

# Servo cables

## Hybrid cables



chainflex® cable	Jacket	Shield	Bend radius e-chain® [factor x d]	Temperature e-chain® from/to [°C]	Approvals and standards	Oil-resistant	Torsion-resistant v max. [m/s] unsupported	v max. [m/s] gliding a max.	Page	
<b>Servo cables</b>										
Information and selection chart for hybrid servo cables									278	
CF887	PVC	✓	15	+5/+70			3	20	280	
CF210.UL	PVC	✓	10	+5/+70			10	2	50	282
CF21.UL	PVC	✓	7.5	+5/+70			10	5	80	286
CF897	iguPUR	✓	15	-20/+80			3	20	290	
CF270.UL.D	PUR	✓	10	-25/+80			10	2	50	292
CF27.D	PUR	✓	7.5	-25/+80			10	5	80	296
CF29.D	TPE	✓	6.8	-35/+100			10	5	80	300
<b>Hybrid cables</b>										
CF220.UL.H	PVC	✓	10	+5/+70			10	2	50	302 <b>New</b>
CF280.UL.H	PUR	✓	10	-25/+80			10	2	50	306 <b>New</b>
<b>Twistable hybrid cable (twistable cables chapter ▶ Page 378)</b>										
CFROBOT9	PUR	✓	10	-25/+80					414	

### 36-month chainflex® guarantee

Guaranteed service life for predictable reliability

▶ Selection table page 276

With the help of the chainflex® service life calculator, you can quickly and easily calculate the expected service life of chainflex® cables specifically for your application:

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

Guarantee  
igus chainflex

# 36

up to 36 months guarantee

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



chainflex® cables	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s²]	Travel distance [m]	Minimum bend radius [factor x d]		Minimum bend radius [factor x d]		Minimum bend radius [factor x d]		Page
		unsupported	gliding			< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m	
<b>Servo cables</b>												
						5 million (1 million) double strokes *		7.5 million (3 million) double strokes *		10 million (5 million) double strokes *		
CF887	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	17.5 15 17.5		18.5 16 18.5		19.5 17 19.5		280
CF210.UL	+5 / +15 +15 / +60 +60 / +70	10	2	50	≤ 10	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		282
CF21.UL	+5 / +15 +15 / +60 +60 / +70	10	5	80	≤ 100	10 7.5 10		11 8.5 11		12 9.5 12		286
CF897	-20 / -10 -10 / +70 +70 / +80	3	-	20	≤ 10	17.5 15 17.5		18.5 16 18.5		19.5 17 19.5		290
CF270.UL.D	-25 / -15 -15 / +70 +70 / +80	10	2	50	≤ 10	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		292
CF27.D	-25 / -15 -15 / +70 +70 / +80	10	5	80	≤ 100	10 7.5 10		11 8.5 11		12 9.5 12		296
						5 million		7.5 million		12.5 million		
CF29.D	-35 / -25 -25 / +90 +90 / +100	10	5	80	> 400	8.5 6.8 7.5	10 7.5 10	9.5 7.5 9.5	11 8.5 11	10.5 8.5 10.5	12 9.5 12	300
<b>Hybrid cables</b>												
CF220.UL.H <b>New!</b>	+5 / +15 +15 / +60 +60 / +70	10	2	50	≤ 10	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		302
CF280.UL.H <b>New!</b>	-25 / -15 -15 / +70 +70 / +80	10	2	50	≤ 10	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		306

<sup>(1)</sup> Guaranteed service life for these series (details ► see page 28-29)

\* Higher number of double strokes? Calculate service life online: ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)  
 Figures in brackets refer to series CF887 and CF897



## igus® chainflex® system cables (hybrid servo cables) ... ... for single-cable solutions in drive technology

In chainflex® series **CF220.UL.H** and **CF280.UL.H**, you will see system cables for intelligent drive concepts for many well known system manufacturers.

To save installation space in e-chain systems® some manufacturers combine the servo cable for power with the measuring system cable for position data to make a so-called hybrid cable. The feedback of the position data to the servo controller is done frequently by various digital bus technologies.

When combining these two cables into a hybrid cable, it is necessary to guarantee the data transmission properties and the EMC behavior of the cable for many millions of movement cycles.

High optical coverage shielding designs are used in igus® chainflex® servo hybrid cables because of the close proximity of the power cores carrying high interference square-wave signals to the bus cores.

A secure transmission of bus signals at maximum cable length and at maximum speed makes high demands on the insulating materials of the bus or data cores.

In the 3,800m² large igus® laboratory, electrical parameters such as capacitance, impedance, attenuation and crosstalk are measured over the entire test period of several million double strokes and monitored for compliance with the specifications.

igus® chainflex® servo hybrid cables are available in cost-effective PVC and oil-resistant, halogen-free PUR.

As with all chainflex® cables, igus® also offers a guarantee of 36 months or 10 million double strokes for the servo hybrid cables and 5 million for chainflex® M.

In the chart on the opposite page you will find an overview of all currently available hybrid cables grouped by system manufacturer.

The companies listed are drive systems manufacturers or technology providers whose rotation sensors are commonly available.



Two become one: hybrid servo cables combine servo and measuring system cables.

### Selection table hybrid servo cables

Hybrid technology/ Manufacturer	CF220.UL.H PVC 10 x d Page 302	CF280.UL.H PUR 10 x d Page 306
<b>SICK (HIPERFACE DSL)</b>		
ABB		
AMK		
B&R		
Baumüller		
BCB		
Beckhoff		
BMP		
CEDS		
Fertig		
Fine		
Han's		
Harmonic Drive AG		
Heidrive		
Infranor		
IRT		
Jetter		
KEBA	CF220.UL.H100-.H102	CF280.UL.H100-.H102
Kinavo		
Kollmorgen		
Lafert		
LTI DRIVES		
Mavilor		
Maxsine		
metronix		
NUM		
Parker		
PowerMotor		
ROBOX		
Selema		
Siboni		
Sigmathek		
STEP		
TG-Drives		
WEG		
<b>SEW cable type A, B, C, D, E</b>		
SEW	CF220.UL.H203	CF280.UL.H200-.H206
<b>MOVILINK DDI</b>		
SEW	-	CF280.UL.H207
<b>SINAMICS S210</b>		
Siemens	CF220.UL.H300-.H304	CF280.UL.H300-.H304
<b>IndraDrive / crtIXDRIVE</b>		
Bosch Rexroth	-	CF280.UL.H400-.H401
<b>HEIDENHAIN</b>		
B&R	CF220.UL.H501	CF280.UL.H501-.H502

# Servo cable | PVC | chainflex® CF887

**36** 5,000,000 Double strokes guaranteed **15 x d** Bend radius, e-chain® **10m** Travel distance, e-chain®

- For flexing applications
- PVC outer jacket
- Shielded
- Flame-retardant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 15 x d
	<b>fixed</b>	minimum 12 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C
	<b>fixed</b>	-5°C up to +70°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to 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 together in an optimised pitch length.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8
<b>Element shield</b>	Foil taping of optimised, bending-resistant foil shield.
<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60% optical
<b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF887](http://www.igus.eu/CF887)

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°			

## Class 3.1.1.1

### Properties and approvals

<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>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/CF887">www.igus.eu/CF887</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00302/19
<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>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	17.5	18.5	19.5
+15/+60	15	16	17
+60/+70	17.5	18.5	19.5

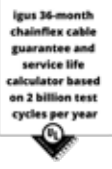
\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For flexing applications, Class 3
- Especially for unsupported travels, Class 1
- Without influence of oil, Class 1
- No torsion, Class 1
- Preferably indoor applications
- Wood/stone processing, packaging industry, feeding, handling, adjusting devices

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
<b>1 control pair shielded</b>				
CF887.07.05.02.01	(4G0.75+(2x0.5)C)C	10.0	69	119
CF887.15.15.02.01	(4G1.5+(2x1.5)C)C	12.5	124	200
CF887.25.15.02.01	(4G2.5+(2x1.5)C)C	13.5	182	254
CF887.40.15.02.01	(4G4.0+(2x1.5)C)C	14.5	236	340
<b>2 control pairs shielded</b>				
CF887.10.07.02.02	(4G1.0+2x(2x0.75)C)C	11.5	110	184
CF887.15.15.02.02	(4G1.5+2x(2x1.5)C)C	13.5	164	253
CF887.25.15.02.02	(4G2.5+2x(2x1.5)C)C	14.5	217	325

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



Example image

igus® chainflex® CF887

# Servo cable | PVC | chainflex® CF210.UL

**36** 10 million Double strokes guaranteed **10 x d** Bend radius, e-chain® **10m** Travel distance, e-chain®

- For medium duty applications
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 8 x d
	<b>e-chain® linear flexible</b>	+5°C up to +70°C
	<b>fixed</b>	-5°C up to +70°C (following DIN EN 60811-504)
	<b>unsupported</b>	10m/s
	<b>gliding</b>	2m/s
<b>Temperature</b>		
<b>v max.</b>		
<b>a max.</b>		
<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>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 4 2. Control core: 5 <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8
<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, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Pastel orange (similar to RAL 2003)

Example image

EPLAN download, configurators ► [www.igus.eu/CF210UL](http://www.igus.eu/CF210UL)

36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges



EU2023

EU2023



# Class 4.2.2.1

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

## Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
<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>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/CF210UL">www.igus.eu/CF210UL</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>RoHS</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1
<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)

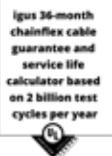
## Guaranteed service life (details see page 28-29)

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]
+5/+15	12.5	13.5	14.5
+15/+60	10	11	12
+60/+70	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
- Light oil influence, Class 2
- No torsion, Class 1
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Wood/stone processing, packaging industry, feeding, handling, adjusting devices



UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)

# Servo cable | PVC | chainflex® CF210.UL

## Class 4.2.2.1

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°			



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>1 control pair shielded</b>				
CF210.UL.15.15.02.01	(4G1.5+(2x1.5)C)	12.5	154	245
CF210.UL.25.15.02.01	(4G2.5+(2x1.5)C)C	14.0	210	299
CF210.UL.40.15.02.01	(4G4.0+(2x1.5)C)C	15.0	255	383
CF210.UL.60.15.02.01	(4G6.0+(2x1.5)C)C	16.5	343	488
<b>2 control pairs shielded</b>				
CF210.UL.15.07.02.02	(4G1.5+2x(2x0.75)C)C	13.5	161	278
CF210.UL.25.15.02.02	(4G2.5+2x(2x1.5)C)C	16.0	244	381
CF210.UL.40.15.02.02	(4G4.0+2x(2x1.5)C)C	17.0	332	428
CF210.UL.60.15.02.02	(4G6.0+2x(2x1.5)C)C	19.0	403	598
<b>without control pair</b>				
CF210.UL.05.04	(4G0.5)C	7.0	34	63
CF210.UL.15.04	(4G1.5)C	10.0	86	140
CF210.UL.25.04	(4G2.5)C	11.5	146	209
CF210.UL.40.04	(4G4.0)C	13.0	195	288

**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

**Order example: CF210.UL.40.15.02.01 - to your desired length (0.5m steps)**  
CF210.UL chainflex® series .40 Code nominal cross section .15 Code nominal cross section signal pairs  
.02 Identification pairs .01 Number of pairs

Order online ► [www.igus.eu/CF210UL](http://www.igus.eu/CF210UL)

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



### 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)



chainflex® servo cable in a vertical e-chain®

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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



EPLAN download, configurators ► [www.igus.eu/CF210UL](http://www.igus.eu/CF210UL)

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

# Servo cable | PVC | chainflex® CF21.UL

- 36** 10 million Double strokes guaranteed
- 7.5 x d** Bend radius, e-chain®
- 100m** Travel distance, e-chain®

- For heavy duty applications
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
<b>a max.</b>		80m/s²
<b>Travel distance</b>		Unsupported travels and up to 100m for gliding applications, Class 5

## Cable structure

<b>Conductor</b>	Stranded conductor in especially 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 with control pair elements wound with elements for high tensile stresses.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 4 2. Control core: 5 <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8
<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires.
<b>Inner jacket</b>	PVC mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Moss green (similar to RAL 6005)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

EPLAN download, configurators ► [www.igus.eu/CF21UL](http://www.igus.eu/CF21UL)

36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges

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°			

## Class 5.5.2.1

### Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
<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>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/CF21UL">www.igus.eu/CF21UL</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>RoHS</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

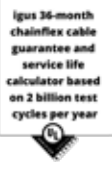
### Guaranteed service life (details see page 28-29)

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]
+5/+15	10	11	12
+15/+60	7.5	8.5	9.5
+60/+70	10	11	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heavy-duty applications, Class 5
- Unsupported travels and up to 100m for gliding applications, Class 5
- Light oil influence, Class 2
- No torsion, Class 1
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Storage and retrieval units, machining units/packages machines, quick handling, indoor cranes



# Servo cable | PVC | chainflex® CF21.UL


Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF21.UL


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>1 control pair shielded</b>				
CF21.07.05.02.01.UL	(4G0.75+(2x0.5)C)C	11.0	76	159
CF21.15.15.02.01.UL	(4G1.5+(2x1.5)C)	13.0	145	256
CF21.25.15.02.01.UL	(4G2.5+(2x1.5)C)C	14.5	199	330
CF21.40.15.02.01.UL	(4G4.0+(2x1.5)C)C	16.0	256	406
CF21.60.15.02.01.UL	(4G6.0+(2x1.5)C)C	18.0	343	546
CF21.100.15.02.01.UL	(4G10+(2x1.5)C)C	21.5	536	828
<b>2 control pairs shielded</b>				
CF21.07.03.02.02.UL	(4G0.75+2x(2x0.34)C)C	12.5	103	208
CF21.10.07.02.02.UL	(4G1.0+2x(2x0.75)C)	13.5	148	269
CF21.15.07.02.02.UL	(4G1.5+2x(2x0.75)C)C	14.5	167	309
CF21.25.15.02.02.UL	(4G2.5+2x(2x1.5)C)C	17.0	254	434
CF21.40.15.02.02.UL	(4G4.0+2x(2x1.5)C)C	18.0	308	515
CF21.60.15.02.02.UL	(4G6.0+2x(2x1.5)C)C	21.0	412	695
CF21.100.15.02.02.UL	(4G10+2x(2x1.5)C)C	23.0	592	925
CF21.160.15.02.02.UL	(4G16+2x(2x1.5)C)C	26.5	878	1287

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

 **Order example: CF21.40.15.02.01.UL - to your desired length (0.5m steps)**  
CF21.UL chainflex® series .40 Code nominal cross section .15 Code nominal cross section signal pairs  
.02 Identification pairs .01 Number of pairs

 Order online ► [www.igus.eu/CF21UL](http://www.igus.eu/CF21UL)

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



### Cables available in the chainflex® CASE

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

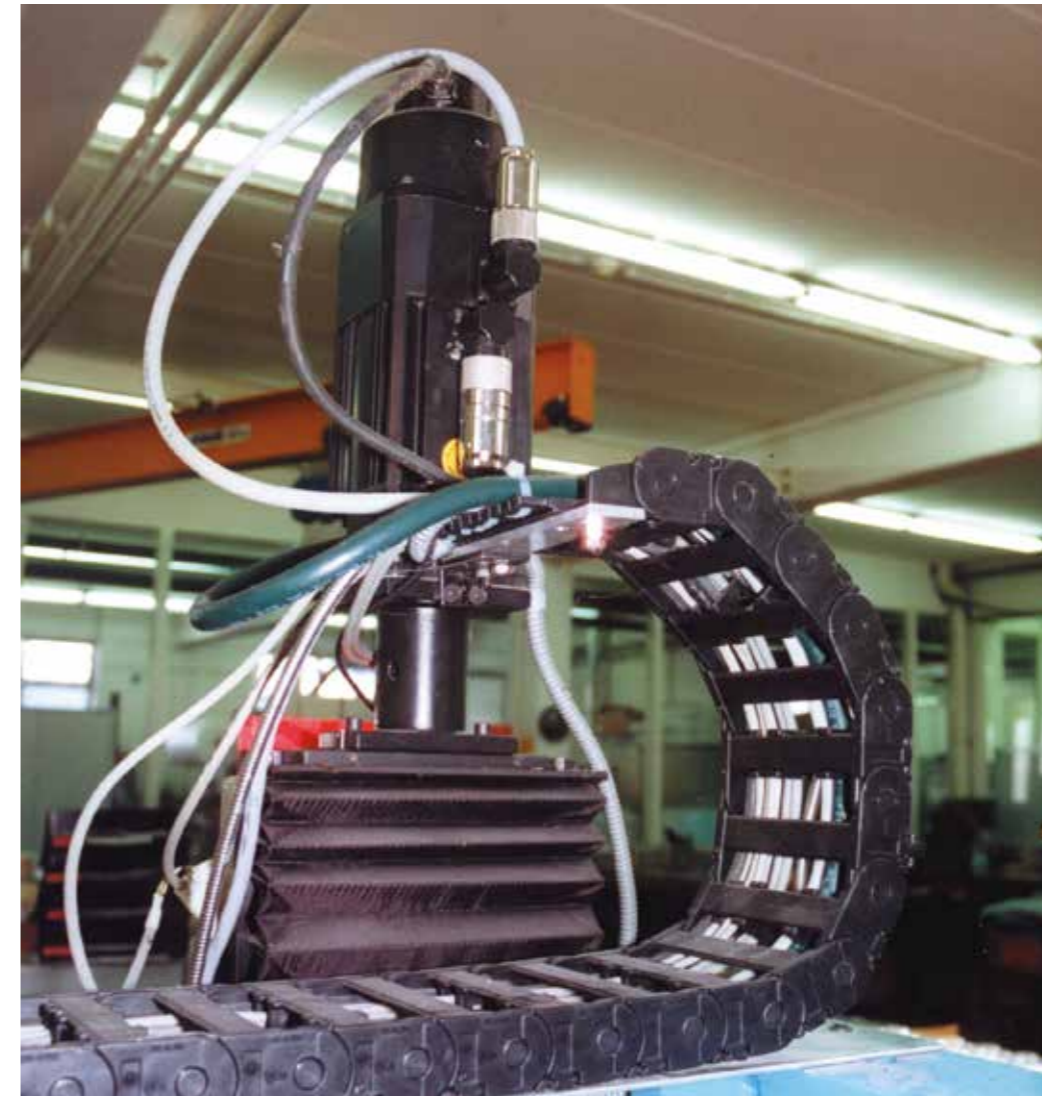
More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



## Class 5.5.2.1

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°			



chainflex® CF21.UL: cables for energy supply systems in spinneret production. e-chain®: E2/000



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/CF21UL](http://www.igus.eu/CF21UL)



# Servo cable | iguPUR | chainflex® CF897



**5,000,000**  
Double strokes guaranteed



**15 x d**  
Bend radius, e-chain®



**10m**  
Travel distance, e-chain®

- For flexing applications
- iguPUR outer jacket
- Oil-resistant
- Shielded
- Flame-retardant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 15 x d
	<b>fixed</b>	minimum 12 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-20°C up to +80°C
	<b>fixed</b>	-40°C up to +80°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to 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 together in an optimised pitch length.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8
<b>Element shield</b>	Foil taping of optimised, bending-resistant foil shield.
<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60% optical
<b>Outer jacket</b>	Low-adhesion iguPUR mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF897](http://www.igus.eu/CF897)

36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges



EU2023

EU2023

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°			

## Class 3.1.3.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>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>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/CF897">www.igus.eu/CF897</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00302/19
<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>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-20/-10	17.5	18.5	19.5
-10/+70	15	16	17
+70/+80	17.5	18.5	19.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For flexing applications, Class 3
- Especially for unsupported travels, Class 1
- With influence of oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications without direct sun radiation
- Machining units/machine tools, low temperature applications

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
<b>1 control pair shielded</b>				
CF897.15.15.02.01	(4G1.5+(2x1.5)C)	12.5	124	201
CF897.25.15.02.01	(4G2.5+(2x1.5)C)C	13.5	182	248
CF897.40.15.02.01	(4G4.0+(2x1.5)C)C	14.5	236	329
<b>2 control pairs shielded</b>				
CF897.15.15.02.02	(4G1.5+2x(2x1.5)C)C	13.5	164	246

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

UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)



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



# Servo cable | PUR | chainflex® CF270.UL.D

- 36** 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
- Notch-resistant
- Flame-retardant
- Hydrolysis and microbe-resistant
- PVC and halogen-free

## 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/s²
<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>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 4 2. Control core: 5 <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8
<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)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF270ULD](http://www.igus.eu/CF270ULD)

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°			

## 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/CF270ULD">www.igus.eu/CF270ULD</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 According to VDW, DESINA standardisation
<b>DESINA</b>	
<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)

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



Example image

igus® chainflex® CF270.UL.D



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>1 control pair shielded</b>				
CF270.UL.15.15.02.01.D	(4G1.5+(2x1.5)C)	11.5	146	190
CF270.UL.25.15.02.01.D	(4G2.5+(2x1.5)C)C	13.0	195	248
CF270.UL.40.15.02.01.D	(4G4.0+(2x1.5)C)C	15.0	260	328
CF270.UL.60.15.02.01.D	(4G6.0+(2x1.5)C)C	16.5	350	430
CF270.UL.100.15.02.01.D	(4G10+(2x1.5)C)C	19.0	541	624
CF270.UL.160.15.02.01.D	(4G16+(2x1.5)C)C	22.0	786	900
<b>2 control pairs shielded</b>				
CF270.UL.07.03.02.02.D	(4G0.75+2x(2x0.34)C)C	11.0	96	151
CF270.UL.10.07.02.02.D	(4G1.0+2x(2x0.75)C)	12.5	139	200
CF270.UL.15.07.02.02.D	(4G1.5+2x(2x0.75)C)C	12.5	162	210
CF270.UL.25.15.02.02.D	(4G2.5+2x(2x1.5)C)C	15.5	265	322
CF270.UL.40.15.02.02.D	(4G4.0+2x(2x1.5)C)C	16.5	322	403
CF270.UL.60.15.02.02.D	(4G6.0+2x(2x1.5)C)C	18.5	407	505
CF270.UL.100.15.02.02.D	(4G10+2x(2x1.5)C)C	21.0	604	703
CF270.UL.160.15.02.02.D	(4G16+2x(2x1.5)C)C	24.0	857	997
CF270.UL.250.15.02.02.D	(4G25+2x(2x1.5)C)C	27.5	1219	1422
<b>without control pair</b>				
CF270.UL.07.04.D	(4G0.75)C	8.0	47	81
CF270.UL.10.06.D	(6G1.0)C	9.5	87	133
CF270.UL.15.04.D	(4G1.5)C	9.0	78	116
CF270.UL.25.04.D	(4G2.5)C	10.5	129	173
CF270.UL.40.04.D	(4G4.0)C	12.5	193	255
CF270.UL.60.04.D	(4G6.0)C	14.5	297	356
CF270.UL.100.04.D	(4G10)C	17.0	495	551
CF270.UL.160.04.D	(4G16)C	20.5	755	819
CF270.UL.250.04.D	(4G25)C	25.0	1117	1256
CF270.UL.350.04.D	(4G35)C	28.0	1597	1696
<b>Spindle cable/Single core</b>				
CF270.UL.60.01.D	(1x6.0)C	7.5	72	95
CF270.UL.100.01.D	(1x10)C	8.5	114	145
CF270.UL.160.01.D	(1x16)C	9.5	178	209
CF270.UL.250.01.D	(1x25)C	11.0	269	304
CF270.UL.350.01.D	(1x35)C	13.0	374	419
CF270.UL.500.01.D	(1x50)C	15.0	525	579
CF270.UL.700.01.D	(1x70)C	17.0	751	804

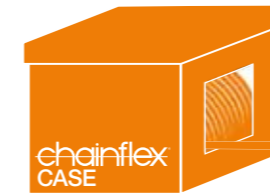
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.  
G = with green-yellow earth core x = without earth core

Class 4.2.3.1

Order example: **CF270.UL.40.15.02.01.D** - to your desired length (0.5m steps)  
CF270.UL.D chainflex® series .40 Code nominal cross section .15 Code nominal cross section signal pairs  
.02 Identification pairs .01 Number of pairs

Order online ► [www.igus.eu/CF270ULD](http://www.igus.eu/CF270ULD)

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



Cables available in the chainflex® CASE

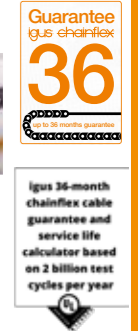
Simple savings on delivery, storage space and re-ordering with the chainflex® CASE - ship'n store by igus®.

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



Linear robot with chainflex® servo and measuring system cables, short travel distance

EPLAN download, configurators ► [www.igus.eu/CF270ULD](http://www.igus.eu/CF270ULD)



# Servo cable | PUR | chainflex® CF27.D

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **100m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 7.5 x d
	<b>flexible</b>	minimum 6 x d
	<b>fixed</b>	minimum 4 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>a max.</b>	<b>gliding</b>	5m/s
<b>Travel distance</b>	Unsupported travels and up to 100m for gliding applications, Class 5	

## Cable structure

<b>Conductor</b>	Stranded conductor in especially 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 with control pair elements wound with elements for high tensile stresses.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 4 2. Control core: 5 <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8 <b>Star quad:</b> yellow, black, red, white
<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires.
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<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)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<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	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

# Class 6.5.3.1

## 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/CF27D">www.igus.eu/CF27D</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>DNV</b>	Type Approval Certificate TAE00003XA
<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>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

## 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	10	11	12
-15/+70	7.5	8.5	9.5
+70/+80	10	11	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heavy-duty applications, Class 6
- Unsupported travels and up to 100m for gliding applications, Class 5
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, outdoor cranes, low-temperature applications



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



# Servo cable | PUR | chainflex® CF27.D

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF27.D

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>1 control pair shielded</b>				
CF27.07.05.02.01.D	(4G0.75+(2x0.5)C)C	11.5	76	169
CF27.15.15.02.01.D	(4G1.5+(2x1.5)C)	13.0	145	244
CF27.25.15.02.01.D	(4G2.5+(2x1.5)C)C	14.5	199	306
CF27.40.15.02.01.D	(4G4.0+(2x1.5)C)C	16.0	256	403
CF27.60.15.02.01.D	(4G6.0+(2x1.5)C)C	17.5	343	505
CF27.100.15.02.01.D	(4G10+(2x1.5)C)C	21.0	536	746
CF27.160.15.02.01.D	(4G16+(2x1.5)C)C	24.0	797	1086
CF27.250.15.02.01.D	(4G25+(2x1.5)C)C	28.0	1173	1528
CF27.350.15.02.01.D	(4G35+(2x1.5)C)C	32.0	1618	1998
<b>2 control pairs shielded</b>				
CF27.07.03.02.02.D	(4G0.75+2x(2x0.34)C)C	12.5	103	196
CF27.10.07.02.02.D	(4G1.0+2x(2x0.75)C)	13.5	148	245
CF27.15.07.02.02.D	(4G1.5+2x(2x0.75)C)C	14.5	167	287
CF27.25.15.02.02.D	(4G2.5+2x(2x1.5)C)C	16.0	254	383
CF27.40.15.02.02.D	(4G4.0+2x(2x1.5)C)C	17.5	308	459
CF27.60.15.02.02.D	(4G6.0+2x(2x1.5)C)C	19.5	412	604
CF27.100.15.02.02.D	(4G10+2x(2x1.5)C)C	22.5	592	842
CF27.160.15.02.02.D	(4G16+2x(2x1.5)C)C	26.0	878	1223
CF27.250.15.02.02.D	(4G25+2x(2x1.5)C)C	31.0	1250	1699
<b>1 star-quad shielded</b>				
CF27.15.05.04.D	(4G1.5+(4x0.5)C)C	12.5	131	231
CF27.25.05.04.D	(4G2.5+(4x0.5)C)C	14.0	176	292
CF27.40.05.04.D	(4G4.0+(4x0.5)C)	16.0	244	376
<b>without control pair</b>				
CF27.07.04.D	(4G0.75)C	9.5	55	115
CF27.15.04.D	(4G1.5)C	11.0	90	165
CF27.25.04.D	(4G2.5)C	12.5	135	231
CF27.500.04.D	(4G50)C	37.0	2244	2817

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



### 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)



EPLAN download, configurators ► [www.igus.eu/CF27D](http://www.igus.eu/CF27D)

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°			

## Class 6.5.3.1

Order example: **CF27.40.15.02.01.D** - to your desired length (0.5m steps)  
CF27.D chainflex® series .40 Code nominal cross section .10 Code nominal cross section  
.02 Identification pairs .01 Number of pairs

Order online ► [www.igus.eu/CF27D](http://www.igus.eu/CF27D)

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

### cost down...



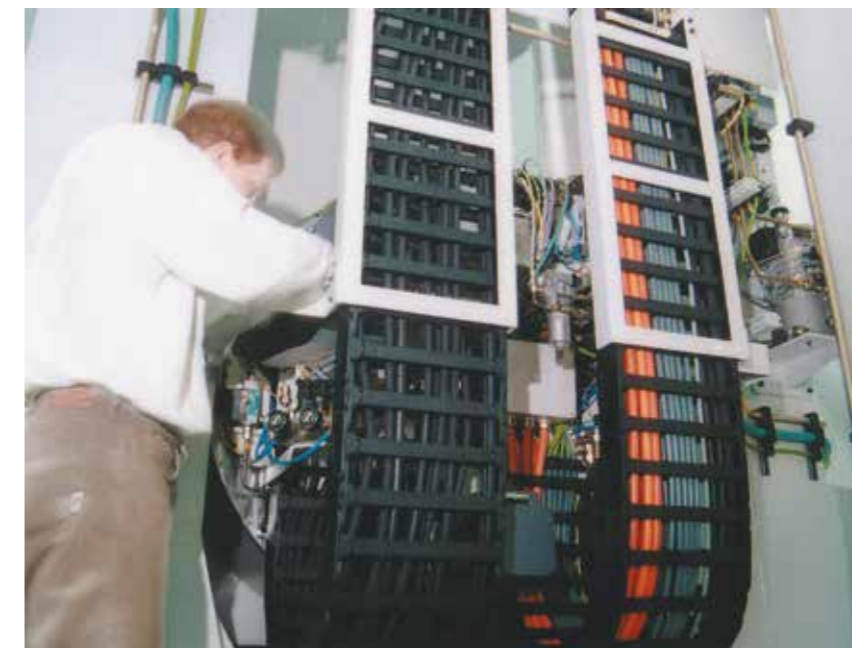
...life up

### Reduce cost, improve technology, now!

Do the chainflex® price check ...

[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

... for example: reduce cost with CF21.UL ...



Modular design, easy to retrofit: igus® E4 e-chain® and chainflex® cables.



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



# Servo cable | TPE | chainflex® CF29.D



**12.5 million**  
Double strokes guaranteed



**6.8 x d**  
Bend radius, e-chain®



**400m**  
Travel distance, e-chain®

- For heaviest duty applications
- TPE outer jacket
- Shielded
- Oil and bio-oil-resistant
- PVC and halogen-free
- UV-resistant
- Hydrolysis and microbe-resistant

**Now available  
with UL approval  
& 25% longer  
service life**

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 6.8 x d
	<b>flexible</b>	minimum 5 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +100°C
	<b>flexible</b>	-50°C up to +100°C (following DIN EN 60811-504)
	<b>fixed</b>	-55°C up to +100°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
<b>a max.</b>		80m/s²
<b>Travel distance</b>		Unsupported travels and up to 400m and more for gliding applications, Class 6

## Cable structure

<b>Conductor</b>	Stranded conductor in especially 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 with control pair elements wound with elements for high tensile stresses.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 4 2. Control core: 5
<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires.
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF29D](http://www.igus.eu/CF29D)

36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges



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°			

# Class 7.6.4.1

## Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<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 AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF29D">www.igus.eu/CF29D</a> (from production date 01/2022)
<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 CF9.15.07 - 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>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	5 million		7.5 million		12.5 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	8.5	10	9.5	11	10.5	12
-25/+90	6.8	7.5	7.5	8.5	8.5	9.5
+90/+100	8.5	10	9.5	11	10.5	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heavy-duty applications, Class 7
- Unsupported travels and up to 400m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant, Class 4
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, outdoor cranes, low-temperature applications

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
<b>1 control pair shielded</b>				
<b>CF29.15.15.02.01.D</b>	(4G1.5+(2x1.5)C)	13.0	145	231
<b>CF29.25.15.02.01.D</b>	(4G2.5+(2x1.5)C)C	14.0	199	291
<b>CF29.40.15.02.01.D</b>	(4G4.0+(2x1.5)C)C	15.5	256	367

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



# Hybrid servo cable | PVC | chainflex® CF220.UL.H

**36** 10 million  
Double strokes guaranteed

**10 x d**  
Bend radius, e-chain®

**10m**  
Travel distance, e-chain®

- For medium duty applications
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

New cable suitable for Siemens SINAMICS S210

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C
	<b>fixed</b>	-5°C up to +70°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	2m/s
<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, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). 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)

Example image

EPLAN download, configurators ► [www.igus.eu/CF220ULH](http://www.igus.eu/CF220ULH)

36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges



EU2023

EU2023



Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
Travel distance	1	2	3	4	5	6	7	≥ 400m
Oil resistance	1	2	3	4	highest			
Torsion	1	2	3	4	±360°			

## Class 4.2.2.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
<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>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/CF220ULH">www.igus.eu/CF220ULH</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 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1 Following 2014/35/EU
<b>CE</b>	
<b>UKCA</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.

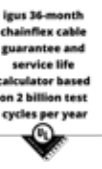
### Guaranteed service life (details see page 28-29)

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]
+5/+15	12.5	13.5	14.5
+15/+60	10	11	12
+60/+70	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
- Light oil influence, Class 2
- No torsion, Class 1
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Wood/stone processing, packaging industry, feeding, handling, adjusting devices



igus® chainflex® CF220.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>				
CF220.UL.H100.07.04	(4G0.75+(2x0.34)C+(2xAWG22)C)C	12.0	110	214
CF220.UL.H101.10.04	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	133	202
CF220.UL.H101.15.04	(4G1.5+(2x0.75)C+(2xAWG22)C)C	13.0	156	230
CF220.UL.H102.25.04	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	203	348
CF220.UL.H102.40.04 <sup>11)</sup>	(4G4.0+(2x1.0)C+(2xAWG22)C)C	16.5	281	434
<b>SEW cable type E/1.5</b>				
CF220.UL.H203.15.04	(4G1.5+(3x1.0)C)C	11.5	133	219
<b>SINAMICS S210</b>				
CF220.UL.H300.03.04	(4Gx0.34+(2x0.34)C+(4xAWG26)C)C	10.0	78	139
CF220.UL.H301.07.04	(4Gx0.75+(2x0.5)C+(4xAWG26)C)C	11.0	100	168
New CF220.UL.H304.15.04	(4G1.5+(2x1.5)C+(4xAWG26)C)C	13.0	159	233
<b>HEIDENHAIN</b>				
CF220.UL.H501.15.04	(4G1.5+(2x0.75)C+(2x2x0.14+2x0.25)C)C	13.5	170	239

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

**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



Drilling machine for wooden plates equipped with latest hybrid cable technology with Hiperface DSL

EPLAN download, configurators ► [www.igus.eu/CF220ULH](http://www.igus.eu/CF220ULH)

Class 4.2.2.1

Part No.	Hybrid technology	Hybrid manufacturer
<b>SICK (HIPERFACE DSL)</b>		
CF220.UL.H100.07.04	SICK (HIPERFACE DSL)	please see selection table on page 278
CF220.UL.H101.10.04	SICK (HIPERFACE DSL)	please see selection table on page 278
CF220.UL.H101.15.04	SICK (HIPERFACE DSL)	please see selection table on page 278
CF220.UL.H102.25.04	SICK (HIPERFACE DSL)	please see selection table on page 278
CF220.UL.H102.40.04 <sup>11)</sup>	SICK (HIPERFACE DSL)	please see selection table on page 278
<b>SEW cable type E/1.5</b>		
CF220.UL.H203.15.04	SEW cable type E/1.5	SEW
<b>SINAMICS S210</b>		
CF220.UL.H300.03.04	SINAMICS S210	Siemens
CF220.UL.H301.07.04	SINAMICS S210	Siemens
CF220.UL.H304.15.04	SINAMICS S210	Siemens
<b>HEIDENHAIN</b>		
CF220.UL.H501.15.04	HEIDENHAIN	B&R



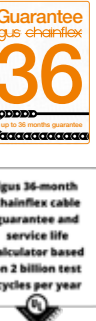
Cables available in the chainflex® CASE

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)



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



**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/s²
	<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



Example image

igus® chainflex® CF280.UL.H

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.



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