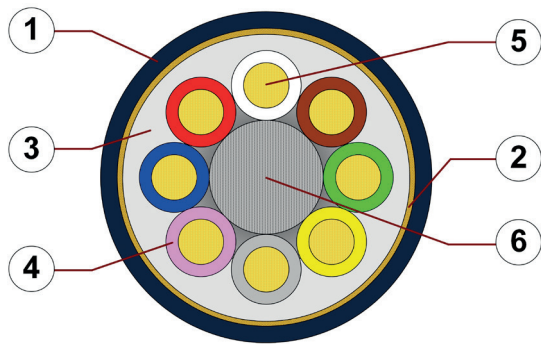


# Data sheet

## chainflex® CF99.PLUS



Control cable (Class 7.5.4.1) ● For heaviest duty applications and especially small radii down to 3 x d ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● PVC and halogen-free ● Low-temperature-flexible ● Hydrolysis and microbe-resistant



1. Outer jacket: Pressure extruded, halogen-free TPE mixture
2. Overall shield: Extremely bending resistant braiding made of alloy wires.
3. Inner jacket: Pressure extruded, gusset-filling TPE mixture
4. Core insulation: Mechanically high-quality TPE mixture
5. Conductor: Conductor consisting of a highly flexible special alloy
6. Strain relief: Tensile stress-resistant centre element

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

### Cable structure

	<b>Conductor</b>	Conductor consisting of a highly flexible special alloy.
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Core structure</b>	Cores wound in a layer with especially short pitch length.
	<b>Core identification</b>	Colour code in accordance with DIN 47100.
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
	<b>Overall shield</b>	Extremely bending resistant braiding made of alloy wires. Coverage approx. 70 % linear, approx. 90 % optical
	<b>Outer jacket</b>	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 CF99.PLUS.--① -----② 300/300V 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 **CF99.PLUS.01.02 (2x0.14)C 300 V/300 V ...**



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



Example image

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Example image

### Dynamic information

	<b>Bend radius</b>	e-chain® linear flexible fixed	minimum 3 x d minimum 3 x d minimum 3 x d
	<b>Temperature</b>	e-chain® linear flexible fixed	-35 °C up to +90 °C -50 °C up to +90 °C (following DIN EN 60811-504) -55 °C up to +90 °C (following DIN EN 50305)
	<b>v max.</b>	unsupported gliding	10 m/s 6 m/s
	<b>a max.</b>		100 m/s <sup>2</sup>
	<b>Travel distance</b>		Short, very fast applications with small radii and tight design space, 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

Double strokes	5 million	40 million	100 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>
-35/-25	4	6	7
-25/+80	3	5	6
+80/+90	4	6	7

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
	<b>Testing voltage</b>	1500 V



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Example image

### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754
	<b>UL verified</b>	Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
	<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
	<b>Cleanroom</b>	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
	<b>CE</b>	Following 2014/35/EU
	<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)



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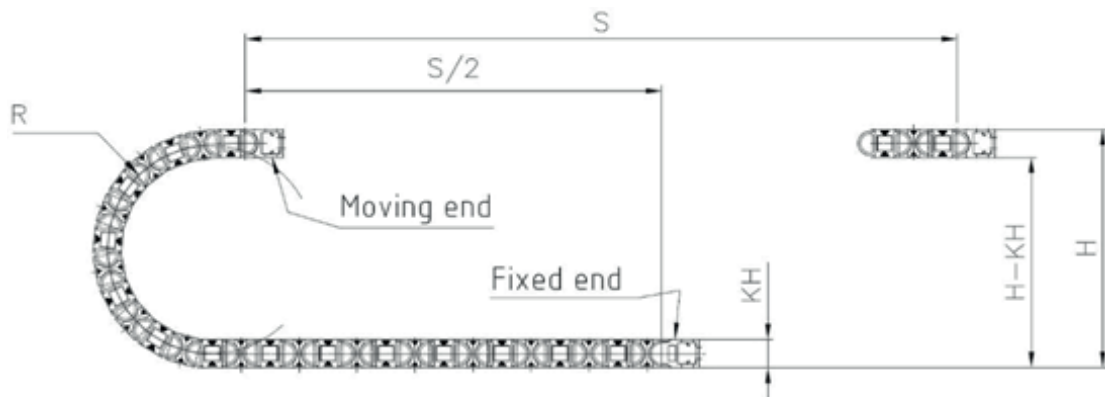
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Example image

### Typical lab test setup for this cable series

Test bend radius R	approx. 15 - 28 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 and especially small radii down to 3 x d, Class 7
- Especially for short, very fast applications with small radii and restricted installation space, Class 5
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant
- Pick and place machines, automatic doors, Clean room, very quick handling



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Example image

### 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]
CF99.PLUS.01.02	(2x0.14)C	6.0	12	39
CF99.PLUS.01.04	(4x0.14)C	6.5	16	48
CF99.PLUS.01.08	(8x0.14)C	8.0	28	76
CF99.PLUS.02.04	(4x0.25)C	7.0	23	60
CF99.PLUS.03.08	(8x0.34)C	9.5	45	111

**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]
0.14	140	2,5
0.25	88	5
0.34	72	7

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
CF99.PLUS.XX.02	2	
CF99.PLUS.XX.04	4	
CF99.PLUS.XX.07	7	
CF99.PLUS.XX.08	8	



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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



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