

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 232

CF884	PVC	✓	15	+5/+70	                
-------	-----	---	----	--------	---

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			radius [factor x d]		radius [factor x d]		radius [factor x d]						
						< 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	234	
	CF211	+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	238	
	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	244	
	CF111.D	-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	248	
	CF113.D	-25 / -15 -15 / +70 +70 / +80	10	5	50	≤ 100		10 7.5 10			11 8.5 11			12 9.5 12	254	
						5 million			7.5 million			12.5 million				
	CF11.D	New! -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	260

⁽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



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





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	4.2.2.1	3.1.3.1	4.2.3.1	6.5.3.1	6.6.4.1
		PVC 234	PVC 238	PUR 244	PUR 248	PUR 254	TPE 260
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	✓		✓	✓	✓	✓
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	4.2.2.1	3.1.3.1	4.2.3.1	6.5.3.1	6.6.4.1
		PVC 234	PVC 238	PUR 244	PUR 248	PUR 254	TPE 260
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		✓			✓	✓
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 million
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	minimum 15 x d
		flexible	minimum 12 x d
		fixed	minimum 8 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	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 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

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

	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
	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*	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

Guarantee
igus chainflex
36

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

CFRIP

UL US

UL US

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

UL

CE

UK CA

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

UL

235

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

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

igus

EU2022

EU2022

igus

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

Measuring system cable | PVC | chainflex® CF884

Class 3.1.1.1



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]	Part No.	Core group	Colour code
CF884.001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	8.5	41	91	CF884.001	3x(2x0.14)C 4x0.14 2x0.5	green/yellow, black/brown, red/orange grey, blue, white-yellow, white-black brown-red, brown-blue
CF884.006	(3x(2x0.14)C+(4x0.14)+(4x0.22)+(2x0.5))C	9.0	50	101	CF884.006	3x(2x0.14)C 4x0.14 4x0.22 2x0.5	green/yellow, black/brown, red/orange grey, blue, white-yellow, white-black yellow-brown, grey-brown, green-black, green-red brown-red, brown-blue
CF884.009	(4x(2x0.25)+2x0.5)C	8.0	44	91	CF884.009	4x(2x0.25) 2x0.5	brown/green, blue/violet, grey/pink, red/black white, brown
CF884.011	(4x(2x0.34)+4x0.5)C	9.5	64	117	CF884.011	4x(2x0.34) 4x0.5	black/brown, red/orange, yellow/green, blue/violet blue-white, black-white, red-white, yellow-white
CF884.015	(4x(2x0.14)+4x0.5)C	8.5	44	92	CF884.015	4x(2x0.14) 4x0.5	brown/green, yellow/violet, grey/pink, red/black blue, white, brown-green, white-green
CF884.022	((2x0.25)+5x0.5)C	8.0	44	79	CF884.022	2x0.25 5x0.5	white, brown green, yellow, grey, pink, blue
CF884.028	(2x(2x0.15)+(2x0.38))C	7.5	41	58	CF884.028	2x(2x0.15) 2x0.38	green/yellow, pink/blue red/black

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/cfcase



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

236 36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges



EU2022

EU2022



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

237



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

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
	a max.	gliding	3m/s
	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



EU2022

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 Following 2014/35/EU
	CE	
	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]
+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/packaging machines, handling, indoor cranes, wood/stone processing

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 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



239

Example image

Measuring system cable | PVC | chainflex® CF211

Class 4.2.2.1



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]	Part No.	Core group	Colour code
CF211.001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0	64	100	CF211.001	3x(2x0.14)C (4x0.14) (2x0.5)	green/yellow, black/brown, red/orange grey/blue/white-yellow/white-black brown-red, brown-blue
CF211.002	(3x(2x0.14)C+2x(0.5)C)C	9.5	66	106	CF211.002	3x(2x0.14)C 2x(0.5)C	green/yellow, black/brown, red/orange black, red
CF211.004	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	10.0	70	115	CF211.004	2x(2x(2x0.14)) (4x0.14)C (4x0.5)	(brown/green)/(yellow/violet), (grey/pink)/(red/black) yellow-black/red-black/green-black/blue-black brown-green/white-green/blue/white
CF211.006	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	76	122	CF211.006	3x(2x0.14)C (4x0.14) (4x0.25) (2x0.5)	green/yellow, black/brown, red/orange grey/blue/white-yellow/white-black yellow-brown/grey-brown/green-black/green-red brown-red, brown-blue
CF211.009	(4x(2x0.25)+2x0.5)C	8.0	49	79	CF211.009	4x(2x0.25) 2x0.5	brown/green, blue/violet, grey/pink, red/black white, brown
CF211.010	(4x(2x0.25)+2x1.0)C	8.5	61	92	CF211.010	4x(2x0.25) 2x1.0	brown/green, blue/violet, grey/pink, red/black white, brown
CF211.011	(4x(2x0.34)+4x0.5)C	9.5	72	109	CF211.011	4x(2x0.34) 4x0.5	black/brown, red/orange, green/yellow, blue/violet black-white, red-white, yellow-white, blue-white
CF211.014	(4x(2x0.25)C+(2x0.5))C	10.5	77	124	CF211.014	4x(2x0.25)C (2x0.5)	white/brown, green/yellow, grey/pink, blue/red black no. 1/black no. 2
CF211.015	(4x(2x0.14)+4x0.5)C	8.5	54	86	CF211.015	4x(2x0.14) 4x0.5	brown/green, yellow/violet, grey/pink, red/black blue, white, brown-green, white-green
CF211.016	(3x(2x0.25)C)C	9.0	51	89	CF211.016	3x(2x0.25)C	white/brown, green/yellow, grey/pink
CF211.017	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0	92	134	CF211.017	4x(2x0.14) (4x0.14)C 4x1.0	red/black, brown/green, yellow/violet, grey/pink blue-black/yellow-black/red-black/green-black white-green, brown-green, blue, white
CF211.018	(2x(2x0.25)+2x0.5)C	6.5	34	54	CF211.018	2x(2x0.25) 2x0.5	red/black, grey/pink white, brown
CF211.019	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0	86	125	CF211.019	3x(2x0.25)C (3x0.25) 2x1.0	brown/green, grey/pink, red/black blue/violet/yellow white, brown
CF211.022	((2x0.25)+5x0.5)C	7.0	46	71	CF211.022	(2x0.25) 5x0.5	white/brown green, yellow, grey, pink, blue
CF211.024	((4x0.14)+2x(2x0.34))C	7.0	36	61	CF211.024	(4x0.14) 2x(2x0.34)	yellow/grey/violet/pink white-green/white, brown-green/blue
CF211.027	(5x(2x0.14)+2x0.5)C	8.0	45	75	CF211.027	5x(2x0.14) 2x0.5	brown/green, yellow/grey, white/violet, red/black, pink/blue white-green, white-red

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/CF211

Further cable types ► [Page 242](#)

240 36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges



EU2022

EU2022



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

241



Measuring system cable | PVC | chainflex® CF211

Class 4.2.2.1



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]	Part No.	Core group	Colour code
CF211.028	(2x(2x0.15)+(2x0.38))C	7.5	40	77	CF211.028	2x(2x0.15) (2x0.38)	green/yellow, pink/blue red/black
CF211.032	3x(2x0.14)C+(3x0.14)C	8.0	35	79	CF211.032	3x(2x0.14)C (3x0.14)C	green/black, yellow/black, red/black grey/pink/black
CF211.033	4x(2x0.14)C+2x(1.0)C	9.5	64	112	CF211.033	4x(2x0.14)C 2x(1.0)C	yellow/black, red/black, blue/black, green/black white, brown
CF211.036	(5x(2x0.25))C	8.0	42	69	CF211.036	5x(2x0.25)	white/brown green/yellow, grey/pink, blue/red, black/violet
CF211.037	(6x(2x0.25))C	8.5	51	83	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))C	7.5	33	62	CF211.038	3x(2x0.14) (2x0.34)	white/brown, green/yellow, grey/pink blue/red
CF211.039 ¹¹⁾	(4x(2x0.14)C+2x(0.5)C)C	10.0	77	125	CF211.039 ¹¹⁾	(4x(2x0.14)C 2x(0.5)C	green/yellow, grey/pink, blue/red, black/violet brown, black

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 240



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/cfcase



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.

242 36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges



EU2022

EU2022



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

243



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 million

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

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

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



EU2022

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
	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*	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

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°			



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

245

Example image

Measuring system cable | iguPUR | chainflex® CF894

Class 3.1.3.1



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]	Part No.	Core group	Colour code
CF894.001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	8.5	41	80	CF894.001	3x(2x0.14)C 4x0.14 2x0.5	green/yellow, black/brown, red/orange grey, blue, white-yellow, white-black brown-red, brown-blue
CF894.006	(3x(2x0.14)C+(4x0.14)+(4x0.22)+(2x0.5))C	9.0	50	105	CF894.006	3x(2x0.14)C 4x0.14 4 x 0.22 2x0.5	green/yellow, black/brown, red/orange grey, blue, white-yellow, white-black yellow-brown, grey-brown, green-black, brown-red brown-red, brown-blue
CF894.009	(4x(2x0.25)+2x0.5)C	8.0	44	80	CF894.009	4x(2x0.25) 2x0.5	brown/green, blue/violet, grey/pink, red/black white/brown
CF894.011	(4x(2x0.34)+4x0.5)C	9.5	64	126	CF894.011	4x(2x0.34) 4x0.5	black/brown, red/orange, yellow/green, blue/violet blue-white, black-white, red-white, yellow-white
CF894.015	(4x(2x0.14)+4x0.5)C	8.5	44	84	CF894.015	4x(2x0.14) 4x0.5	brown/green, yellow/violet, grey/pink, red/black blue, white, brown-green, white-green
CF894.022	((2x0.25)+5x0.5)C	8.0	44	78	CF894.022	2x0.25 5x0.5	white, brown green, yellow, grey, pink, blue
CF894.028	(2x(2x0.15)+(2x0.38))C	7.5	41	57	CF894.028	2x(2x0.15) 2x0.38	green/yellow, pink/blue red/black

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/cfcase



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

246 36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges



EU2022

EU2022



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

247



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 | **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

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



EU2022

Class 4.2.3.1

Properties and approvals

	UV resistance	Medium
	Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
	Offshore	MUD-resistant following NEK 606 - status 2009
	Flame-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/CF111.D
	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
	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]
-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

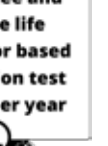
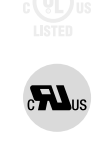
Typical application areas

- 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



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

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			



Example image



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]	Part No.	Core group	Colour code
CF111.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.5	64	104	CF111.001.D	3x(2x0.14)C (4x0.14) (2x0.5)	green/yellow, black/brown, red/orange grey/blue/white-yellow/white-black brown-red/brown-blue
CF111.002.D	(3x(2x0.14)C+2x(0.5)C)C	9.5	66	109	CF111.002.D	3x(2x0.14)C 2x(0.5)C	green/yellow, black/brown, red/orange black, red
CF111.004.D	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	10.5	70	116	CF111.004.D	2x(2x(2x0.14)) (4x0.14)C (4x0.5)	(brown/green)/(yellow/violet), (grey/pink)/(red/black) yellow-black/red-black/green-black/blue-black brown-green/white-green/blue/white
CF111.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	76	122	CF111.006.D	3x(2x0.14)C (4x0.14) (4x0.25) (2x0.5)	green/yellow, black/brown, red/orange grey/blue/white-yellow/white-black yellow-brown/grey-brown/green-black/green-red brown-red/brown-blue
CF111.009.D	(4x(2x0.25)+2x0.5)C	8.0	49	79	CF111.009.D	4x(2x0.25) 2x0.5	brown/green, blue/violet, grey/pink, red/black white, brown
CF111.010.D	(4x(2x0.25)+2x1.0)C	8.5	61	94	CF111.010.D	4x(2x0.25) 2x1.0	brown/green, blue/violet, grey/pink, red/black white, brown
CF111.011.D	(4x(2x0.34)+4x0.5)C	9.5	72	115	CF111.011.D	4x(2x0.34) 4x0.5	black/brown, red/orange, green/yellow, blue/violet black-white, red-white, yellow-white, blue-white
CF111.014.D	(4x(2x0.25)C+(2x0.5))C	10.5	77	124	CF111.014.D	4x(2x0.25)C (2x0.5)	white/brown, green/yellow, grey/pink, blue/red black no. 1/black no. 2
CF111.015.D	(4x(2x0.14)+4x0.5)C	8.5	54	87	CF111.015.D	4x(2x0.14) 4x0.5	brown/green, yellow/violet, grey/pink, red/black blue, white, brown-green, white-green
CF111.020.D	(3x(2x0.14)+2x(4x0.14)+(2x0.5))C	8.5	52	87	CF111.020.D	3x(2x0.14) 2x(4x0.14) (2x0.5)	blue/red, black/violet, grey-pink/red-blue green/grey/yellow/pink, white-green/white-yellow/brown-green/yellow-brown white/brown
CF111.021.D	((4x0.25)+3x(2x0.25+2x0.5))C	9.5	80	117	CF111.021.D	(4x0.25) 3x2x0.25 3x2x0.5	white/brown/grey/black white/yellow, white/grey, black/orange black no. 1/black no. 2, black no. 3/black no. 4, black no. 5/black no. 6
CF111.022.D	((2x0.25)+5x0.5)C	7.0	46	75	CF111.022.D	(2x0.25) 5x0.5	white/brown green, yellow, grey, pink, blue
CF111.024.D	((4x0.14)+2x(2x0.34))C	7.0	36	61	CF111.024.D	(4x0.14) 2x(2x0.34)	yellow/grey/violet/pink white-green/white, brown-green/blue
CF111.026.D	(6x(2x0.25)+(2x0.34)C+(2x0.5))C	10.5	74	119	CF111.026.D	6x(2x0.25) (2x0.34)C (2x0.5)	green/yellow, grey/pink, blue/red, black/violet, grey-pink/red-blue, white-green/brown-green white/brown blue/red

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/CF111.D

Further cable types ► [Page 252](#)

250 36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges



EU2022

EU2022



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

251



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



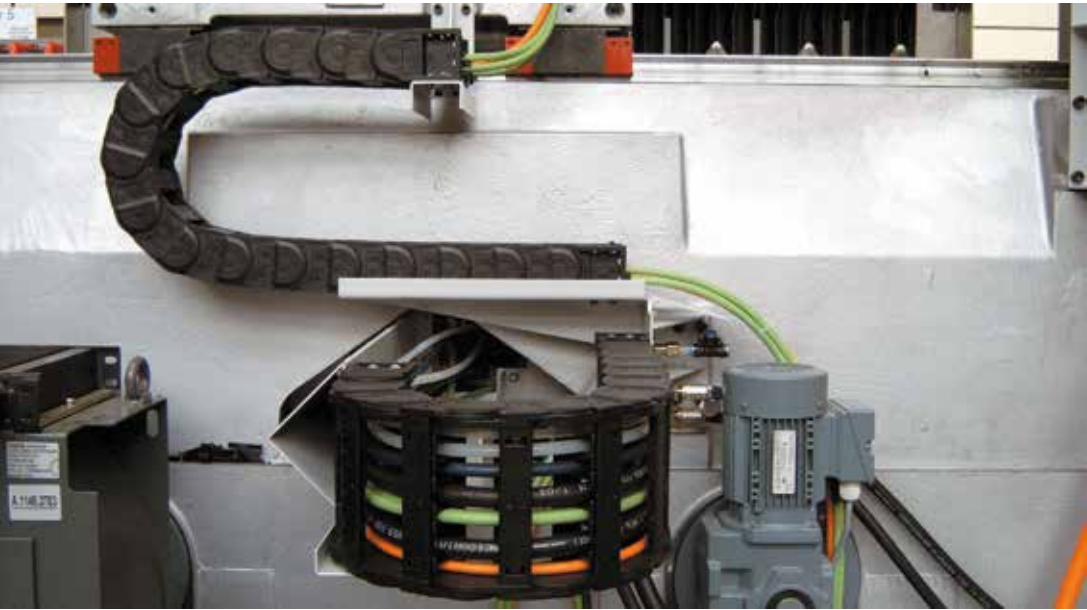


Example image

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Core group	Colour code
CF111.027.D	(5x(2x0.14)+2x0.5)C	8.0	45	76	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))C	7.5	40	73	CF111.028.D	2x(2x0.15) (2x0.38)	green/yellow, pink/blue red/black
CF111.032.D	3x(2x0.14)C+(3x0.14)C	8.5	35	82	CF111.032.D	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)C	9.0	81	118	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

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 250



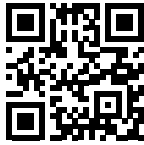
readychain® systems from igus® are completely pre-harnessed with chainflex® cables, hoses, metal parts etc.



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/cfcase



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 ...

EPLAN download, configurators ► www.igus.eu/CF111.D

252 36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges



EU2022

EU2022



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

253



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 orange 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 2009
	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/CF113.D
	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	10	11	12
-15/+70	7.5	8.5	9.5
+70/+80	10	11	12

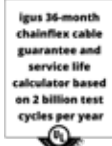
* Higher number of double strokes? Service life calculation online ► www.igus.eu/chainflexlife

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



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



Measuring system cable | PUR | chainflex® CF113.D

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°			

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]	Part No.	Core group	Colour code
CF113.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	71	137	CF113.001.D	3x(2x0.14)C (4x0.14) (2x0.5)	green/yellow, black/brown, red/orange grey/blue/white-yellow/white-black brown-red/brown-blue
CF113.002.D	(3x(2x0.14)C+2x(0.5)C)C	10.0	74	144	CF113.002.D	3x(2x0.14)C 2x(0.5)C	green/yellow, black/brown, red/orange black, red
CF113.003.D ¹¹⁾	(3x(2x0.14)+2x1.0)C	8.0	56	103	CF113.003.D ¹¹⁾	3x(2x0.14) 2x1.0	white/brown, green/yellow, grey/pink blue, red
CF113.004.D	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	11.0	78	152	CF113.004.D	2x(2x(2x0.14)) (4x0.14)C (4x0.5)	(brown/green)/(yellow/violet), (grey/pink)/(red/black) yellow-black/red-black/green-black/blue-black brown-green/white-green/blue/white
CF113.005.D	(4x(2x0.14)+4x0.5)C	9.0	60	115	CF113.005.D	4x(2x0.14) 4x0.5	white/brown, green/yellow, grey/pink, blue/red black, violet, grey-pink, red-blue
CF113.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0	85	158	CF113.006.D	3x(2x0.14)C (4x0.14) (4x0.25) (2x0.5)	green/yellow, black/brown, red/orange grey/blue/white-yellow/white-black yellow-brown/grey-brown/green-black/green-red brown-red/brown-blue
CF113.007.D ²⁾	(4x0.34)C	6.5	31	54	CF113.007.D ²⁾	4x0.34	white, green, brown, yellow (star-quad)
CF113.008.D	(3x(2x0.25))C	7.5	36	76	CF113.008.D	3x(2x0.25)	white/brown, green/yellow, grey/pink
CF113.009.D	(4x(2x0.25)+2x0.5)C	8.5	57	99	CF113.009.D	4x(2x0.25) 2x0.5	brown/green, blue/violet, grey/pink, red/black white, brown
CF113.010.D	(4x(2x0.25)+2x1.0)C	9.0	68	122	CF113.010.D	4x(2x0.25) 2x1.0	brown/green, blue/violet, grey/pink, red/black white, brown
CF113.011.D	(4x(2x0.34)+4x0.5)C	10.0	81	142	CF113.011.D	4x(2x0.34) 4x0.5	black/brown, red/orange, green/yellow, blue/violet black-white, red-white, yellow-white, blue-white
CF113.013.D	(3x(2x0.14)C+2x0.5)C	9.0	62	121	CF113.013.D	3x(2x0.14)C 2x0.5	white/brown, green/yellow, grey/pink blue, red
CF113.014.D	(4x(2x0.25)C+(2x0.5))C	11.0	86	163	CF113.014.D	4x(2x0.25)C (2x0.5)	white/brown, green/yellow, grey/pink, blue/red black no. 1/black no. 2
CF113.015.D	(4x(2x0.14)+4x0.5)C	9.0	60	114	CF113.015.D	(4x(2x0.15))C 4x0.5	brown/green, yellow/violet, grey/pink, red/black blue, white, brown-green, white-green
CF113.016.D	(3x(2x0.25)C)C	10.0	60	126	CF113.016.D	3x(2x0.25)C	white/brown, green/yellow, grey/pink
CF113.017.D ⁴⁾	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0	100	150	CF113.017.D ⁴⁾	4x(2x0.14) (4x0.14)C 4x1.0	red/black, brown/green, yellow/violet, grey/pink blue-black/yellow-black/red-black/green-black white-green, brown-green, blue, white
CF113.018.D ⁴⁾	(2x(2x0.25)+2x0.5)C	6.5	41	65	CF113.018.D ⁴⁾	2x(2x0.25) 2x0.5	red/black, grey/pink white, brown

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



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

Class 6.5.3.1

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]	Part No.	Core group	Colour code
CF113.019.D ⁴⁾	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0	93	143	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)C	8.0	54	94	CF113.022.D	(2x0.25) 5x0.5	white/brown green, yellow, grey, pink, blue
CF113.025.D	(3x(2x0.14)C+(2x0.5)C)C	10.0	72	141	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)C	9.0	52	105	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))C	7.5	44	69	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))C	12.0	105	192	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)C	9.5	69	133	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	8.5	35	82	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	9.5	64	111	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))C	8.5	51	103	CF113.036.D	5x(2x0.25)	white/brown green/yellow, grey/pink, blue/red, black/violet
CF113.037.D	(6x(2x0.25))C	9.0	58	114	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))C	8.5	36	87	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)C	10.0	88	155	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 violet/orange/weißviolet/weißorange white-grey, grey

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 256



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/cfcase



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

EPLAN download, configurators ► www.igus.eu/CF113.D

258 36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges



EU2022

EU2022



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

259



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	minimum 6.8 x d
		flexible	minimum 5 x d
		fixed	minimum 4 x d
	Temperature	e-chain® linear	-35°C up to +90°C
		flexible	-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/s²
	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

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 6.6.4.1

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/CF11.D (from production date 01/2022)
	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 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

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

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

CFRIP
igus

UL US

RU

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

DESINA

CE

UK CA

UL

261

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

igus

EU2022

EU2022

igus

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

Measuring system cable | TPE | chainflex® CF11.D

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°			

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]	Part No.	Core group	Colour code
New CF11.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	71	119	CF11.001.D	3x(2x0.14)C (4x0.14) (2x0.5)	green/yellow, black/brown, red/orange grey/blue/white-yellow/white-black brown-red/brown-blue
New CF11.002.D	(3x(2x0.14)C+2x(0.5)C)C	10.0	74	125	CF11.002.D	3x(2x0.14)C 2x(0.5)C	green/yellow, black/brown, red/orange black, red
New CF11.003.D	(3x(2x0.14)+2x1.0)C	8.0	56	86	CF11.003.D	3x(2x0.14) 2x1.0	white/brown, green/yellow, grey/pink blue, red
New CF11.004.D	(2x(2x(2x0.14)))+(4x0.14)C +(4x0.5))C	11.0	78	127	CF11.004.D	2x(2x(2x0.14)) (4x0.14)C (4x0.5)	(brown/green)/(yellow/violet), (grey/pink)/(red/black) yellow-black/red-black/green-black/blue-black brown-green/white-green/blue/white
New CF11.005.D	(4x(2x0.14)+4x0.5)C	9.0	60	97	CF11.005.D	4x(2x0.14) 4x0.5	white/brown, green/yellow, grey/pink, blue/red black, violet, grey-pink, red-blue
New CF11.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.5	85	139	CF11.006.D	3x(2x0.14)C (4x0.14) (4x0.25) (2x0.5)	green/yellow, black/brown, red/orange grey/blue/white-yellow/white-black yellow-brown/grey-brown/green-black/green-red brown-red/brown-blue
New CF11.007.D ²⁾	(4x0.34)C	6.0	31	48	CF11.007.D ²⁾	4x0.34	white, green, brown, yellow (star-quad)
New CF11.008.D	(3x(2x0.25))C	7.5	36	60	CF11.008.D	3x(2x0.25)	white/brown, green/yellow, grey/pink
New CF11.009.D	(4x(2x0.25)+2x0.5)C	8.5	57	91	CF11.009.D	4x(2x0.25) 2x0.5	brown/green, blue/violet, grey/pink, red/black white, brown
New CF11.010.D	(4x(2x0.25)+2x1.0)C	9.0	68	105	CF11.010.D	4x(2x0.25) 2x1.0	brown/green, blue/violet, grey/pink, red/black white, brown
New CF11.011.D	(4x(2x0.34)+4x0.5)C	10.0	81	124	CF11.011.D	4x(2x0.34) 4x0.5	black/brown, red/orange, green/yellow, blue/violet black-white, red-white, yellow-white, blue-white
New CF11.012.D	(3x(2x0.14)C+(3x0.14)C +(4x0.14)+(2x0.14+2x0.5))C	11.0	89	140	CF11.012.D	3x(2x0.14)C (3x0.14)C (4x0.14) (2x0.14+2x0.5)	green/yellow, white/grey, blue/red red/green/brown grey/yellow/pink/violet blue/brown-blue/grey/brown-red
New CF11.013.D	(3x(2x0.14)C+2x0.5)C	9.0	62	104	CF11.013.D	3x(2x0.14)C 2x0.5	white/brown, green/yellow, grey/pink blue, red
New CF11.014.D ¹¹⁾	(4x(2x0.25)C+(2x0.5))C	11.0	86	138	CF11.014.D ¹¹⁾	4x(2x0.25)C (2x0.5)	white/brown, green/yellow, grey/pink, blue/red black no. 1/black no. 2
New CF11.015.D	(4x(2x0.14)+4x0.5)C	9.0	60	97	CF11.015.D	4x(2x0.14) 4x0.5	brown/green, yellow/violet, grey/pink, red/black blue, white, brown-green, white-green
New CF11.016.D ¹¹⁾	(3x(2x0.25)C)C	9.5	60	108	CF11.016.D ¹¹⁾	3x(2x0.25)C	white/brown, green/yellow, grey/pink

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

Further cable types ► Page 264



262 36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges



EU2022

EU2022



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

263



HENNLICH -
ŽIJEME TECHNIKOU

o.z. LIN-TECH HENNLICH s.r.o.
Českolipská 9, 412 01 Litoměřice

Telefon: +420 416 711 333
E-mail: lin-tech@hennlich.cz

www.hennlich.cz/lin-tech



HENNLICH -
ŽIJEME TECHNIKOU

o.z. LIN-TECH HENNLICH s.r.o.
Českolipská 9, 412 01 Litoměřice

Telefon: +420 416 711 333
E-mail: lin-tech@hennlich.cz

www.hennlich.cz/lin-tech

Measuring system cable | **TPE** | chainflex® CF11.D

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°			

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]	Part No.	Core group	Colour code
New CF11.017.D ⁴⁾	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0	100	126	CF11.017.D ⁴⁾	4x(2x0.14) (4x0.14)C 4x1.0	red/black, brown/green, yellow/violet, grey/pink blue-black/yellow-black/red-black/green-black white-green, brown-green, blue, white
New CF11.018.D ⁴⁾	(2x(2x0.25)+2x0.5)C	6.5	41	51	CF11.018.D ⁴⁾	2x(2x0.25) 2x0.5	red/black, grey/pink white, brown
New CF11.019.D ^{4) 11)}	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0	93	120	CF11.019.D ^{4) 11)}	3x(2x0.25)C (3x0.25) 2x1.0	brown/green, grey/pink, red/black blue/violet/yellow white, brown
New CF11.021.D ¹¹⁾	((4x0.25)+3x(2x0.25+2x0.5))C	10.0	88	130	CF11.021.D ¹¹⁾	(4x0.25) 3x2x0.25 3x2x0.5	white/brown/grey/black white/yellow, white/grey, black/orange black no. 1/black no. 2, black no. 3/black no. 4, black no. 5/black no. 6
New CF11.022.D	((2x0.25)+5x0.5)C	7.5	54	79	CF11.022.D	(2x0.25) 5x0.5	white/brown green, yellow, grey, pink, blue
New CF11.025.D	(3x(2x0.14)C+(2x0.5)C)C	10.0	72	123	CF11.025.D	3x(2x0.14)C (2x0.5)	green/yellow, blue/red, grey/pink white/brown
New CF11.027.D	(5x(2x0.14)+2x0.5)C	8.5	52	88	CF11.027.D	5x(2x0.14) 2x0.5	brown/green, yellow/grey, white/violet, red/black, pink/blue white-green, white-red
New CF11.028.D	(2x(2x0.20)+(2x0.38))C	7.5	44	63	CF11.028.D	2x(2x0.20) (2x0.38)	green/yellow, pink/blue red/black
New CF11.031.D	(2x(2x0.25)C+2x1.0)C	9.5	69	116	CF11.031.D	2x(2x0.25)C 2x1.0	white/brown, green/yellow black no. 1, black no. 2
New CF11.032.D ⁵⁾	3x(2x0.14)C+(3x0.14)C	8.0	35	71	CF11.032.D ⁵⁾	3x(2x0.14)C (3x0.14)C	green/black, yellow/black, red/black grey/pink/black
New CF11.033.D ⁵⁾	4x(2x0.14)C+2x(1.0)C	9.5	64	104	CF11.033.D ⁵⁾	4x(2x0.14)C 2x(1.0)C	yellow/black, red/black, blue/black, green/black white, brown
New CF11.038.D	(3x(2x0.14)+(2x0.34))C	8.0	36	71	CF11.038.D	3x(2x0.14) (2x0.34)	white/brown, green/yellow, grey/pink blue/red
New CF11.040.D ¹¹⁾	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	88	130	CF11.040.D ¹¹⁾	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

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 262

EPLAN download, configurators ► www.igus.eu/CF11.D



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/cfcase

