

Measuring system 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
Measuring system cables									
Selection chart for chainflex® measuring system cables									240
CF884	PVC	✓	15	+5/+70			3	20	242
CF211	PVC	✓	10	+5/+70			5	3 30	246 New
CF894	iguPUR	✓	15	-20/+80			3	20	252
CF111.D	PUR	✓	10	-25/+80			5	3 30	256 New
CF113.D	PUR	✓	7.5	-25/+80			10	5 50	262
CF11.D	TPE	✓	6.8	-35/+90			10	6 100	268
Twistable measuring system cable (twistable cables chapter ► Page 378)									
CFROBOT4	PUR	✓	10	-25/+80					392

36-month chainflex® guarantee

Guaranteed service life for predictable reliability

► Selection table page 238

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

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® guarantee



Guaranteed service life ⁽¹⁾

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		
Measuring system cables						5 million (1 million) double strokes *		7.5 million (3 million) double strokes *		10 million (5 million) double strokes *			
 CF884	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	17.5 15 17.5		18.5 16 18.5		19.5 17 19.5		242	
 CF211 New!	+5 / +15 +15 / +60 +60 / +70	5	3	30	≤ 10	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		246	
 CF894	-20 / -10 -10 / +70 +70 / +80	3	-	20	≤ 10	17.5 15 17.5		18.5 16 18.5		19.5 17 19.5		252	
 CF111.D New!	-25 / -15 -15 / +70 +70 / +80	5	3	30	≤ 10	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		256	
 CF113.D	-25 / -15 -15 / +70 +70 / +80	10	5	50	≤ 100	10 7.5 10		11 8.5 11		12 9.5 12		262	
						5 million		7.5 million		12.5 million			
 CF11.D	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 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		268

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

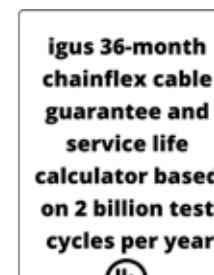
* Higher number of double strokes? Calculate service life online: ► www.igus.eu/chainflexlife
 Figures in brackets refer to series CF884 and CF894



Selection chart for chainflex® measuring system cables

Drive technology system	chainflex® series Class Jacket Page	CF884.yyy	CF211.yyy	CF894.yyy	CF111.yyy.D	CF113.yyy.D	CF11.yyy.D
		3.1.1.1 PVC 242	4.2.2.1 PVC 246	3.1.3.1 PUR 252	4.2.3.1 PUR 256	6.5.3.1 PUR 262	6.6.4.1 TPE 268
Number of cores and conductor nominal cross section[mm²]							
Allen Bradley							
CFxxx.040.D	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C				✓	✓	
B&R							
CFxxx.024.D	((4x0.14)+2x(2x0.34))C		✓		✓		
CFxxx.027.D	(5x(2x0.14)+2x0.5)C		✓		✓	✓	✓
Baumüller							
CFxxx.027.D	(5x(2x0.14)+2x0.5)C		✓		✓	✓	✓
Beckhoff							
CFxxx.007.D	(4x0.34)C						✓
Berger Lahr							
CFxxx.011.D	(4x(2x0.34)+4x0.5)C	✓	✓	✓		✓	✓
Control Techniques							
CFxxx.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	✓	✓		✓	✓	✓
CFxxx.011.D	(4x(2x0.34)+4x0.5)C	✓	✓	✓		✓	✓
CFxxx.026.D	(6x(2x0.25)+(2x0.34)C+2x0.5)C				✓		
ELAU							
CFxxx.009.D	(4x(2x0.25)+2x0.5)C	✓	✓	✓		✓	✓
Fagor							
CFxxx.002.D	(3x(2x0.14)C+2x(0.5)C)C		✓		✓	✓	✓
CFxxx.004.D	(2x(2x2x0.14)+(4x0.14)C+(4x0.5))C				✓	✓	✓
CFxxx.015.D	(4x(2x0.14)+4x0.5)C	✓		✓	✓	✓	✓
FANUC							
CFxxx.021.D	((4x0.25)+3x(2x0.25+2x0.5))C				✓		✓
CFxxx.022.D	((2x0.25)+5x0.5)C	✓		✓	✓	✓	✓
CFxxx.041.D	(2x(2x0.18)+5x0.5)C		✓		✓		
CFxxx.042.D	(3x(2x0.18)+6x0.5)C		✓		✓		
Festo							
CFxxx.002.D	(3x(2x0.14)C+2x(0.5)C)C		✓		✓	✓	✓
Heidenhain							
CFxxx.002.D	(3x(2x0.14)C+2x(0.5)C)C		✓		✓	✓	✓
CFxxx.004.D	(2x(2x2x0.14)+(4x0.14)C+(4x0.5))C				✓	✓	✓
CFxxx.005.D	(4x(2x0.14)+4x0.5)C					✓	✓
CFxxx.015.D	(4x(2x0.14)+4x0.5)C	✓		✓	✓	✓	✓
CFxxx.017.D	(4x(2x0.14)+(4x0.14)C+4x1.0)C		✓			✓	✓
CFxxx.025.D	(3x(2x0.14)C+(2x0.5)C)C				✓	✓	✓
Jetter							
CFxxx.025.D	(3x(2x0.14)C+(2x0.5)C)C				✓	✓	✓
Lenze							
CFxxx.002.D	(3x(2x0.14)C+2x(0.5)C)C		✓		✓	✓	✓
CFxxx.010.D	(4x(2x0.25)+2x1.0)C		✓			✓	✓
CFxxx.025.D	(3x(2x0.14)C+(2x0.5)C)C					✓	✓
CFxxx.032.D	3x(2x0.14)C+(3x0.14)C		✓			✓	✓
CFxxx.033.D	4x(2x0.14)C+2x(1.0)C		✓			✓	✓
CFxxx.034.D	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C				✓	✓	✓

Drive technology system	chainflex® series Class Jacket Page	CF884.yyy	CF211.yyy	CF894.yyy	CF111.yyy.D	CF113.yyy.D	CF11.yyy.D
		3.1.1.1 PVC 242	4.2.2.1 PVC 246	3.1.3.1 PUR 252	4.2.3.1 PUR 256	6.5.3.1 PUR 262	6.6.4.1 TPE 268
Number of cores and conductor nominal cross section[mm²]							
LTi DRIVES							
CFxxx.004.D	(2x(2x2x0.14)+(4x0.14)C+(4x0.5))C				✓	✓	✓
CFxxx.009.D	(4x(2x0.25)+2x0.5)C	✓	✓	✓		✓	✓
CFxxx.010.D	(4x(2x0.25)+2x1.0)C		✓				✓
NUM							
CFxxx.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	✓	✓	✓			✓
Omron							
CFxxx.008.D	(3x(2x0.25))C					✓	✓
CFxxx.009.D	(4x(2x0.25)+2x0.5)C	✓	✓	✓		✓	✓
CFxxx.010.D	(4x(2x0.25)+2x1.0)C		✓			✓	✓
CFxxx.018.D	(2x(2x0.25)+2x0.5)C		✓			✓	✓
CFxxx.019.D	(3x(2x0.25)C+(3x0.25)+2x1.0)C		✓			✓	✓
Rexroth							
CFxxx.009.D	(4x(2x0.25)+2x0.5)C	✓	✓	✓		✓	✓
CFxxx.010.D	(4x(2x0.25)+2x1.0)C		✓			✓	✓
CFxxx.017.D	(4x(2x0.14)+(4x0.14)C+4x1.0)C		✓			✓	✓
CFxxx.018.D	(2x(2x0.25)+2x0.5)C		✓			✓	✓
CFxxx.019.D	(3x(2x0.25)C+(3x0.25)+2x1.0)C		✓			✓	✓
Schneider Electric							
CFxxx.009.D	(4x(2x0.25)+2x0.5)C	✓	✓	✓		✓	✓
SEW							
CFxxx.008.D	(3x(2x0.25))C					✓	
CFxxx.036.D	(5x(2x0.25))C		✓			✓	
CFxxx.037.D	(6x(2x0.25))C		✓			✓	
Siemens							
CFxxx.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	✓	✓	✓		✓	✓
CFxxx.002.D	(3x(2x0.14)C+2x(0.5)C)C		✓			✓	✓
CFxxx.006.D	(3x(2x0.14)C+2x0.5+4x0.14+4x0.23)C	✓	✓	✓		✓	✓
CFxxx.011.D	(4x(2x0.34)+4x0.5)C	✓	✓	✓		✓	✓
CFxxx.028.D	(2x(2x0.15)+(2x0.38))C	✓	✓	✓	✓	✓	✓
Stöber							
CFxxx.008.D	(3x(2x0.25))C					✓	✓
CFxxx.009.D	(4x(2x0.25)+2x0.5)C	✓	✓	✓		✓	✓
CFxxx.011.D	(4x(2x0.34)+4x0.5)C	✓	✓	✓	✓	✓	✓
CFxxx.016.D	(3x(2x0.25)C)C		✓				
CFxxx.021.D	(3x(2x0.5+2x0.25)+(4x0.25))C				✓		✓



Measuring system cable | PVC | chainflex® CF884

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

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

Cable structure

Conductor	Conductor consisting of bare copper wires (according to DIN EN 60228).
Core insulation	Mechanically high-quality TPE mixture.
Core structure	According to measuring system specification.
Core identification	According to measuring system specification. ▶ Product range table
Element shield	Foil taping of optimised, bending-resistant foil shield. Coverage approx. 100% optical
Overall shield	Braiding made of tinned copper wires. Coverage approx. 60% optical
Outer jacket	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: Yellow-green (similar to RAL 6018)

Electrical information

Nominal voltage	50V 30V (following UL)
Testing voltage	500V

Class 3.1.1.1

Properties and approvals

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)
UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
UL/CSA AWM	See data sheet for details ▶ www.igus.eu/CF884
NFPA	Following NFPA 79-2018, chapter 12.9
EAC	Certificate No. RU C-DE.ME77.B.00295/19
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
CE	Following 2014/35/EU
UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

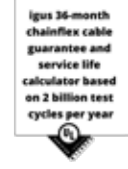
Guaranteed service life (details see page 28-29)

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

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



Measuring system cable | PVC | chainflex® CF884

Class 3.1.1.1

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]
CF884.001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	8.5	41	91
CF884.006	(3x(2x0.14)C+(4x0.14)+(4x0.22)+(2x0.5))C	9.0	50	101
CF884.009	(4x(2x0.25)+2x0.5)C	8.0	44	91
CF884.011	(4x(2x0.34)+4x0.5)C	9.5	64	117
CF884.015	(4x(2x0.14)+4x0.5)C	8.5	44	92
CF884.022	((2x0.25)+5x0.5)C	8.0	44	79
CF884.028	(2x(2x0.15)+(2x0.38))C	7.5	41	58

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

Part No.	Core group	Colour code
CF884.001	3x(2x0.14)C	green/yellow, black/brown, red/orange
	4x0.14	grey, blue, white-yellow, white-black
	2x0.5	brown-red, brown-blue
CF884.006	3x(2x0.14)C	green/yellow, black/brown, red/orange
	4x0.14	grey, blue, white-yellow, white-black
	4x0.22	yellow-brown, grey-brown, green-black, green-red
	2x0.5	brown-red, brown-blue
CF884.009	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x0.5	white, brown
CF884.011	4x(2x0.34)	black/brown, red/orange, yellow/green, blue/violet
	4x0.5	blue-white, black-white, red-white, yellow-white
CF884.015	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
	4x0.5	blue, white, brown-green, white-green
CF884.022	2x0.25	white, brown
	5x0.5	green, yellow, grey, pink, blue
CF884.028	2x(2x0.15)	green/yellow, pink/blue
	2x0.38	red/black

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

cost down...



...life up

Reduce cost, improve technology, now!

Do the chainflex® price check ...

www.igus.eu/cf-price-check

... for example: Reduce bend radius with CF113.D ...

- Order example: CF884.015 – to your desired length (0.5m steps)**
CF884 chainflex® series .015 Code measuring system type
- Order online ► www.igus.eu/CF884
- Delivery time 24hrs or today.
Delivery time means time until goods are shipped.

EPLAN download, configurators ► www.igus.eu/CF884



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

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

Measuring system cable | PVC | chainflex® CF211






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

 Bend radius	e-chain® linear	minimum 10 x d
	flexible	minimum 8 x d
	fixed	minimum 5 x d
 Temperature	e-chain® linear	+5°C up to +70°C
	flexible	-5°C up to +70°C (following DIN EN 60811-504)
	fixed	-15°C up to +70°C (following DIN EN 50305)
 v max.	unsupported	5m/s
	gliding	3m/s
 a max.		30m/s²
 Travel distance		Unsupported travels and up to 10m for gliding applications, Class 2

Cable structure

 Conductor	Very finely stranded special conductors of particularly bending resistant design made of tinned copper wires.
 Core insulation	Mechanically high-quality TPE mixture.
 Core structure	According to measuring system specification.
 Core identification	According to measuring system specification. ► Product range table
 Element shield	Extremely bending-resistant, tinned copper cover. Coverage approx. 90% optical
 Element shield	TPE mixture on pair shielding adapted to suit the requirements in e-chains®.
 Intermediate layer	Foil taping over the outer layer.
 Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
 Outer jacket	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Yellow-green (similar to RAL 6018)

Electrical information

 Nominal voltage	50V 300V (following UL)
 Testing voltage	500V

EPLAN download, configurators ► www.igus.eu/CF211

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	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

Class 4.2.2.1

Properties and approvals

 Oil resistance	Oil-resistant (following DIN EN 50363-4-1), Class 2
 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)
 UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
 UL/CSA AWM	See data sheet for details ► www.igus.eu/CF211
 NFPA	Following NFPA 79-2018, chapter 12.9
 EAC	Certificate No. RU C-DE.ME77.B.00295/19
 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 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1
 CE	Following 2014/35/EU
 UKCA	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

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
- Storage and retrieval units, machining units/package machines, handling, indoor cranes, wood/stone processing



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



Measuring system cable | PVC | chainflex® CF211

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]
CF211.001	(3x(2x0.14)C)+(4x0.14)+(2x0.5)C	9.0	64	100
CF211.002	(3x(2x0.14)C)+2x(0.5)C	9.5	66	106
CF211.004	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	10.0	70	115
CF211.006	(3x(2x0.14)C)+(4x0.14)+(4x0.25)+(2x0.5)C	10.0	76	122
CF211.009	(4x(2x0.25)+2x0.5)C	8.0	49	79
CF211.010	(4x(2x0.25)+2x1.0)C	8.5	61	92
CF211.011	(4x(2x0.34)+4x0.5)C	9.5	72	109
CF211.014	(4x(2x0.25)C)+(2x0.5)C	10.5	77	124
CF211.015	(4x(2x0.14)+4x0.5)C	8.5	54	86
CF211.016	(3x(2x0.25)C)C	9.0	51	89
CF211.017	(4x(2x0.14)+(4x0.14)C)+4x1.0)C	10.0	92	134
CF211.018	(2x(2x0.25)+2x0.5)C	6.5	34	54
CF211.019	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	10.0	86	125
CF211.022	((2x0.25)+5x0.5)C	7.0	46	71
CF211.024	((4x0.14)+2x(2x0.34))C	7.0	36	61
CF211.027	(5x(2x0.14)+2x0.5)C	8.0	45	75

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

Part No.	Core group	Colour code
CF211.001	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(2x0.5)	brown-red, brown-blue
CF211.002	3x(2x0.14)C	green/yellow, black/brown, red/orange
	2x(0.5)C	black, red
CF211.004	2x(2x(2x0.14))	(brown/green)/(yellow/violet), (grey/pink)/(red/black)
	(4x0.14)C	yellow-black/red-black/green-black/blue-black
	(4x0.5)	brown-green/white-green/blue/white
CF211.006	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(4x0.25)	yellow-brown/grey-brown/green-black/green-red
	(2x0.5)	brown-red, brown-blue
CF211.009	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x0.5	white, brown
CF211.010	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x1.0	white, brown
CF211.011	4x(2x0.34)	black/brown, red/orange, green/yellow, blue/violet
	4x0.5	black-white, red-white, yellow-white, blue-white
CF211.014	4x(2x0.25)C	white/brown, green/yellow, grey/pink, blue/red
	(2x0.5)	black no. 1/black no. 2
CF211.015	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
	4x0.5	blue, white, brown-green, white-green
CF211.016	3x(2x0.25)C	white/brown, green/yellow, grey/pink
CF211.017	4x(2x0.14)	red/black, brown/green, yellow/violet, grey/pink
	(4x0.14)C	blue-black/yellow-black/red-black/green-black
	4x1.0	white-green, brown-green, blue, white
CF211.018	2x(2x0.25)	red/black, grey/pink
	2x0.5	white, brown
CF211.019	3x(2x0.25)C	brown/green, grey/pink, red/black
	(3x0.25)	blue/violet/yellow
	2x1.0	white, brown
CF211.022	(2x0.25)	white/brown
	5x0.5	green, yellow, grey, pink, blue
CF211.024	(4x0.14)	yellow/grey/violet/pink
	2x(2x0.34)	white-green/white, brown-green/blue
CF211.027	5x(2x0.14)	brown/green, yellow/grey, white/violet, red/black, pink/blue
	2x0.5	white-green, white-red

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

CFRIP
UL LISTED
UL US
nec
NFPA
CUPA
DNV
EAC
REACH
RoHS
clean-room

CE
UK
CA

EPLAN download, configurators ► www.igus.eu/CF211

Further cable types ► Page 250

Measuring system cable | PVC | chainflex® CF211

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]
CF211.028	(2x(2x0.15)+(2x0.38))C	7.5	40	77
CF211.032 ⁵⁾	3x(2x0.14)C+(3x0.14)C	8.0	35	79
CF211.033 ⁵⁾	4x(2x0.14)C+2x(1.0)C	9.5	64	112
CF211.036	(5x(2x0.25))C	8.0	42	69
CF211.037	(6x(2x0.25))C	8.5	51	83
CF211.038	(3x(2x0.14)+(2x0.34))C	7.5	33	62
CF211.039	(4x(2x0.14)C+2x(0.5)C)C	10.0	77	125
New CF211.041	(2x(2x0.18)+5x0.5)C	7.5	49	79
New CF211.042	(3x(2x0.18)+6x0.5)C	8.5	62	98

⁵⁾ Manufactured without overall shield

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 248



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



Part No.	Core group	Colour code
CF211.028	2x(2x0.15) (2x0.38)	green/yellow, pink/blue red/black
CF211.032 ⁵⁾	3x(2x0.14)C (3x0.14)C	green/black, yellow/black, red/black grey/pink/black
CF211.033 ⁵⁾	4x(2x0.14)C 2x(1.0)C	yellow/black, red/black, blue/black, green/black white, brown
CF211.036	5x(2x0.25)	white/brown green/yellow, grey/pink, blue/red, black/violet
CF211.037	6x(2x0.25)	white/brown, green/yellow, grey/pink, blue/red, black/violet, grey-pink/red-blue
CF211.038	3x(2x0.14) (2x0.34)	white/brown, green/yellow, grey/pink blue/red
CF211.039	(4x(2x0.14)C 2x(0.5)C	green/yellow, grey/pink, blue/red, black/violet brown, black
CF211.041	2x(2x0.18) 5x0.5	white/brown, black/violet blue, violet, green, yellow, grey
CF211.042	3x(2x0.18) 6x0.5	white/black, red/white, black/red black no. 1, black no. 2, black no. 3, red no. 4, red no. 5, red no. 6

cost down...



...life up

Reduce cost, improve technology, now!

Do the chainflex® price check ...

www.igus.eu/cf-price-check

... for example: reduce cost with CF884 ...

Order example: **CF211.038** – to your desired length (0.5m steps)
CF211 chainflex® series .038 Code measuring system type

Order online ► www.igus.eu/CF211

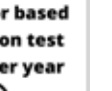
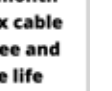
Delivery time 24hrs or today.
Delivery time means time until goods are shipped.



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



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



Measuring system cable | iguPUR | chainflex® CF894

- 36** 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

Bend radius	e-chain® linear	minimum 15 x d
	flexible	minimum 12 x d
	fixed	minimum 8 x d
Temperature	e-chain® linear	-20°C up to +80°C
	flexible	-40°C up to +80°C (following DIN EN 60811-504)
	fixed	-50°C up to +80°C (following DIN EN 50305)
v max.	unsupported	3m/s
a max.		20m/s²
Travel distance		Unsupported travels up to 10m, Class 1

Cable structure

Conductor	Conductor consisting of bare copper wires (according to DIN EN 60228).
Core insulation	Mechanically high-quality TPE mixture.
Core structure	According to measuring system specification.
Core identification	According to measuring system specification. ► Product range table
Element shield	Foil taping of optimised, bending-resistant foil shield. Coverage approx. 100% optical
Overall shield	Braiding made of tinned copper wires. Coverage approx. 60% optical
Outer jacket	Low-adhesion iguPUR mixture, adapted to suit the requirements in e-chains®. Colour: Yellow-green (similar to RAL 6018)

Electrical information

Nominal voltage	50V 30V (following UL)
Testing voltage	500V

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

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
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)
UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
UL/CSA AWM	See data sheet for details ► www.igus.eu/CF894
NFPA	Following NFPA 79-2018, chapter 12.9
EAC	Certificate No. RU C-DE.ME77.B.00295/19
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
CE	Following 2014/35/EU
UKCA	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

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



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

EPLAN download, configurators ► www.igus.eu/CF894

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



EU2023

EU2023



UL-verified chainflex® guarantee ... www.igus.eu/ul-verified

Measuring system cable | iguPUR | chainflex® CF894

Class 3.1.3.1

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]
CF894.001	(3x(2x0.14)C)+(4x0.14)+(2x0.5)C	8.5	41	80
CF894.006	(3x(2x0.14)C)+(4x0.14)+(4x0.22)+(2x0.5)C	9.0	50	105
CF894.009	(4x(2x0.25)+2x0.5)C	8.0	44	80
CF894.011	(4x(2x0.34)+4x0.5)C	9.5	64	126
CF894.015	(4x(2x0.14)+4x0.5)C	8.5	44	84
CF894.022	((2x0.25)+5x0.5)C	8.0	44	78
CF894.028	(2x(2x0.15)+(2x0.38))C	7.5	41	57

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

Part No.	Core group	Colour code
CF894.001	3x(2x0.14)C	green/yellow, black/brown, red/orange
	4x0.14	grey, blue, white-yellow, white-black
	2x0.5	brown-red, brown-blue
CF894.006	3x(2x0.14)C	green/yellow, black/brown, red/orange
	4x0.14	grey, blue, white-yellow, white-black
	4 x 0.22	yellow-brown, grey-brown, green-black, brown-red
CF894.009	2x0.5	brown-red, brown-blue
	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
CF894.011	2x0.5	white/brown
	4x(2x0.34)	black/brown, red/orange, yellow/green, blue/violet
CF894.015	4x0.5	blue-white, black-white, red-white, yellow-white
	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
CF894.022	4x0.5	blue, white, brown-green, white-green
	2x0.25	white, brown
CF894.028	5x0.5	green, yellow, grey, pink, blue
	2x(2x0.15)	green/yellow, pink/blue
	2x0.38	red/black

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

cost down...

...life up

Reduce cost, improve technology, now!

Do the chainflex® price check ...

www.igus.eu/cf-price-check

... for example: Reduce bend radius with CF113.D ...

- Order example: CF894.011 – to your desired length (0.5m steps)**
CF894 chainflex® series .011 Code measuring system type
- Order online ► www.igus.eu/CF894
- Delivery time 24hrs or today.
Delivery time means time until goods are shipped.

EPLAN download, configurators ► www.igus.eu/CF894

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

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

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Measuring system cable | PUR | chainflex® CF111.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
- Flame-retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

Dynamic information

	Bend radius	e-chain® linear	minimum 10 x d
		flexible	minimum 8 x d
		fixed	minimum 5 x d
	Temperature	e-chain® linear	-25°C up to +80°C
		flexible	-40°C up to +80°C (following DIN EN 60811-504)
		fixed	-50°C up to +80°C (following DIN EN 50305)
	v max.	unsupported	5m/s
		gliding	3m/s
	a max.		30m/s²
	Travel distance	Unsupported travels and up to 10m for gliding applications, Class 2	

Cable structure

	Conductor	Very finely stranded special conductors of particularly bending resistant design made of tinned copper wires.
	Core insulation	Mechanically high-quality TPE mixture.
	Core structure	According to measuring system specification.
	Core identification	According to measuring system specification. ► Product range table
	Element shield	Extremely bending-resistant, tinned copper cover. Coverage approx. 90% optical
	Element shield	TPE mixture on pair shielding adapted to suit the requirements in e-chains®.
	Intermediate layer	Foil taping over the outer layer.
	Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
	Outer jacket	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Yellow-green (similar to RAL 6018)

Electrical information

	Nominal voltage	50V 300V (following UL)
	Testing voltage	500V

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

	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
	UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
	UL/CSA AWM	See data sheet for details ► www.igus.eu/CF111D
	NFPA	Following NFPA 79-2018, chapter 12.9
	DNV	Type Approval Certificate TAE00003X4
	EAC	Certificate No. RU C-DE.ME77.B.00295/19
	REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
	Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
	Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with CF77.UL.05.12.D - tested by IPA according to standard DIN EN ISO 14644-1
	DESINA	According to VDW, DESINA standardisation
	CE	Following 2014/35/EU
	UK CA	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

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® CF111.D

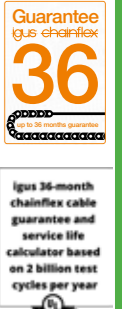


Example image

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF111.001.D	(3x(2x0.14)C)+(4x0.14)+(2x0.5)C	9.5	64	104
CF111.002.D	(3x(2x0.14)C)+2x(0.5)C	9.5	66	109
CF111.004.D	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	10.5	70	116
CF111.006.D	(3x(2x0.14)C)+(4x0.14)+(4x0.25)+(2x0.5)C	10.0	76	122
CF111.009.D	(4x(2x0.25)+2x0.5)C	8.0	49	79
CF111.010.D	(4x(2x0.25)+2x1.0)C	8.5	61	94
CF111.011.D	(4x(2x0.34)+4x0.5)C	9.5	72	115
CF111.014.D	(4x(2x0.25)C)+(2x0.5)C	10.5	77	124
CF111.015.D	(4x(2x0.14)+4x0.5)C	8.5	54	87
CF111.020.D	(3x(2x0.14)+2x(4x0.14)+(2x0.5)C	8.5	52	87
CF111.021.D	((4x0.25)+3x(2x0.25+2x0.5)C	9.5	80	117
CF111.022.D	((2x0.25)+5x0.5)C	7.0	46	75
CF111.024.D	((4x0.14)+2x(2x0.34))C	7.0	36	61
CF111.026.D	(6x(2x0.25)+(2x0.34)C)+(2x0.5)C	10.5	74	119

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

Part No.	Core group	Colour code
CF111.001.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(2x0.5)	brown-red/brown-blue
CF111.002.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	2x(0.5)C	black, red
CF111.004.D	2x(2x(2x0.14))	(brown/green)/(yellow/violet), (grey/pink)/(red/black)
	(4x0.14)C	yellow-black/red-black/green-black/blue-black
	(4x0.5)	brown-green/white-green/blue/white
CF111.006.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(4x0.25)	yellow-brown/grey-brown/green-black/green-red
CF111.009.D	(2x0.5)	brown-red/brown-blue
	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
CF111.010.D	2x0.5	white, brown
	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
CF111.011.D	2x1.0	white, brown
	4x(2x0.34)	black/brown, red/orange, green/yellow, blue/violet
CF111.014.D	4x0.5	black-white, red-white, yellow-white, blue-white
	4x(2x0.25)C	white/brown, green/yellow, grey/pink, blue/red
CF111.015.D	(2x0.5)	black no. 1/black no. 2
	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
CF111.020.D	4x0.5	blue, white, brown-green, white-green
	3x(2x0.14)	blue/red, black/violet, grey-pink/red-blue
	2x(4x0.14)	green/grey/yellow/pink, white-green/white-yellow/brown-green/yellow-brown
CF111.021.D	(2x0.5)	white/brown
	(2x0.5)	white/brown
	3x2x0.5	black no. 1/black no. 2, black no. 3/black no. 4, black no. 5/black no. 6
CF111.022.D	(4x0.25)	white/brown/grey/black
	3x2x0.25	white/yellow, white/grey, black/orange
CF111.024.D	(2x0.25)	white/brown
	5x0.5	green, yellow, grey, pink, blue
CF111.026.D	(4x0.14)	yellow/grey/violet/pink
	2x(2x0.34)	white-green/white, brown-green/blue
CF111.026.D	6x(2x0.25)	green/yellow, grey/pink, blue/red, black/violet, grey-pink/red-blue, white-green/brown-green
	(2x0.34)C	white/brown
	(2x0.5)	blue/red





Example image

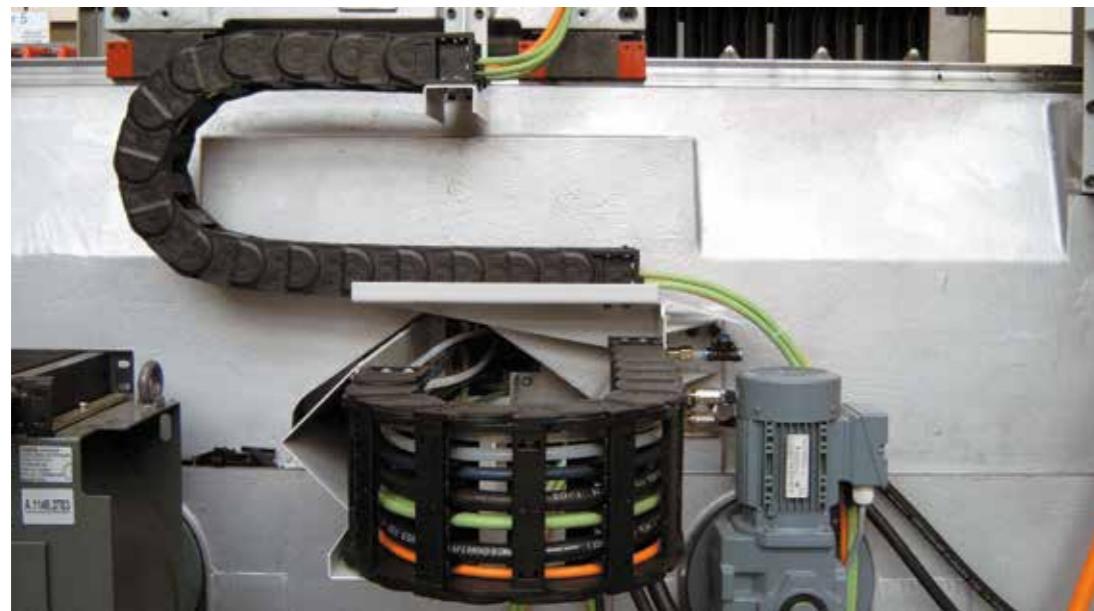
Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF111.027.D	(5x(2x0.14)+2x0.5)C	8.0	45	76
CF111.028.D	(2x(2x0.15)+(2x0.38))C	7.5	40	73
CF111.032.D ⁵⁾	3x(2x0.14)C+(3x0.14)C	8.5	35	82
CF111.040.D	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	81	118
New CF111.041.D	(2x(2x0.18)+5x0.5)C	7.5	49	80
New CF111.042.D	(3x(2x0.18)+6x0.5)C	8.5	62	99

⁵⁾ Manufactured without overall shield

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

Part No.	Core group	Colour code
CF111.027.D	5x(2x0.14) 2x0.5	brown/green, yellow/grey, white/violet, red/black, pink/blue white-green, white-red
CF111.028.D	2x(2x0.15) (2x0.38)	green/yellow, pink/blue red/black
CF111.032.D ⁵⁾	3x(2x0.14)C (3x0.14)C	green/black, yellow/black, red/black grey/pink/black
CF111.040.D	3x(4x0.14) (2x0.14+2x0.34) 2x1.5	black/red/white-black/white-red, green/blue/white-green/white-blue, yellow/brown/white-yellow/white-brown violet/orange/weißviolet/weißorange white-grey, grey
CF111.041.D	2x(2x0.18) 5x0.5	white/brown, black/violet blue, violet, green, yellow, grey
CF111.042.D	3x(2x0.18) 6x0.5	white/black, red/white, black/red black no. 1, black no. 2, black no. 3, red no. 4, red no. 5, red no. 6

Further cable types ▶ Page 258



readychain® systems from igus® are completely pre-harnessed with chainflex® cables, hoses, metal parts etc.

EPLAN download, configurators ▶ www.igus.eu/CF111D

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

**cost down...
...life up**

Reduce cost, improve technology, now!

Do the chainflex® price check ...
www.igus.eu/cf-price-check

... for example: [reduce cost with CF211 ...](#)

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

Measuring system cable | PUR | chainflex® CF113.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
- Flame-retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

DriveCliqu with
300V UL approval

Dynamic information

Bend radius	e-chain® linear	minimum 7.5 x d
	flexible	minimum 6 x d
	fixed	minimum 4 x d
Temperature	e-chain® linear	-25°C up to +80°C
	flexible	-40°C up to +80°C (following DIN EN 60811-504)
	fixed	-50°C up to +80°C (following DIN EN 50305)
v max.	unsupported	10m/s
	gliding	5m/s
a max.		50m/s²
Travel distance		Unsupported travels and up to 100m for gliding applications, Class 5

Cable structure

Conductor	Stranded conductor in especially bending-resistant version consisting of tinned copper wires (following DIN EN 60228).
Core insulation	Mechanically high-quality TPE mixture.
Core structure	According to measuring system specification.
Core identification	According to measuring system specification. ► Product range table
Element shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
Element shield	TPE mixture on pair shielding adapted to suit the requirements in e-chains®.
Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
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: Yellow-green (similar to RAL 6018)
CFRIP®	Strip cables faster: a tear strip is moulded into the inner jacket Video ► www.igus.eu/CFRIP

Electrical information

Nominal voltage	50V 300V (following UL)
Testing voltage	500V

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

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
UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
UL/CSA AWM	See data sheet for details ► www.igus.eu/CF113D
NFPA	Following NFPA 79-2018, chapter 12.9
DNV	Type Approval Certificate TAE00003X4
EAC	Certificate No. RU C-DE.ME77.B.00295/19
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
RoHS	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with CF77.UL.05.12.D - tested by IPA according to standard DIN EN ISO 14644-1
DESINA	According to VDW, DESINA standardisation
CE	Following 2014/35/EU
UK CA	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

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 without direct sun radiation
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, indoor cranes, low temperature applications

Guarantee
igus chainflex
36
months

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

CFRIP
if

LISTED

UL

NEC

NFPA

CE

DNV

EAC

REACH

RoHS

Cleanroom

DESINA

CE

UK CA

Example image

igus® chainflex® CF113.D

Measuring system cable | PUR | chainflex® CF113.D

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF113.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]
CF113.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	71	137
CF113.002.D	(3x(2x0.14)C+2x(0.5)C)C	10.0	74	144
CF113.003.D	(3x(2x0.14)+2x1.0)C	8.0	56	103
CF113.004.D	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	11.0	78	152
CF113.005.D	(4x(2x0.14)+4x0.5)C	9.0	60	115
CF113.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0	85	158
CF113.007.D ²⁾	(4x0.34)C	6.5	31	54
CF113.008.D	(3x(2x0.25))C	7.5	36	76
CF113.009.D	(4x(2x0.25)+2x0.5)C	8.5	57	99
CF113.010.D	(4x(2x0.25)+2x1.0)C	9.0	68	122
CF113.011.D	(4x(2x0.34)+4x0.5)C	10.0	81	142
CF113.013.D	(3x(2x0.14)C+2x0.5)C	9.0	62	121
CF113.014.D	(4x(2x0.25)C+(2x0.5))C	11.0	86	163
CF113.015.D	(4x(2x0.14)+4x0.5)C	9.0	60	114
CF113.016.D	(3x(2x0.25)C)C	10.0	60	126
CF113.017.D ⁴⁾	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0	100	150
CF113.018.D ⁴⁾	(2x(2x0.25)+2x0.5)C	6.5	41	65

The chainflex® types marked with ²⁾ are cables designed as a star-quad.
⁴⁾ Manufactured without inner jacket

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

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

Part No.	Core group	Colour code
CF113.001.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(2x0.5)	brown-red/brown-blue
CF113.002.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	2x(0.5)C	black, red
CF113.003.D	3x(2x0.14)	white/brown, green/yellow, grey/pink
	2x1.0	blue, red
CF113.004.D	2x(2x(2x0.14))	(brown/green)/(yellow/violet), (grey/pink)/(red/black)
	(4x0.14)C	yellow-black/red-black/green-black/blue-black
	(4x0.5)	brown-green/white-green/blue/white
CF113.005.D	4x(2x0.14)	white/brown, green/yellow, grey/pink, blue/red
	4x0.5	black, violet, grey-pink, red-blue
CF113.006.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(4x0.25)	yellow-brown/grey-brown/green-black/green-red
	(2x0.5)	brown-red/brown-blue
CF113.007.D ²⁾	4x0.34	white, green, brown, yellow (star-quad)
CF113.008.D	3x(2x0.25)	white/brown, green/yellow, grey/pink
CF113.009.D	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x0.5	white, brown
CF113.010.D	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x1.0	white, brown
CF113.011.D	4x(2x0.34)	black/brown, red/orange, green/yellow, blue/violet
	4x0.5	black-white, red-white, yellow-white, blue-white
CF113.013.D	3x(2x0.14)C	white/brown, green/yellow, grey/pink
	2x0.5	blue, red
CF113.014.D	4x(2x0.25)C	white/brown, green/yellow, grey/pink, blue/red
	(2x0.5)	black no. 1/black no. 2
CF113.015.D	(4x(2x0.15))C	brown/green, yellow/violet, grey/pink, red/black
	4x0.5	blue, white, brown-green, white-green
CF113.016.D	3x(2x0.25)C	white/brown, green/yellow, grey/pink
CF113.017.D ⁴⁾	4x(2x0.14)	red/black, brown/green, yellow/violet, grey/pink
	(4x0.14)C	blue-black/yellow-black/red-black/green-black
	4x1.0	white-green, brown-green, blue, white
CF113.018.D ⁴⁾	2x(2x0.25)	red/black, grey/pink
	2x0.5	white, brown

Further cable types ► Page 266



Measuring system cable | PUR | chainflex® CF113.D

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF113.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]
CF113.019.D ⁴⁾	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	10.0	93	143
CF113.022.D	((2x0.25)+5x0.5)C	8.0	54	94
CF113.025.D	(3x(2x0.14)C)+(2x0.5)C)C	10.0	72	141
CF113.027.D	(5x(2x0.14)+2x0.5)C	9.0	52	105
CF113.028.D ⁴⁾	(2x(2x0.20)+(2x0.38))C	7.5	44	69
CF113.029.D	(5x(2x0.25)C)+(2x0.25+2x0.5)C	12.0	105	192
CF113.031.D	(2x(2x0.25)C+2x1.0)C	9.5	69	133
CF113.032.D ⁵⁾	3x(2x0.14)C+(3x0.14)C	8.5	35	82
CF113.033.D ⁵⁾	4x(2x0.14)C+2x(1.0)C	9.5	64	111
CF113.036.D	(5x(2x0.25))C	8.5	51	103
CF113.037.D	(6x(2x0.25))C	9.0	58	114
CF113.038.D	(3x(2x0.14)+(2x0.34))C	8.5	36	87
CF113.040.D	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	88	155

⁴⁾ Manufactured without inner jacket
⁵⁾ Manufactured without overall shield

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 264



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



EPLAN download, configurators ► www.igus.eu/CF113D

Class 6.5.3.1

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°			

Part No.	Core group	Colour code
CF113.019.D ⁴⁾	3x(2x0.25)C (3x0.25) 2x1.0	brown/green, grey/pink, red/black blue/violet/yellow white, brown
CF113.022.D	(2x0.25) 5x0.5	white/brown green, yellow, grey, pink, blue
CF113.025.D	3x(2x0.14)C (2x0.5)C	green/yellow, blue/red, grey/pink white/brown
CF113.027.D	5x(2x0.14) 2x0.5	brown/green, yellow/grey, white/violet, red/black, pink/blue white-green, white-red
CF113.028.D ⁴⁾	2x(2x0.20) (2x0.38)	green/yellow, pink/blue red/black
CF113.029.D	5x(2x0.25)C (2x0.25+2x0.5)	white/brown green/yellow, grey/pink, blue/red, black/violet grey-pink/brown-green/white-green/red-blue
CF113.031.D	2x(2x0.25)C 2x1.0	white/brown, green/yellow black no. 1, black no. 2
CF113.032.D ⁵⁾	3x(2x0.14)C (3x0.14)C	green/black, yellow/black, red/black grey/pink/black
CF113.033.D ⁵⁾	4x(2x0.14)C 2x(1.0)C	yellow/black, red/black, blue/black, green/black white, brown
CF113.036.D	5x(2x0.25)	white/brown green/yellow, grey/pink, blue/red, black/violet
CF113.037.D	6x(2x0.25)	white/brown, green/yellow, grey/pink, blue/red, black/violet, grey-pink/red-blue
CF113.038.D	3x(2x0.14) (2x0.34)	white/brown, green/yellow, grey/pink blue/red
CF113.040.D	3x(4x0.14) (2x0.14+2x0.34) 2x1.5	black/red/white-black/white-red, green/blue/white-green/white-blue, yellow/brown/white-yellow/white-brown violett/orange/weißviolett/weißorange white-grey, grey



chainflex® measuring system cables in a double-spindle machining centre.



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

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

Measuring system cable | TPE | chainflex® CF11.D

- 36** 12.5 million Double strokes guaranteed
- 6.8 x d** Bend radius, e-chain®
- 400m** Travel distance, e-chain®

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

Now available with UL approval & 25% longer service life

Dynamic information

Bend radius	e-chain® linear flexible	minimum 6.8 x d minimum 5 x d
	fixed	minimum 4 x d
Temperature	e-chain® linear flexible	-35°C up to +90°C -50°C up to +90°C (following DIN EN 60811-504)
	fixed	-55°C up to +90°C (following DIN EN 50305)
v max.	unsupported	10m/s
	gliding	6m/s
a max.		100m/s ²
Travel distance		Unsupported travels and up to 400m and more for gliding applications, Class 6

Cable structure

Conductor	Stranded conductor in especially bending-resistant version consisting of tinned copper wires (following DIN EN 60228).
Core insulation	Mechanically high-quality TPE mixture.
Core structure	According to measuring system specification.
Core identification	According to measuring system specification. ▶ Product range table
Element shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
Element shield	TPE mixture on pair shielding adapted to suit the requirements in e-chains®.
Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
Outer jacket	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Yellow-green (similar to RAL 6018)
CFRIP®	Strip cables faster: a tear strip is moulded into the inner jacket Video ▶ www.igus.eu/CFRIP

Electrical information

Nominal voltage	50V 300V (following UL)
Testing voltage	500V

Class 6.6.4.1

Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
Halogen-free	Following DIN EN 60754
UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
UL AWM	See data sheet for details ▶ www.igus.eu/CF11D
EAC	Certificate No. RU C-DE.ME77.B.00295/19
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
RoHS	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	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
DESINA	According to VDW, DESINA standardisation
CE	Following 2014/35/EU
UKCA	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/+80	6.8	7.5	7.5	8.5	8.5	9.5
+80/+90	8.5	10	9.5	11	10.5	12

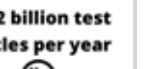
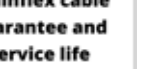
* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife

Typical application areas

- For heavy-duty applications, Class 6
- Unsupported travels and up to 400m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Indoor and outdoor applications without direct sun radiation
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, indoor cranes, low temperature applications



Example image



Measuring system cable | TPE | chainflex® CF11.D

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF11.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]
CF11.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	71	119
CF11.002.D	(3x(2x0.14)C+2x(0.5)C)C	10.0	74	125
CF11.003.D	(3x(2x0.14)+2x1.0)C	8.0	56	86
CF11.004.D ¹¹⁾	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	11.0	78	127
CF11.005.D	(4x(2x0.14)+4x0.5)C	9.0	60	97
CF11.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.5	85	139
CF11.007.D ²⁾	(4x0.34)C	6.0	31	48
CF11.008.D	(3x(2x0.25))C	7.5	36	60
CF11.009.D	(4x(2x0.25)+2x0.5)C	8.5	57	91
CF11.010.D	(4x(2x0.25)+2x1.0)C	9.0	68	105
CF11.011.D	(4x(2x0.34)+4x0.5)C	10.0	81	124
CF11.012.D	(3x(2x0.14)C+(3x0.14)C+(4x0.14)+(2x0.14+2x0.5))C	11.0	89	140
CF11.013.D	(3x(2x0.14)C+2x0.5)C	9.0	62	104
CF11.014.D	(4x(2x0.25)C+(2x0.5))C	11.0	86	138
CF11.015.D	(4x(2x0.14)+4x0.5)C	9.0	60	97

The chainflex® types marked with ²⁾ are cables designed as a star-quad.
¹¹⁾ 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

EPLAN download, configurators ► www.igus.eu/CF11D

Class 6.6.4.1

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°			

Part No.	Core group	Colour code
CF11.001.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(2x0.5)	brown-red/brown-blue
CF11.002.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	2x(0.5)C	black, red
CF11.003.D	3x(2x0.14)	white/brown, green/yellow, grey/pink
	2x1.0	blue, red
CF11.004.D ¹¹⁾	2x(2x(2x0.14))	(brown/green)/(yellow/violet), (grey/pink)/(red/black)
	(4x0.14)C	yellow-black/red-black/green-black/blue-black
	(4x0.5)	brown-green/white-green/blue/white
CF11.005.D	4x(2x0.14)	white/brown, green/yellow, grey/pink, blue/red
	4x0.5	black, violet, grey-pink, red-blue
CF11.006.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(4x0.25)	yellow-brown/grey-brown/green-black/green-red
	(2x0.5)	brown-red/brown-blue
CF11.007.D ²⁾	4x0.34	white, green, brown, yellow (star-quad)
CF11.008.D	3x(2x0.25)	white/brown, green/yellow, grey/pink
CF11.009.D	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x0.5	white, brown
CF11.010.D	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x1.0	white, brown
CF11.011.D	4x(2x0.34)	black/brown, red/orange, green/yellow, blue/violet
	4x0.5	black-white, red-white, yellow-white, blue-white
CF11.012.D	3x(2x0.14)C	green/yellow, white/grey, blue/red
	(3x0.14)C	red/green/brown
	(4x0.14)	grey/yellow/pink/violet
CF11.013.D	(2x0.14+2x0.5)	blue/brown-blue/grey/brown-red
	3x(2x0.14)C	white/brown, green/yellow, grey/pink
CF11.014.D	2x0.5	blue, red
	4x(2x0.25)C	white/brown, green/yellow, grey/pink, blue/red
CF11.015.D	(2x0.5)	black no. 1/black no. 2
	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
	4x0.5	blue, white, brown-green, white-green

Further cable types ► Page 272



Measuring system cable | TPE | chainflex® CF11.D

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF11.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]
CF11.017.D ^{4) 11)}	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0	100	126
CF11.018.D ⁴⁾	(2x(2x0.25)+2x0.5)C	6.5	41	51
CF11.019.D ⁴⁾	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0	93	120
CF11.021.D	((4x0.25)+3x(2x0.25+2x0.5)C	10.0	88	130
CF11.022.D	((2x0.25)+5x0.5)C	7.5	54	79
CF11.025.D	(3x(2x0.14)C+(2x0.5)C)C	10.0	72	123
CF11.027.D	(5x(2x0.14)+2x0.5)C	8.5	52	88
CF11.028.D	(2x(2x0.20)+(2x0.38)C	7.5	44	63
CF11.031.D	(2x(2x0.25)C+2x1.0)C	9.5	69	116
CF11.032.D ⁵⁾	3x(2x0.14)C+(3x0.14)C	8.0	35	71
CF11.033.D ⁵⁾	4x(2x0.14)C+2x(1.0)C	9.5	64	104
CF11.038.D	(3x(2x0.14)+(2x0.34)C	8.0	36	71

⁴⁾ Manufactured without inner jacket
⁵⁾ Manufactured without overall shield
¹¹⁾ 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

Further cable types ► Page 270

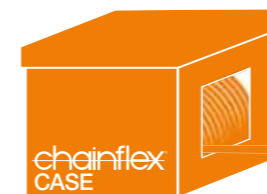
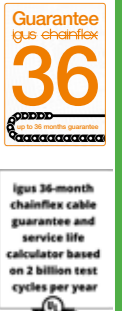
EPLAN download, configurators ► www.igus.eu/CF11D

Class 6.6.4.1

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°			

Part No.	Core group	Colour code
CF11.017.D ^{4) 11)}	4x(2x0.14)	red/black, brown/green, yellow/violet, grey/pink
	(4x0.14)C	blue-black/yellow-black/red-black/green-black
	4x1.0	white-green, brown-green, blue, white
CF11.018.D ⁴⁾	2x(2x0.25)	red/black, grey/pink
	2x0.5	white, brown
CF11.019.D ⁴⁾	3x(2x0.25)C	brown/green, grey/pink, red/black
	(3x0.25)	blue/violet/yellow
	2x1.0	white, brown
CF11.021.D	(4x0.25)	white/brown/grey/black
	3x2x0.25	white/yellow, white/grey, black/orange
	3x2x0.5	black no. 1/black no. 2, black no. 3/black no. 4, black no. 5/black no. 6
CF11.022.D	(2x0.25)	white/brown
	5x0.5	green, yellow, grey, pink, blue
CF11.025.D	3x(2x0.14)C	green/yellow, blue/red, grey/pink
	(2x0.5)	white/brown
CF11.027.D	5x(2x0.14)	brown/green, yellow/grey, white/violet, red/black, pink/blue
	2x0.5	white-green, white-red
CF11.028.D	2x(2x0.20)	green/yellow, pink/blue
	(2x0.38)	red/black
CF11.031.D	2x(2x0.25)C	white/brown, green/yellow
	2x1.0	black no. 1, black no. 2
CF11.032.D ⁵⁾	3x(2x0.14)C	green/black, yellow/black, red/black
	(3x0.14)C	grey/pink/black
CF11.033.D ⁵⁾	4x(2x0.14)C	yellow/black, red/black, blue/black, green/black
	2x(1.0)C	white, brown
CF11.038.D	3x(2x0.14)	white/brown, green/yellow, grey/pink
	(2x0.34)	blue/red



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

