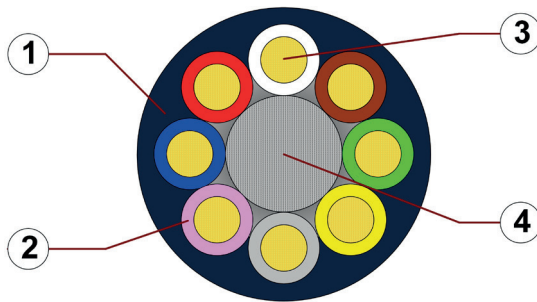


Data sheet

chainflex® CF98.PLUS



Control cable (Class 7.5.4.2) • For heaviest duty applications and especially small radii down to $3 \times d$ • TPE outer jacket • Oil and bio-oil resistant • PVC and halogen-free • Low-temperature-flexible • Hydrolysis and microbe-resistant



1. Outer jacket: Pressure extruded, gusset-filling, halogen-free TPE mixture
2. Core insulation: Mechanically high-quality TPE mixture
3. Conductor: Conductor consisting of a highly flexible special alloy
4. Strain relief: Tensile stress-resistant centre element

Example image

For detailed overview please see design table

Cable structure



Conductor

Conductor consisting of a highly flexible special alloy.



Core insulation

Mechanically high-quality TPE mixture.



Core structure

Cores wound in a layer with especially short pitch length.



Core identification

Colour code in accordance with DIN 47100.

CF98.PLUS.02.03.INI: brown, blue, black

CF98. PLUS.03.04.INI: brown, blue, black, white



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 CF98.PLUS.--① -----② 300/500V CE

RoHS-II conform 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).

Example: ... chainflex CF98.PLUS.01.02 2x0.14 300 V/500 V ...



Example image

Data sheet

chainflex® CF98.PLUS



Control cable (Class 7.5.4.2) ● For heaviest duty applications and especially small radii down to 3 x d ● TPE outer jacket ● Oil and bio-oil resistant ● PVC and halogen-free ● Low-temperature-flexible ● Hydrolysis and microbe-resistant

Dynamic information

	Bend radius	e-chain® linear flexible fixed	minimum 3 x d minimum 3 x d minimum 3 x d
	Temperature	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)
	v max.	unsupported gliding	10m/s 6m/s
	a max.		100m/s²
	Travel distance		Short, very fast applications with small radii and restricted installation space, Class 5
	Torsion		Torsion ±90°, with 1m cable length, Class 2

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
Temperature, from/to [°C]	R min. [x d]	R min. [x d]	R min. [x d]
-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

	Nominal voltage	300/500V (following DIN VDE 0298-3)
	Testing voltage	2000V (following DIN EN 50395)



Example image



Data sheet

chainflex® CF98.PLUS



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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
	PTFE-free	The design of these products does not contain PTFE
	UL-verified	Certificate No. V293650: „igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
	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
	Dry cleanroom	Tested in „dry cleanroom“ according to DIN EN ISO 14644-1, Report No. IG 2405-1526
	CE	Following 2014/35/EU



Data sheet

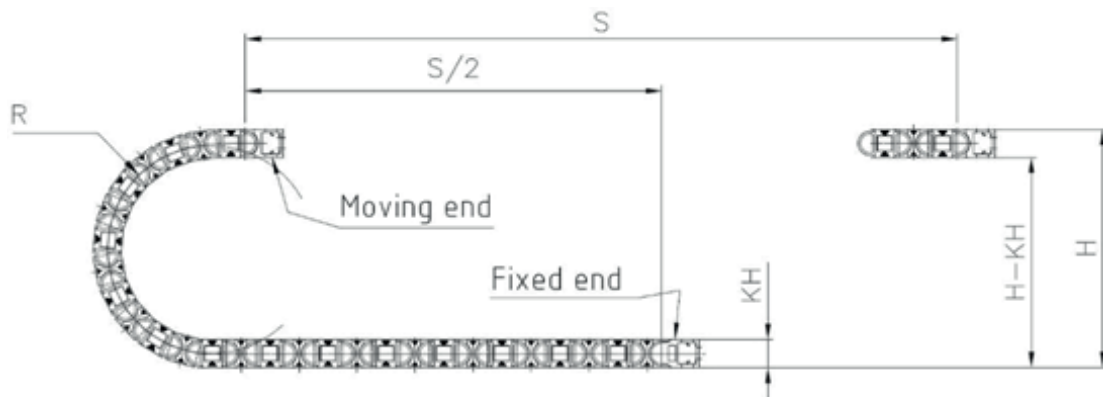
chainflex® CF98.PLUS



Control cable (Class 7.5.4.2) ● For heaviest duty applications and especially small radii down to $3 \times d$ ● TPE outer jacket ● Oil and bio-oil resistant ● PVC and halogen-free ● Low-temperature-flexible ● Hydrolysis and microbe-resistant

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 ²



Typical application areas

- For heaviest duty applications and very small radii down to $3 \times d$, 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
- Torsion $\pm 90^\circ$, with 1m cable length, Class 2
- Indoor and outdoor applications, UV-resistant
- Pick and place machines, automatic doors, cleanroom, very quick handling



Example image



Data sheet

chainflex® CF98.PLUS



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Technical tables:

Mechanical information

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF98.PLUS.01.02	2x0.14	4.5	4	18
CF98.PLUS.01.03	3x0.14	4.5	6	20
CF98.PLUS.01.04	4x0.14	5.0	7	25
CF98.PLUS.01.08	8x0.14	6.5	15	45
CF98.PLUS.02.03.INI	3x0.25	5.0	10	29
CF98.PLUS.02.04	4x0.25	5.5	14	36
CF98.PLUS.02.08	8x0.25	7.5	29	68
CF98.PLUS.03.04.INI	4x0.34	6.0	15	38
CF98.PLUS.05.04	4x0.5	6.0	32	53

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

Mechanical conductor cross sections

Conductor cross section [mm²]	Mechanical conductor cross section approx. [mm²]
0.14	0.20
0.25	0.39
0.34	0.47
0.5	0.66

The mechanical properties are above those of pure copper conductors due to the alloy conductor used

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	140	2,5
0.25	88	5
0.34	72	7
0.5	50	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.



igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



Example image

igus® chainflex® CF98.PLUS

Data sheet

chainflex® CF98.PLUS



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Design table

Part No.	Number of cores	Core design	Part No.	Number of cores	Core design
CF98.PLUS.XX.02	2		CF98.PLUS.XX.04.INI	4	
CF98.PLUS.XX.03	3		CF98.PLUS.XX.07	7	
CF98.PLUS.XX.03.INI	3		CF98.PLUS.XX.08	8	
CF98.PLUS.XX.04	4				



Data sheet

chainflex® CF98.PLUS



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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	yellow-brown
17	white-grey
18	grey-brown

Conductor no.	Colours according to DIN ISO 47100
19	white-pink
20	pink-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

