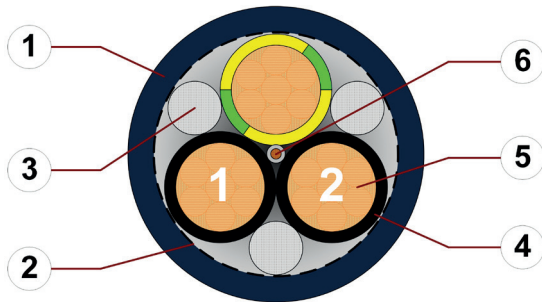


Data sheet

chainflex® CFROBOT6



Motor cable (Class 6.1.3.3) ● For torsion applications ● PUR outer jacket
 ● Oil-resistant and coolant-resistant ● Flame-retardant ● PVC and halogen-free
 ● Notch-resistant ● Hydrolysis and microbe-resistant



Example image
 For detailed overview please see design table

1. Outer jacket: Pressure extruded PUR mixture
2. Banding: Plastic fleece
3. Filling: Plastic yarns
4. Core insulation: Mechanically high-quality TPE mixture
5. Conductor: Stranded conductor in especially bending-resistant version consisting of bare copper wires
6. Strain relief: Tensile stress-resistant and torsion-resistant centre element

Cable structure

	Conductor	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	Core insulation	Mechanically high-quality TPE mixture.
	Core identification	Black cores with white numbers 1-2, one green-yellow core.
	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: Steel-blue (similar to RAL 5011) Printing: white

„00000 m“* igus chainflex CFROBOT6---① ---② 600/1000V E310776

cRUus AWM Style 21223 VW-1 AWM I/II A/B 80°C 1000V FT1

CE 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 CFROBOT6.100.03 3G10 600/1000V



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



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Dynamic information

	Bend radius	flexible twisted fixed	minimum 10 x d minimum 5 x d
	Temperature	flexible twisted fixed	-25°C up to +80°C -50°C up to +80°C (following DIN EN 50305)
	v max.	twisted	180°/s
	a max.	twisted	60°/s ²
	Travel distance	Robots and multi-axis movements, Class 1	
	Torsion	Torsion ±180°, with 1m cable length, Class 3	

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

Cycles	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-25/-15	±150	±90	±30
-15/+70	±180	±120	±60
+70/+80	±150	±90	±30

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	600/1000V (following DIN VDE 0298-3) 1000V (following UL)
	Testing voltage	4000V (following DIN EN 50395)

Example image

igus® chainflex® CFROBOT 6



Data sheet

chainflex® CFROBOT6



Motor cable (Class 6.1.3.3) ● For torsion applications ● PUR outer jacket
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Properties and approvals

	UV resistance	High
	Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
	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
	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“
	UL/CSA AWM	See table UL/CSA AWM for details
	NFPA	Following NFPA 79-2018, chapter 12.9
	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

Properties and approvals

UL/CSA AWM Details

Conductor nominal cross section [mm²]	Number of cores	UL style core insulation	UL style outer jacket	UL Voltage Rating [V]	UL Temperature Rating [°C]
10	3	10492	21223	1000	80
16	3	10492	21223	1000	80
25	3	10492	21223	1000	80



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



Example image

Data sheet

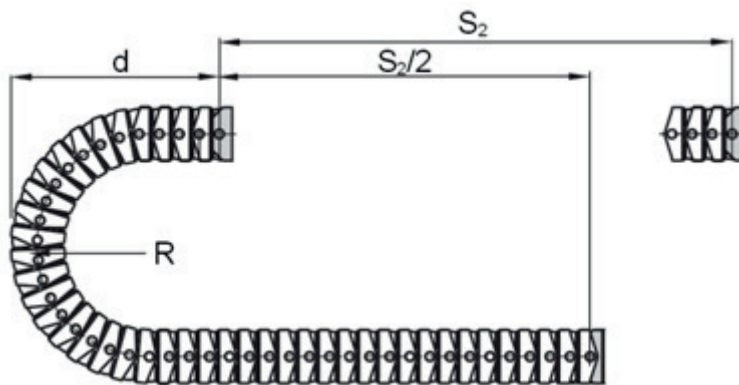
chainflex® CFROBOT6



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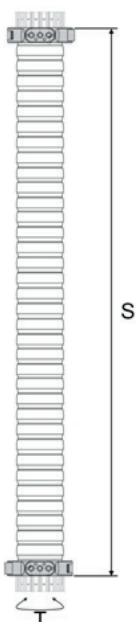
Typical lab test setup for this cable series

Test bend radius R	approx. 175 - 200 mm
Test travel S/S_2	approx. 1 - 12 m
Test duration	minimum 1.5 - 3 million double strokes
Test speed	approx. 0.5 m/s
Test acceleration	approx. 1.5 m/s^2



Typical lab test setup (torsion) for this cable series

Torsion range T	$\pm 180^\circ/\text{m}$
Length 3D e-chain®	1 m
Test duration (torsion)	minimum 3 - 5 million cycles
Test speed (torsion)	approx. 80 - 120 °/s
Test acceleration (torsion)	approx. $40^\circ/\text{s}^2$



Example image



Data sheet

chainflex® CFROBOT6



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Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and multi-axis movements, Class 1
- Almost unlimited resistance to oil, Class 3
- Torsion $\pm 180^\circ$, with 1m cable length, Class 3
- Indoor and outdoor applications, UV-resistant
- Robots, handling, lead screw drives

Technical tables:

Mechanical information

Part No.	Number of cores and conductor nominal cross section [mm ²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CFROBOT6.160.03 ¹⁾	3G16	18.0	475	578
CFROBOT6.250.03 ¹⁾	3G25	22.0	737	896

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 [mm ²]	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km]	Maximum current rating at 30 °C [A]
16	1.3	99
25	0.85	131

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

igus® chainflex® CFROBOT 6