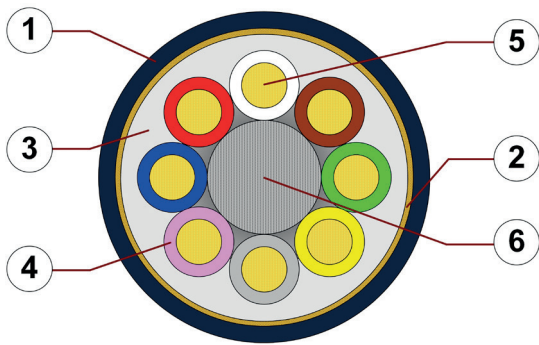


# Data sheet

## chainflex® CF99



Control cable (Class 7.5.4.1) ● For heaviest duty applications and especially small radii down to 4 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.--.① -----② 300/500V EAC CE

RoHS-II conform [www.igus.de](http://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 ... CF99.01.02 ... (2x0.14)C ... 300 V/300 V ...



Example image

# Data sheet

## chainflex® CF99








Control cable (Class 7.5.4.1) ● For heaviest duty applications and especially small radii down to 4 x d ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● PVC and halogen-free ● Low-temperature-flexible ● Hydrolysis and microbe-resistant



Example image

igus® chainflex® CF99

### Dynamic information

	<b>Bend radius</b>	e-chain® linear flexible fixed	minimum 4 x d minimum 4 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	20 million	30 million	40 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	5	6	7
-25/+80	4	5	6
+80/+90	5	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













# Data sheet

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### 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 (TR ZU)
	<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

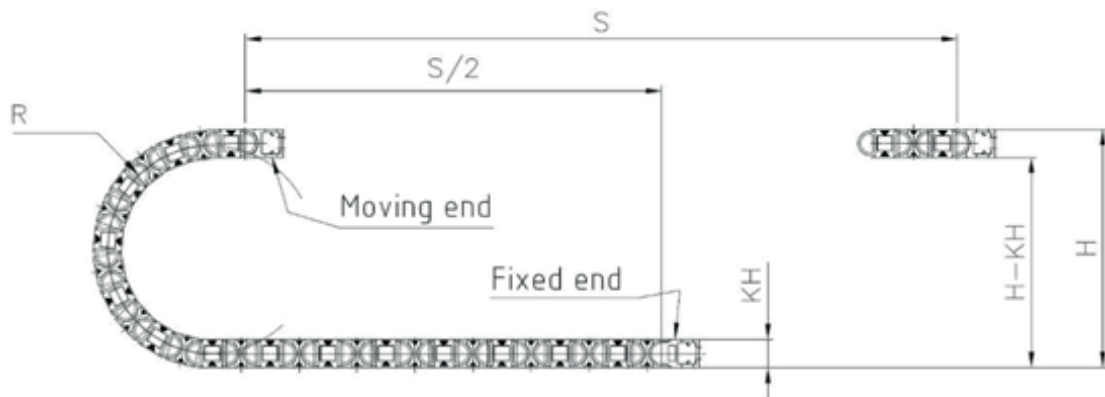


igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



### Typical lab test setup for this cable series

<b>Test bend radius R</b>	approx. 15 - 28 mm
<b>Test travel S</b>	approx. 1 - 15 m
<b>Test duration</b>	minimum 2 - 4 million double strokes
<b>Test speed</b>	approx. 0.5 - 2 m / s
<b>Test acceleration</b>	approx. 0.5 - 1.5 m / s <sup>2</sup>



Example image

igus® chainflex® CF99

# Data sheet

## chainflex® CF99



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### Typical application areas

- For heaviest duty applications and especially small radii down to 4 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



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



Example image

# Data sheet

## chainflex® CF99



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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]
CF99.01.02	(2x0.14)C	6.0	12	37
CF99.01.04	(4x0.14)C	6.5	17	47
CF99.01.08	(8x0.14)C	8.0	29	76
CF99.02.04	(4x0.25)C	7.0	24	60
CF99.03.08	(8x0.34)C	9.5	45	108

**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	Part No.	Number of cores	Core design
CF99.XX.02	2		CF99.XX.07	7	
CF99.XX.04	4		CF99.XX.08	8	



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	Conductor no.	Colours according to DIN ISO 47100
1	white	22	brown-blue	43	blue-black
2	brown	23	white-red	44	red-black
3	green	24	brown-red	45	white-brown-black
4	yellow	25	white-black	46	yellow-green-black
5	grey	26	brown-black	47	grey-pink-black
6	pink	27	grey-green	48	red-blue-black
7	blue	28	yellow-grey	49	white-green-black
8	red	29	pink-green	50	brown-green-black
9	black	30	yellow-pink	51	white-yellow-black
10	violet	31	green-blue	52	yellow-brown-black
11	grey-pink	32	yellow-blue	53	white-grey-black
12	red-blue	33	green-red	54	grey-brown-black
13	white-green	34	yellow-red	55	white-pink-black
14	brown-green	35	green-black	56	pink-brown-black
15	white-yellow	36	yellow-black	57	white-blue-black
16	brown-yellow	37	grey-blue	58	brown-blue-black
17	white-grey	38	pink-blue	59	white-red-black
18	brown-grey	39	grey-red	60	brown-red-black
19	white-pink	40	pink-red	61	black-white
20	white-brown	41	grey-black		
21	white-blue	42	pink-black		



Example image

