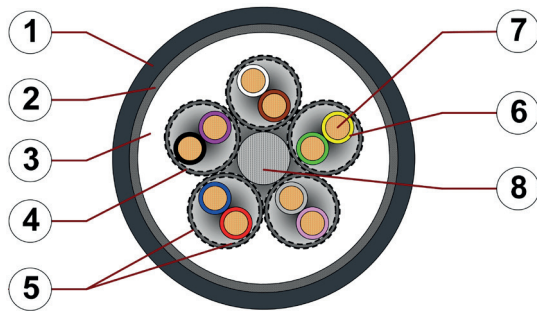


# Data sheet

## chainflex® CF112



- Data cable (Class 6.5.3.1) ● For extremely heavy duty applications ● PUR outer jacket  
 ● Double shielded ● twisted pair ● Oil resistant and coolant-resistant ● Flame retardant  
 ● PVC and halogen-free ● Notch-resistant ● Hydrolysis and microbe-resistant



1. Outer jacket: Pressure extruded PUR mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Inner jacket: Pressure extruded, gusset-filling PUR mixture
4. Element shield: Extremely bending-resistant braiding made of tinned copper wires
5. Banding: Plastic foil
6. Core insulation: Mechanically high-quality TPE mixture
7. Conductor: Very finely stranded special cores of particularly high-flex design made of bare copper wires
8. Strain relief: Tensile stress-resistant centre element

**Example image**  
 For detailed overview please see design table

### Cable structure

	<b>Conductor</b>	Very finely stranded special conductors of particularly bending resistant design made of bare copper wires.
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Core structure</b>	Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.
	<b>Core identification</b>	Colour code in accordance with DIN 47100
	<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
	<b>Inner jacket</b>	PUR mixture adapted to suit the requirements in e-chains®.
	<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
	<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2). Colour: Anthracite grey (similar to RAL 7016) Printing: white

„00000 m<sup>4</sup>\*\* igus chainflex CF112.--.--.02① ---② E310776 cRUus AWM

Style 20233 VW-1 AWM I/II A/B 80°C 300V FT1 DNV 13 656-14 HH

EAC CE UKCA RoHS-II conform www.igus.de +++ chainflex cable works +++

\* **Length printing:** Not calibrated. Only intended as an orientation aid.  
 ① / ② Cable identification according to Part No. (see technical table).  
 Example: ... chainflex **CF112.02.04.02 (4x(2x0.25)C)C E310776** ...



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




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### Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b> <b>flexible</b> <b>fixed</b>	minimum 10 x d minimum 8 x d minimum 5 x d
	<b>Temperature</b>	<b>e-chain® linear</b> <b>flexible</b> <b>fixed</b>	-25 °C up to +80 °C -40 °C up to +80 °C (following DIN EN 60811-504) -50 °C up to +80 °C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b> <b>gliding</b>	10 m/s 5 m/s
	<b>a max.</b>		80 m/s <sup>2</sup>
	<b>Travel distance</b>		Unsupported travels and up to 100 m for gliding applications, Class 5



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

	5 million	7.5 million	10 million
<b>Temperature, from/to [°C]</b>	<b>R min. [factor x d]</b>	<b>R min. [factor x d]</b>	<b>R min. [factor x d]</b>
-25/-15	12.5	13.5	14.5
-15/+70	10	11	12
+70/+80	12.5	13.5	14.5

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

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



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



Example image

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### Properties and approvals

-  **UV resistance** High
-  **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** Details see table UL AWM
-  **NFPA** Following NFPA 79-2018, chapter 12.9
-  **DNV** Type approval certificate No. 13 656-14 HH
-  **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 CF77. UL.05.12.D - 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)



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



### Properties and approvals

#### UL/CSA AWM Details

Conductor nominal cross section [mm <sup>2</sup> ]	Number of cores	UL style core insulation	UL style outer jacket	UL Voltage Rating [V]	UL Temperature Rating [°C]
0.25	4-10	10493	20233	300	80
0.5	4-12	10493	20233	300	80

Example image

igus® chainflex® CF112

# Data sheet

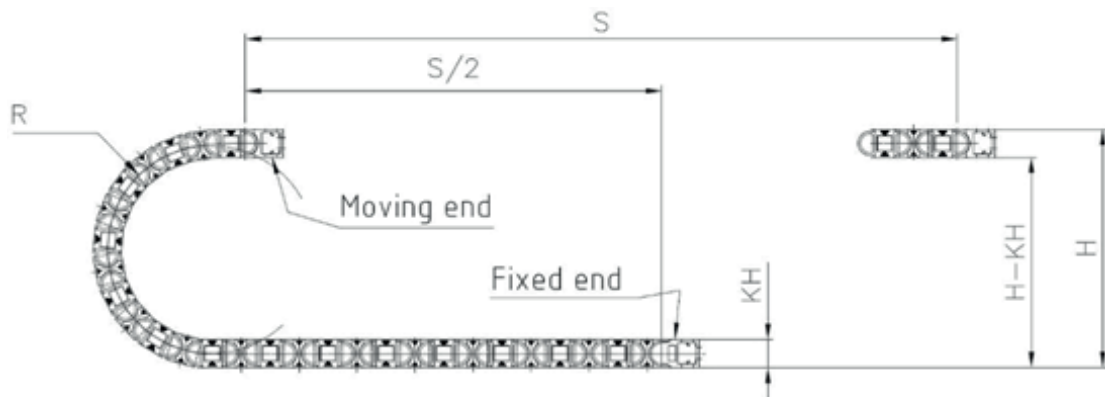
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### Typical lab test setup for this cable series

Test bend radius R	approx. 100 - 135 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 <sup>2</sup>



### Typical application areas

- For heaviest duty applications, Class 6
- Unsupported travel distances and up to 100 m for gliding applications, Class 5
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications with average sun radiation
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector



Example image



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### Technical tables:

#### Mechanical information

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF112.02.02.02	(2x(2x0.25)C)C	9.5	57	118
CF112.02.03.02	(3x(2x0.25)C)C	10.0	71	133
CF112.02.04.02	(4x(2x0.25)C)C	11.0	78	153
CF112.02.05.02	(5x(2x0.25)C)C	11.5	99	178
CF112.05.02.02	(2x(2x0.5)C)C	11.5	75	163
CF112.05.04.02	(4x(2x0.5)C)C	13.0	117	217
CF112.05.06.02	(6x(2x0.5)C)C	14.5	160	285

**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 [mm <sup>2</sup> ]	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km]	Max. current rating at 30 °C [A]
0.25	79	5
0.5	39	10

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



Example image



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### Design table

Part No.	Number of cores	Core design	Part No.	Number of cores	Core design
CF112.XX.02.02	2x2		CF112.XX.05.02	5x2	
CF112.XX.03.02	3x2		CF112.XX.06.02	6x2	
CF112.XX.04.02	4x2				



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Example image

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### Colour code in accordance with DIN 47100

Conductor no.	Colours according to DIN ISO 47100	Conductor no.	Colours according to DIN ISO 47100
1	white	19	white-pink
2	brown	20	pink-brown
3	green	21	white-blue
4	yellow	22	brown-blue
5	grey	23	white-red
6	pink	24	brown-red
7	blue	25	white-black
8	red	26	brown-black
9	black	27	grey-green
10	violet	28	yellow-grey
11	grey-pink	29	pink-green
12	red-blue	30	yellow-pink
13	white-green	31	green-blue
14	brown-green	32	yellow-blue
15	white-yellow	33	green-red
16	yellow-brown	34	yellow-red
17	white-grey	35	green-black
18	grey-brown	36	yellow-black



Example image

