














## Measuring system cable | PUR | chainflex® CF111.D

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



### Dynamic information

 Bend radius	<b>e-chain® linear</b> flexible fixed	minimum 10 x d minimum 8 x d minimum 5 x d
 Temperature	<b>e-chain® linear</b> flexible fixed	-25 °C to +80 °C -40 °C to +80 °C (following DIN EN 60811-504) -50 °C to +80 °C (following DIN EN 50305)
 v max.	<b>unsupported</b>	5 m/s
 a max.	<b>gliding</b>	3 m/s
 Travel distance	Unsupported travel distances and up to 10 m 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 shield. Coverage approx. 90 % optical	
 Intermediate layer	Foil taping over the outer layer.	
 Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage approx. 55 % linear, approx. 80 % optical	
 Outer jacket	Low-adhesion, 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	50 V
 Testing voltage	500 V

Example image

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	≥ 400 m
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## 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, CEI 20-35, FT1, VW-1
 Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
 Halogen-free	Following DIN EN 60754.
 UL/CSA	Style 1589 and 20236, 30 V, 80 °C
 NFFPA	Following NFFPA 79-2012 chapter 12.9.
 DNV-GL	Certified according to GL type testing – Certificate no.: 61 936-14 HH
 EAC	Certificate no. RU C-DE.ME77.B.01559 (TR ZU)
 CTP	Certificate no. C-DE.PB49.B.00416 (Fire safety)
 CEI	Following CEI 20-35.
 RoHS-II	Following 2011/65/EU (RoHS-II).
 Cleanroom	According to ISO Class 1. Outer jacket material complies with CF27.07.05.02.01.D, tested by IPA according to standard 14644-1.
 DESINA	According to VDW, DESINA standardisation.
 CE	Following 2014/35/EU.

### Guaranteed lifetime according to guarantee conditions (Page 22-23)

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? Online lifetime calculation: [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical mechanical application areas

- For medium duty applications
- Almost unlimited resistance to oil
- Indoor and outdoor applications without direct solar radiation
- Unsupported travel distances and up to 10 m for gliding applications
- Machining units/machine tools, low temperature applications



Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	≥ 400 m
Oil resistance	none	1	2	3	4	5	6	7	highest
Torsion	none	1	2	3	4	5	6	7	±180°

igus® chainflex® CF111.D

Example image

Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Copper index	Weight	Part No.	Core group	Colour code
	[mm²]	[mm]	[kg/km]	[kg/km]			
CF111.001.D	(3x(2x0.14)C)+(4x0.14)+(2x0.5)C	9.0	63	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	9.5	65	108	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	74	122	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	80	126	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 brown-yellow/brown-grey/green-black/green-red brown-red/brown-blue
CF111.009.D	(4x(2x0.25))+2x0.5)C	8.0	51	82	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	63	96	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	9.0	72	108	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	10.0	78	125	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	88	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	54	92	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/brown-yellow white/brown
CF111.021.D	((4x0.25)+3x(2x0.25+2x0.5)C	9.5	81	120	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	47	74	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	37	63	CF111.024.D	(4x0.14) 2x(2x0.34)	yellow/grey/violet/pink white-green/white, brown-green/blue
New CF111.026.D	(6x(2x0.25)+(2x0.34)C)+2x0.5)C	10.5	76	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

Other types ► page 230



Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	≥ 400 m
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

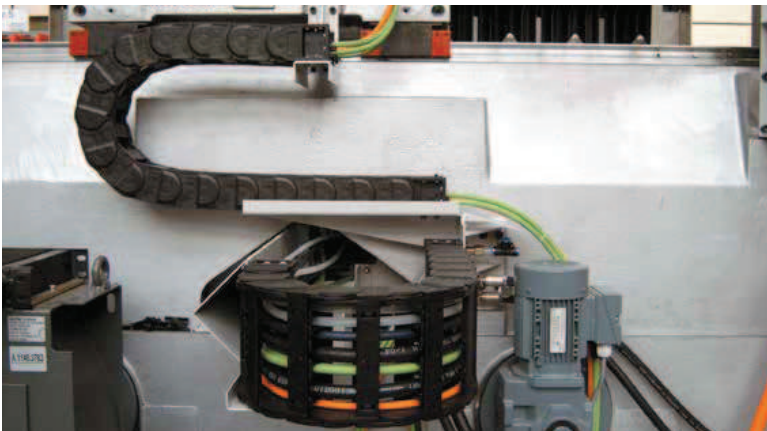


Example image

Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Copper index	Weight	Part No.	Core group	Colour code
	[mm <sup>2</sup> ]	[mm]	[kg/km]	[kg/km]			
CF111.027.D	(5x(2x0.14)+2x0.5)C	8.0	46	78	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	37	75	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	33	71	CF111.032.D	3x(2x0.14)C (3x0.14)C	green/black, yellow/black, red/black grey/pink/black
CF111.033.D	4x(2x0.14)C+2x(1.0)C	9.5	61	113	CF111.033.D	4x(2x0.14)C 2x(1.0)C	yellow/black, red/black, blue/black, green/black white, brown
CF111.035.D	(4x(2x0.25)C+2x(2x0.5))C	11.0	90	144	CF111.035.D	4x(2x0.25)C 2x(2x0.5)	white/brown, green/yellow, grey/pink, blue/red black no.1/black no.2, black no.3/black no.4
CF111.040.D	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	84	124	CF111.040.D	(3x(4x0.14) (2x0.14+2x0.34) 2x1.5)C	black/red/white-black/white-red, green/blue/white-green/ white-blueyellow/brown/white-yellow/white-brown violet/orange/white-violet/white-orange 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

Other types ► page 228



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



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