

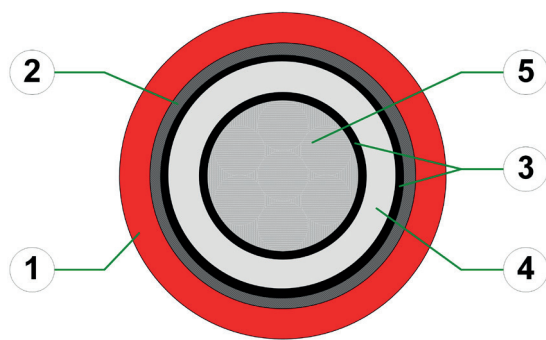
Data sheet

chainflex® CFCRANE.PUR



Medium voltage cable (Class 6.6.3.1) ● For maximum voltages and outputs

- PUR outer jacket ● Shielded ● Oil resistant and coolant-resistant ● Flame-retardant
- PVC and halogen-free ● Notch-resistant ● Hydrolysis and microbe-resistant



1. Outer jacket: Pressure extruded, especially abrasion-resistant and highly bending-stable PUR mixture
2. Overall shield: Extremely bending-resistant wrapping made of tinned copper wires
3. Core insulation: Conductive rubber
4. Core insulation: Extruded EPR insulation between conductive rubber
5. Conductor: Highly-flexible cable consisting of bare copper wires

Example image

For detailed overview please see design table

Cable structure



Conductor

Highly-flexible cable consisting of bare copper wires (according to DIN EN 60228).



Core insulation

Inner and outer semiconducting layer made of conductive rubber. Insulating sheath made of highly-quality, heat-resistant and ozone-proof ethylene propylene rubber (EPR).



Overall shield

Extremely bending-resistant wrapping made of tinned copper wires
Coverage approx. 85% optical



Outer jacket

Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2).

Colour: Fire red (similar to RAL 3000)

Printing: White

„00000 m** igus chainflex CFCRANE.PUR.--① ---② ③ kV U_{bmax} 12 kV

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).

③ Printing of nominal voltage (see general electrical values).

Example: ... chainflex CFCRANE.PUR.950.01 (1x95/16)C 6/10 kV ...



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



Example image

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Dynamic information

	Bend radius	e-chain® linear flexible fixed	minimum 10 x d minimum 8 x d minimum 5 x d
	Temperature	e-chain® linear flexible fixed	-20°C up to +80°C -25°C up to +80°C (following DIN EN 60811-504) -30°C up to +80°C (following DIN EN 50305)
	v max.	unsupported gliding	10m/s 6m/s
	a max.	50m/s ²	
	Travel distance	Unsupported travels and up to 400m and more 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	10 million
Temperature, from/to [°C]	R min. [x d]	R min. [x d]	R min. [x d]
-20/-10	12.5	13.5	14.5
-10/+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

	Nominal voltage	6/10kV or 8.7/15kV (following DIN VDE 0250), further voltages upon request.
	Testing voltage	24kV (following DIN VDE 0250, Part 813)

Example image

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Properties and approvals

	UV resistance	Medium
	Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
	Flame-retardant	According to IEC 60332-1-2
	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)
	CE	Following 2014/35/EU



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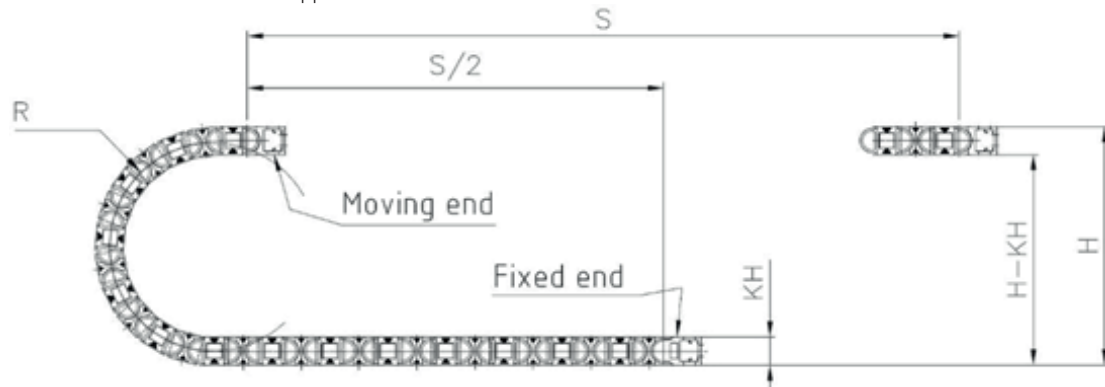
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Typical lab test setup for this cable series

Test bend radius R	approx. 250 - 300 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 maximum voltages and outputs, Class 6
- Unsupported travels and up to 400m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant
- Ship to shore, crane applications, conveyor technology

Example image



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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]
CFCRANE.PUR.350.01.6/10kV ¹⁾	(1x35/16)C	26.0	568	852
CFCRANE.PUR.500.01.6/10kV ¹⁾	(1x50/16)C	27.0	722	1025
CFCRANE.PUR.700.01.6/10kV ¹⁾	(1x70/16)C	29.0	941	1249
CFCRANE.PUR.950.01.6/10kV ¹⁾	(1x95/16)C	31.0	1166	1523

¹⁾ Phase-out model

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]	Maximum current rating at 30 °C (following DIN VDE 0298-4) [A]
35	0.554	179
50	0.386	228
70	0.272	285
95	0.206	348

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

Short circuit capacity (I_{thz}) according to DIN VDE 0298-4 (at $T_{Leiter} = 80 °C$ and $T_{Kurzschluss} = 250 °C$)

Conductor nominal cross section (S_n) [mm²]	Short circuit capacity (I_{thz}) [kA] [$t_k = 1 s$]	Short circuit capacity (I_{thz}) [kA] [$t_k = 0.5 s$]
35	5.2	7.4
50	7.5	10.5
70	10.4	14.7
95	14.2	20.0

J_{thr} : Short-time current density = 149 A/mm²

S_n : Nominal cross section

t_{kr} : Rated short-circuit duration = 1 s

t_k : Short-circuit duration

$$I_{thz} = J_{thr} \cdot S_n \cdot \sqrt{\frac{t_{kr}}{t_k}}$$

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