

Measuring system cable | PUR | chainflex® CFROBOT4

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

Dynamic information

	Bend radius	e-chain® twisted	minimum 10 x d
		flexible	minimum 8 x d
		fixed	minimum 5 x d
	Temperature	e-chain® twisted	-25 °C to +80 °C
		flexible	-40 °C to +80 °C (following DIN EN 60811-504)
		fixed	-50 °C to +80 °C (following DIN EN 50305)
	v max.	twisted	180 °/s
	a max.	twisted	60 °/s²
	Travel distance	Robots and multi-axis movements, Class 1	
	Torsion	± 180°, with 1 m cable length, Class 3	

Cable structure

	Conductor	Stranded conductor in especially bending-resistant design consisting of bare copper wires (following DIN EN 60228).	
	Core insulation	Mechanically high-quality TPE mixture.	
	Core identification	According to measuring system specification. ► Product range table	
	Element shield	Extremely torsion-resistant tinned braided copper shield.	
	Overall shield	Torsion resistant tinned braided copper shield. Coverage approx. 80 % optical	
	Outer jacket	Low-adhesion, 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)	

Electrical information

	Nominal voltage	50 V
	Testing voltage	500 V

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	≥ 400 m
Oil resistance	none	1	2	3	4	5	6	7	highest
Torsion	none	1	2	3	4	5	6	7	±180°

Class 6.1.3.3

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, CEI 20-35, FT1, VW-1
	Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	Halogen-free	Following DIN EN 60754.
	UL/CSA	Style 1589 and 20236, 30 V, 80 °C
	NFFA	Following NFPA 79-2012 chapter 12.9.
	EAC	Certificate no. RU C-DE.ME77.B.01218 (TR ZU)
	CTP	Certificate no. C-DE.PB49.B.00416 (Fire safety)
	CEI	Following CEI 20-35.
	Lead-free	Following 2011/65/EU (RoHS-II).
	Cleanroom	According to ISO Class 1. Outer jacket material complies with CF27.07.05.02.01.D, tested by IPA according to standard 14644-1.
	CE	Following 2014/35/EU.

Guaranteed lifetime according to guarantee conditions (Page 22-23)

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

* Higher number of cycles? Online lifetime calculation: www.igus.eu/chainflexlife

Typical mechanical application areas

- For extremely heavy duty applications with torsional movements
- Almost unlimited resistance to oil
- Indoor and outdoor applications, UV resistant
- Especially for robots and multi-axis movements
- Robots, Handling, spindle drives

igus® chainflex® CFROBOT4

Example image

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Core group	Colour code
CFROBOT4.001	(3x(2x0.14)C)+(4x0.14)+(2x0.5)C	10.5	65	119	CFROBOT4.001	3x(2x0.14)C 4x0.14 2x0.5	green/yellow, black/brown, red/orange grey/blue/white-yellow/white-black brown-red/brown-blue
CFROBOT4.006	(3x(2x0.14)C)+(4x0.14)+(4x0.22)+(2x0.5)C	11.5	78	143	CFROBOT4.006	3x(2x0.14)C (4x0.14) (4x0.22) (2x0.5)	green/yellow, black/brown, red/orange grey/blue/white-yellow/white-black brown-yellow/brown-grey/green-black/green-red brown-red/brown-blue
CFROBOT4.009	(4x(2x0.25)+(2x0.5)C	9.5	51	93	CFROBOT4.009	4x(2x0.25) 2x0.5	brown/green, blue/violet, grey/pink, red/black white, brown
CFROBOT4.015	(4x(2x0.14)+4x0.5)C	9.0	52	96	CFROBOT4.015	4x(2x0.14) 4x0.5	brown/green, blue/violet, grey/pink, red/black blue, white, brown-green, white-green
CFROBOT4.028 ⁶⁾	(2x(2x0.20)+(2x0.38)C	7.5	47	75	CFROBOT4.028 ⁶⁾	2x(2x0.20) (2x0.38)	green/yellow, pink/blue red/black

⁶⁾ Colour outer jacket: Yellow-green (RAL 6018)

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

