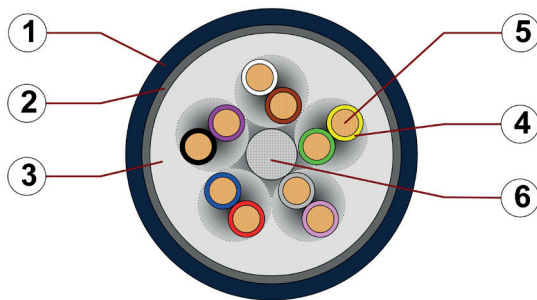


Data sheet

chainflex® CF11



Data cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket
● Shielded ● Twisted pair ● Oil and bio-oil resistant ● PVC and halogen-free ● Hydrolysis
and microbe-resistant



1. Outer jacket: Pressure extruded, halogen-free TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Inner jacket: Pressure extruded, gusset-filling TPE mixture
4. Core insulation: Mechanically high-quality TPE mixture
5. Conductor: Fine-wire strand in especially bending-stable version consisting of bare copper wires
6. Strain relief: Tensile stress-resistant centre element

Example image

For detailed overview please see design table

Cable structure

	Conductor	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	Core insulation	Mechanically high-quality TPE mixture.
	Core structure	Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.
	Core identification	Cores < 1.0 mm²: Colour code in accordance with DIN 47100 Cores ≥ 1.0 mm²: Black cores with white numbers.
	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: Steel-blue (similar to RAL 5011) Printing: white

„00000 m“* igus chainflex CF11.---.02① ---② E310776

RU AWM Style -----③ 90°C ---V④ RoHS-II conform EAC CE UKCA

www.igus.eu +++ chainflex cable works +++

* **Length printing:** Not calibrated. Only intended as an orientation aid.

① / ② Cable identification according to Part No. (see technical table).

③ / ④ Printing of UL information (see related chapter).

Example: ... chainflex ... CF11.01.04.02 ... (4x(2x0.14))C ... EAC ...



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



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Dynamic information

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

These values are based on specific applications or tests. They do not represent the limit of what is technically feasible.

Guaranteed service life according to guarantee conditions

Double strokes	5 million	7.5 million	12.5 million
Temperatur, von/bis [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	7.5	8.5	9.5
-25/+90	6.8	7.5	8.5
+90/+100	7.5	8.5	9.5

Minimum guaranteed service life of the cable under the specified conditions.
The installation of the cable is recommended within the middle temperature range.

Electrical information

	Nominal voltage	300/300 V (following DIN VDE 0298-3) 300 V (following UL)
	Testing voltage	1500 V (following DIN EN 50395)



Example image

igus® chainflex® CF11

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Properties and approvals

	UV resistance	High
	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	Details see table UL AWM
	EAC	Certificate No. RU C-DE.ME77.B.00300/19 (TR ZU)
	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
	CE	Following 2014/35/EU
	UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

Properties and approvals

UL AWM details

Conductor nominal cross section [mm²]	Number of cores	UL style core insulation	UL style outer jacket	UL Voltage Rating [V]	UL Temperature Rating [°C]
0.14	8-36	11884	22357	300	90
0.25	2-28	11884	22357	300	90
0.34	16	11884	22357	300	90
0.5	8-16	11884	22357	300	90
0.75	6	11884	22357	300	90
1	8	11884	22357	300	90
1.5	12	11884	22357	300	90



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



Example image

Data sheet

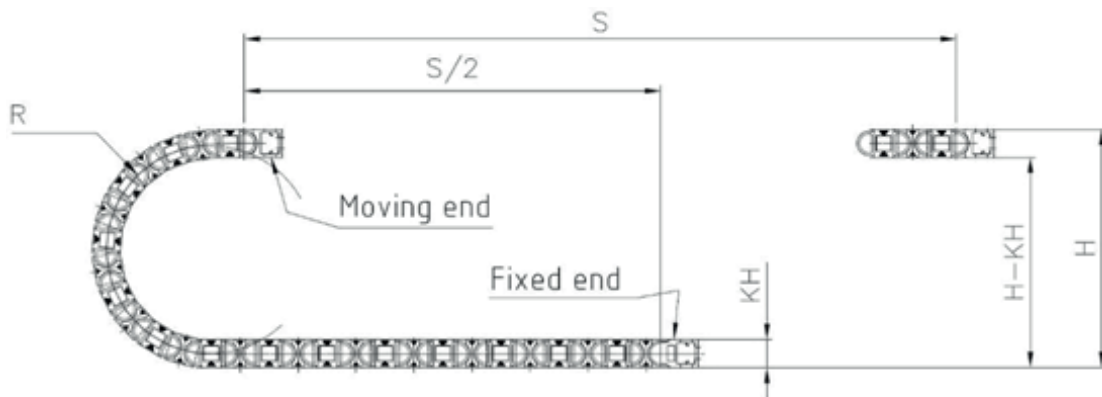
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Typical lab test setup for this cable series

Test bend radius R	approx. 38 - 115 mm
Test travel S	approx. 1 - 15 m
Test duration	minimum 2 - 4 million double strokes
Test speed	approx. 0.5 - 2 m / s
Test acceleration	approx. 0.5 - 1.5 m / s ²



Typical application areas

- For extremely heavy duty applications, Class 6
- Unsupported travel distances and up to 400 m 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, UV-resistant
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications



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Technical tables:

Mechanical information

Art.-Nr.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF11.01.04.02	(4x(2x0.14))C	7.5	30	63
CF11.01.18.02	(18x(2x0.14))C	12.5	101	202
CF11.02.01.02	(2x0.25)C	6.0	17	39
CF11.02.02.02 ²⁾	(2x(2x0.25))C	6.5	26	47
CF11.02.03.02	(3x(2x0.25))C	8.0	35	78
CF11.02.04.02	(4x(2x0.25))C	8.5	42	90
CF11.02.05.02	(5x(2x0.25))C	9.0	49	100
CF11.02.06.02	(6x(2x0.25))C	10.0	69	125
CF11.02.10.02	(10x(2x0.25))C	13.5	103	207
CF11.02.14.02	(14x(2x0.25))C	14.0	124	228
CF11.03.08.02	(8x(2x0.34))C	13.0	106	209
CF11.05.04.02	(4x(2x0.5))C	9.5	77	140
CF11.05.06.02	(6x(2x0.5))C	12.0	103	198
CF11.05.08.02	(8x(2x0.5))C	14.5	135	251
CF11.07.03.02	(3x(2x0.75))C	10.5	83	155
CF11.10.04.02	(4x(2x1.0))C	12.5	125	232
CF11.15.06.02	(6x(2x1.5))C	16.5	247	420

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

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

Electrical information

Conductor nominal cross section [mm²]	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km]	Max. current rating at 30 °C [A]
0.14	138	2.5
0.25	79	5
0.34	57	7
0.5	39	10
0.75	26	14
1	19.5	17
1.5	13.3	21

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.



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Design table

Part No.	Number of cores	Core design	Part No.	Number of cores	Core design
CF11.XX.01.02	2		CF11.XX.08.02	8x2	
CF11.XX.02.02	4		CF11.XX.09.02	9x2	
CF11.XX.03.02	3x2		CF11.XX.10.02	10x2	
CF11.XX.04.02	4x2		CF11.XX.14.02	14x2	
CF11.XX.05.02	5x2		CF11.XX.18.02	18x2	
CF11.XX.06.02	6x2				



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Colour code in accordance with DIN 47100

Conductor no.	Colours according to DIN ISO 47100
1	white
2	brown
3	green
4	yellow
5	grey
6	pink
7	blue
8	red
9	black
10	violet
11	grey-pink
12	red-blue
13	white-green
14	brown-green
15	white-yellow
16	brown-yellow
17	white-grey
18	brown-grey

Conductor no.	Colours according to DIN ISO 47100
19	white-pink
20	white-brown
21	white-blue
22	brown-blue
23	white-red
24	brown-red
25	white-black
26	brown-black
27	grey-green
28	yellow-grey
29	pink-green
30	yellow-pink
31	green-blue
32	yellow-blue
33	green-red
34	yellow-red
35	green-black
36	yellow-black



Example image

