

# Measuring system cable | PUR | chainflex® CFROBOT4

**36** 10 million  
Cycles guaranteed

**10 x d**  
Bend radius, e-chain®

**±180°/m**  
Torsion angle

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

## Dynamic information

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

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of tinned copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core identification</b>	According to measuring system specification. ► <b>Product range table</b>
<b>Element shield</b>	Extremely torsion-resistant tinned wound copper shield.
<b>Overall shield</b>	Extremely torsion-resistant tinned wound copper shield. Coverage approx. 80% optical
<b>Outer jacket</b>	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) Variants ► <b>Product range table</b>

## Electrical information

<b>Nominal voltage</b>	50V 30V (following UL)
<b>Testing voltage</b>	500V

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## 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, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFROBOT4">www.igus.eu/CFROBOT4</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00295/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

### Guaranteed service life (details see page 28-29)

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

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, Class 3
- Torsion ±180°, with 1m cable length, Class 3
- Indoor and outdoor applications, UV-resistant
- Robots, handling, spindle drives

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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CFRIP

UL LISTED

UL

nec

NFPA

CUA

DNV

EAC

REACH

RoHS

clean-room

UL

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UL

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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]
CFROBOT4.001	(3x(2x0.14)C + (4x0.14)+(2x0.5))C	10.5	62	115
CFROBOT4.006	(3x(2x0.14C+(4x0.14) + (4x0.22)+(2x0.5))C	11.5	74	135
CFROBOT4.009	(4x(2x0.25)+(2x0.5))C	9.0	48	90
CFROBOT4.015	(4x(2x0.14)+4x0.5)C	9.0	49	91
CFROBOT4.028 <sup>13)</sup>	(2x(2x0.20)+(2x0.38))C	7.5	44	72

<sup>13)</sup> 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



**Cables available in the chainflex® CASE**

Simple savings on delivery, storage space and re-ordering with the chainflex® CASE - ship'n store by igus®.

More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



Part No.	Core group	Colour code
CFROBOT4.001	3x(2x0.14)C	green/yellow, black/brown, red/orange
	4x0.14	grey/blue/white-yellow/white-black
	2x0.5	brown-red/brown-blue
CFROBOT4.006	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(4x0.22)	yellow-brown/grey-brown/green-black/green-red
CFROBOT4.009	(2x0.5)	brown-red/brown-blue
	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
CFROBOT4.015	2x0.5	white, brown
	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
CFROBOT4.015	4x0.5	blue, white, brown-green, white-green
	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
CFROBOT4.028 <sup>13)</sup>	2x(2x0.20)	green/yellow, pink/blue
	(2x0.38)	red/black

- Order example: CFROBOT4.009 – to your desired length (0.5m steps)**  
CFROBOT4 chainflex® series .009 Code measuring system type
- Order online ► [www.igus.eu/CFROBOT4](http://www.igus.eu/CFROBOT4)
- Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



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