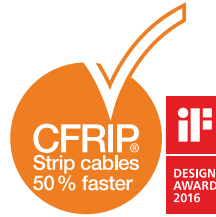


Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	≥ 400 m
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

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

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



### Dynamic information

Bend radius	e-chain® linear flexible fixed	minimum 7.5 x d minimum 6 x d minimum 4 x d
Temperature	e-chain® linear flexible fixed	-35 °C to +90 °C -50 °C to +90 °C (following DIN EN 60811-504) -55 °C to +90 °C (following DIN EN 50305)
v max.	unsupported	10 m/s
a max.	gliding	6 m/s
Travel distance	Unsupported travel distances and up to 400 m and more for gliding applications, Class 6	

### Cable structure

Conductor	Stranded conductor in especially bending-resistant design 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 approx. 70 % linear, approx. 90 % optical	
Inner jacket	TPE mixture, adapted to suit the requirements in e-chains®.	
Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical	
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 ▶ <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>	

### Electrical information

Nominal voltage	50 V
Testing voltage	500 V

## 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.
EAC	Certificate no. RU C-DE.ME77.B.01559 (TR ZU)
Lead-free	Following 2011/65/EU (RoHS-II).
Cleanroom	According to ISO Class 1. Outer jacket material complies with CF9.15.07, tested by IPA according to standard 14644-1.
DESINA	According to VDW, DESINA standardisation.
CE	Following 2014/35/EU.

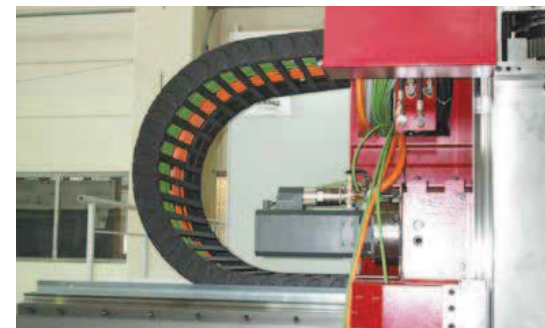
### Guaranteed lifetime according to guarantee conditions (Page 22-23)

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]
-35/-25	10	11	12
-25/+80	7.5	8.5	9.5
+80/+90	10	11	12

\* Higher number of double strokes? Online lifetime calculation: [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical mechanical application areas

- For extremely heavy duty applications
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications without direct solar radiation
- Unsupported travel distances and up to 400 m and more for gliding applications
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling equipment, Clean room, semiconductor handling, indoor cranes, low temperature applications



Pre-harnessed igus® energy supply systems for machine tool manufacture. e-chain®: System E4/4



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

Strip cables 50% faster

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
CF11.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.5	80	176	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
CF11.002.D	(3x(2x0.14)C+2x(0.5)C)C	10.0	82	188	CF11.002.D	3x(2x0.14)C 2x(0.5)C	green/yellow, black/brown, red/orange black, red
CF11.003.D	(3x(2x0.14)+2x1.0)C	8.5	61	124	CF11.003.D	3x(2x0.14) 2x1.0	white/brown, green/yellow, grey/pink blue, red
CF11.004.D <sup>11)</sup>	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	11.5	91	197	CF11.004.D <sup>11)</sup>	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
CF11.005.D	(4x(2x0.14)+4x0.5)C	9.0	68	144	CF11.005.D	4x(2x0.14) 4x0.5	white/brown, green/yellow, grey/pink, blue/red black, violet, grey-pink, red-blue
CF11.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0	93	202	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 brown-yellow/brown-grey/green-black/green-red brown-red/brown-blue
CF11.007.D <sup>2)</sup>	(4x0.34)C	6.0	32	65	CF11.007.D <sup>2)</sup>	4x0.34	white, green, brown, yellow(star-quad stranding)
CF11.008.D	(3x(2x0.25))C	7.5	37	81	CF11.008.D	3x(2x0.25)	white/brown, green/yellow, grey/pink
CF11.009.D	(4x(2x0.25)+2x0.5)C	9.5	66	137	CF11.009.D	4x(2x0.25) 2x0.5	brown/green, blue/violet, grey/pink, red/black white, brown
CF11.010.D	(4x(2x0.25)+2x1.0)C	9.5	80	161	CF11.010.D	4x(2x0.25) 2x1.0	brown/green, blue/violet, grey/pink, red/black white, brown
CF11.011.D	(4x(2x0.34)+4x0.5)C	10.5	96	201	CF11.011.D	4x(2x0.34) 4x0.5	black/brown, red/orange, green/yellow, blue/violet black-white, red-white, yellow-white, blue-white
CF11.012.D	(3x(2x0.14)C+(3x0.14)C+(4x0.14)+(2x0.14+2x0.5))C	11.5	99	222	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
CF11.013.D	(3x(2x0.14)C+2x0.5)C	9.5	70	152	CF11.013.D	3x(2x0.14)C 2x0.5	white/brown, green/yellow, grey/pink blue, red
CF11.014.D	(4x(2x0.25)C+(2x0.5))C	11.5	95	212	CF11.014.D	4x(2x0.25)C (2x0.5)	white/brown, green/yellow, grey/pink, blue/red black no.1/black no.2
CF11.015.D	(4x(2x0.14)+4x0.5)C	9.0	68	140	CF11.015.D	4x(2x0.14) 4x0.5	brown/green, yellow/blue/violet, grey/pink, red/black blue, white, brown-green, white-green
CF11.016.D <sup>11)</sup>	(3x(2x0.25)C)C	9.5	65	144	CF11.016.D <sup>11)</sup>	3x(2x0.25)C	white/brown, green/yellow, grey/pink
CF11.017.D <sup>4)</sup>	(4x(2x0.14)+(4x0.14)C+4x1.0)C	11.0	116	245	CF11.017.D <sup>4)</sup>	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

The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
<sup>4)</sup> manufactured without inner jacket  
<sup>11)</sup> Phase-out model  
**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.  
**G** = with green-yellow earth core **x** = without earth core

Other types ► page 242

Guarantee  
igus standard  
**36**  
month guarantee

UL US

NFPA

RoHS-II

Clean-Room

DESNA

CE

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°

Strip cables 50% faster

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
CF11.018.D <sup>4)</sup>	(2x(2x0.25)+2x0.5)C	6.5	40	76	CF11.018.D <sup>4)</sup>	2x(2x0.25) 2x0.5	red/black, grey/pink white, brown
CF11.019.D <sup>4) 11)</sup>	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.5	106	228	CF11.019.D <sup>4) 11)</sup>	3x(2x0.25)C (3x0.25) 2x1.0	brown/green, grey/pink, red/black blue/violet/yellow white, brown
CF11.021.D	((4x0.25)+3x(2x0.25+2x0.5))C	11.0	102	213	CF11.021.D	(4x0.25) 3x2x0.25	white/brown/grey/black white/yellow, white/grey, black/orange
CF11.022.D	((2x0.25)+5x0.5)C	8.5	55	120	CF11.022.D	3x2x0.5 (2x0.25) 5x0.5	black no.1/black no.2, black no.3/black no.4, black no.5/black no.6 white/brown green, yellow, grey, pink, blue
CF11.025.D	(3x(2x0.14)C+(2x0.5)C)C	10.5	81	182	CF11.025.D	(2x0.5)	green/yellow, blue/red, grey/pink white/brown
CF11.027.D	(5x(2x0.14)+2x0.5)C	9.0	58	121	CF11.027.D	5x(2x0.14) 2x0.5	brown/green, yellow/grey, white/violet, red-black, pink/blue white-green, white-red
CF11.029.D <sup>11)</sup>	(5x(2x0.25)C+(2x0.25+2x0.5))C	12.5	119	270	CF11.029.D <sup>11)</sup>	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
CF11.031.D	(2x(2x0.25)C+2x1.0)C	9.0	76	155	CF11.031.D	2x(2x0.25)C 2x1.0	white/brown, green/yellow black no.1, black no.2
CF11.032.D <sup>5)</sup>	3x(2x0.14)C+(3x0.14)C	8.0	68	151	CF11.032.D <sup>5)</sup>	3x(2x0.14)C (3x0.14)C	green/black, yellow/black, red/black grey/pink/black
CF11.033.D <sup>5)</sup>	4x(2x0.14)C+2x(1.0)C	10.0	107	240	CF11.033.D <sup>5)</sup>	4x(2x0.14)C 2x(1.0)C	yellow/black, red/black, blue/black, green/black white, brown
CF11.034.D <sup>5)</sup>	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	11.5	116	188	CF11.034.D <sup>5)</sup>	3x(2x0.14)C (4x0.14)C 2x(2x0.5)C	green/black, violet/black, blue/black red/yellow/black-red/black-yellow black/white, black/brown
CF11.035.D <sup>11)</sup>	(4x(2x0.25)C+2x(2x0.5))C	12.5	114	254	CF11.035.D <sup>11)</sup>	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
CF11.038.D <sup>11)</sup>	(3x(2x0.14)+(2x0.34))C	8.0	36	72	CF11.038.D <sup>11)</sup>	3x(2x0.14) (2x0.34)	white/brown, green/yellow, grey/pink blue/red
CF11.040.D	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.5	101	155	CF11.040.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

<sup>4)</sup> manufactured without inner jacket

<sup>5)</sup> manufactured without overall shield

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

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.

G = with green-yellow earth core x = without earth core

Other types ► page 240

