

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	highest			
Torsion	none	1	2	3	±180°				

## Data cable | PUR | chainflex® CFROBOT3

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

### Dynamic information

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

### Cable structure

	<b>Conductor</b>	Stranded conductor in especially bending-resistant design consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Core identification</b>	Colour code in accordance with DIN 47100.
	<b>Overall shield</b>	Extremely torsion-resistant tinned braided copper shield. Coverage approx. 85 % optical
	<b>Outer jacket</b>	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

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

## Class 6.1.3.3

### Properties and approvals

	<b>UV resistance</b>	High.
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3.
	<b>Flame retardant</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	Style 10497 and 20911, 300 V, 80 °C
	<b>NFFPA</b>	Following NFPA 79-2012 chapter 12.9.
	<b>EAC</b>	Certificate no. RU C-DE.ME77.B.01254 (TR ZU)
	<b>CTP</b>	Certificate no. C-DE.PB49.B.00416 (Fire safety)
	<b>CEI</b>	Following CEI 20-35.
	<b>Lead-free</b>	Following 2011/65/EU (RoHS-II).
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27.07.05.02.01.D, tested by IPA according to standard 14644-1.
	<b>CE</b>	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]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-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](http://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

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CFROBOT3.02.04.02	(4x(2x0.25))C	10.5	40	102
CFROBOT3.02.06.02	(6x(2x0.25))C	11.5	55	139
CFROBOT3.02.08.02	(8x(2x0.25))C	14.0	70	157
CFROBOT3.05.05.02	(5x(2x0.5))C	12.5	80	164

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



Example image