filling: Plastic yarns
7. Element banding: Plastic foil
8. Shield foil: Aluminium-coated polyester foil
9. Element shield: Bending-resistant braiding made of tinned copper wires
10. Strain relief: Tensile stress-resistant centre element

Example image

For detailed overview please see design table

Electrical information

Bus element	IndraDrive
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 15 Ω (1-100 MHz)
Operating capacity	50 pF/m

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

Details UL approval

	UL/CSA	Cores 0.35/2.5: Style 3646 (1000 V, 80 °C) Cores AWG22: Style 11117 (1000 V, 80 °C) Cable: Style 21223 (1000 V, 80 °C)
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Design table

Part No.	Core group	Colour code	Core design
CF280.UL.H400.25.05.D	5x2.5	one core each in red, black, white, green, followed by one green-yellow core	
	5x0.35	one core each in turquoise, violet, brown, green and grey	
	(4xAWG22)C	one core each in white, orange, blue and yellow	



Example image

igus® chainflex® CF280.UL.H

Data sheet

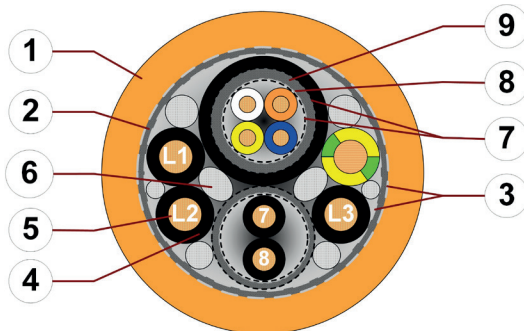
chainflex® CF280.UL.H



Hybrid servo cable (Class 4.2.3.1) ● 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

ctrlX DRIVE

CF280.UL.H401.07.04.D-CF280.UL.H402.15.04.D



Example image

For detailed overview please see design table

1. Outer jacket: Pressure extruded PUR mixture
2. Overall shield: Extremely bending-stable braid made of tinned copper wires
3. Banding: Plastic fleece
4. Core insulation: Mechanically high-quality, especially low-capacitance XLPE mixture
5. Conductor: Especially bending-resistant version consisting of bare copper wires
6. Filling: Plastic yarns
7. Element banding: Plastic foil
8. Shield foil: Aluminium-coated polyester foil
9. Element shield: Bending-resistant braiding made of tinned copper wires

Electrical information

Bus element	ctrlX DRIVE
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 15 Ω (1-100 MHz)
Operating capacity	50 pF/m (800 kHz)

Nominal voltages 600/1000 V (following DIN VDE 0298-3)
 1000 V (following UL)

Testing voltage 4000 V (following DIN EN 50395)

Details UL approval

UL/CSA
Cores 0.5/0.75: Style 3646 (1000 V, 80 °C)
Cores AWG24: Style 11117 (1000 V, 80 °C)
Cable: Style 21223 (1000 V, 80 °C)

Design table

Part No.	Core group	Colour code	Core design
CF280.UL.H401.07.04.D	4G0.75	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x0.5)C	2 black cores with white numbers 7 & 8	
	(4xAWG24)C	one core each in white, orange, blue and yellow	
CF280.UL.H402.15.04.D	4G1.5	3 black cores with white printing: 1. Core: U/L1/C/L+ 2. Core: V/L2 3. Core: W/L3/D/L- followed by one green-yellow core	
	(2x0.75)C	2 black cores with white numbers 7 & 8	
	(4xAWG24)C	one core each in white, orange, blue and yellow	



Example image

igus® chainflex® CF280.UL.H

Data sheet

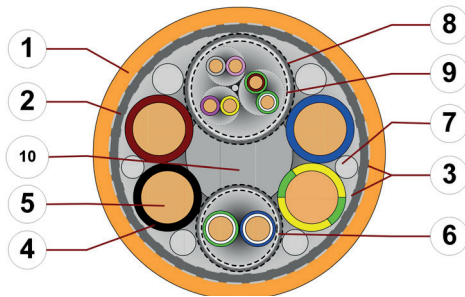
chainflex® CF280.UL.H



Hybrid servo cable (Class 4.2.3.1) ● 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

HEIDENHAIN

CF280.UL.H501.15.04.D-CF280.UL.H502.40.04.D



Example image

For detailed overview please see design table

1. Outer jacket: Pressure extruded PUR mixture
2. Overall shield: Extremely bending-stable braid made of tinned copper wires
3. Banding: Plastic fleece
4. Core insulation: Mechanically high-quality, especially low-capacitance XLPE mixture
5. Conductor: Especially bending-resistant version consisting of bare copper wires
6. Filling: Plastic yarns
7. Element banding: Plastic foil
8. Shield foil: Aluminium-coated polyester foil
9. Element shield: Bending-resistant braiding made of tinned copper wires
10. Strain relief: Tensile stress-resistant centre element

Electrical information



Nominal voltage

600/1000 V (following DIN VDE 0298-3)
 1000 V (following UL)



Testing voltage

4000 V (following DIN EN 50395)

Details UL approval



UL/CSA

Cores 0.14/0.25/0.75/1.0: Style 10867 (1000 V, 80 °C)

Cores 1.5/4.0: Style 3646 (1000 V, 80 °C)

Cable: Style 21223 (1000 V, 80 °C)

Design table

Part No.	Core group	Colour code	Core design
CF280.UL.H501.15.04.D	4G1.5	one core each in black, brown, blue, followed by one green-yellow core	
	(2x0.75)C	one core each in white-blue and white-green	
	2x2x0.14	2 pairs in pink/grey and yellow/violet	
	2x0.25	one core each in brown-green and white-green	
CF280.UL.H502.40.04.D	4G4.0	one core each in black, brown, blue, followed by one green-yellow core	
	(2x1.0)C	one core each in white-blue and white-green	
	2x2x0.14	2 pairs in pink/grey and yellow/violet	
	2x0.25	one core each in brown-green and white-green	



igus 4-year
chainflex cable
guarantee and
service life
calculator based
on 2 billion test
cycles per year



Example image

igus® chainflex® CF280.UL.H