

Bus cable | PUR | chainflex® CFROBOT8







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
- Notch-resistant
- Hydrolysis and microbe-resistant



Dynamic information

	Bend radius	flexible twisted	minimum 10 x d
		fixed	minimum 5 x d
	Temperature	flexible twisted	-25°C up to +70°C
		fixed	-50°C up to +70°C (following DIN EN 50305)
	v max.	twisted	180°/s
	a max.	twisted	60°/s²
	Travel distance	Robots and 3D movements, Class 1	
	Torsion	Torsion ±180°, with 1m cable length, Class 3	

Cable structure

	Conductor	Stranded conductor in especially bending-resistant version consisting of tinned or bare copper wires (following DIN EN 60228).	
	Core insulation	According to bus specification.	
	Core structure	According to bus specification.	
	Core identification	According to bus specification. ► Product range table	
	Intermediate layer	Foil taping over the outer layer.	
	Overall shield	Torsion resistant tinned braided copper shield. Coverage approx. 80% 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: Steel blue (similar to RAL 5011)	

Electrical information













	Nominal voltage	50V 300V (following UL)
	Testing voltage	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

	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)
	UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
	UL/CSA AWM	See data sheet for details ► www.igus.eu/CFROBOT8
	EAC	Certificate No. RU C-DE.ME77.B.00295/19
	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 Following 2014/35/EU
	CE	
	UK CA	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/+60	±180	±120	±60
+60/+70	±150	±90	±30

* Higher number of double strokes? Service life calculation online ► 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

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

CE

UL US

nec

CE

REACH

RoHS

clean-room

CE

UK CA

Guarantee
igus chainflex
36
up to 36 months guarantee

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

UL

407

EPLAN download, configurators ► www.igus.eu/CFROBOT

36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges

igus

EU2023

EU2023

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UL-verified chainflex® guarantee ... www.igus.eu/ul-verified

Bus cable | PUR | chainflex® CFROBOT8

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°			



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]
Profibus (1x2x0.64mm)				
CFROBOT8.001	(2x0.35)C	8.0	28	63
CAN-Bus				
CFROBOT8.022	(4x0.5)C	7.5	41	78
DeviceNet				
CFROBOT8.030	(2xAWG24)C (2xAWG22)C	9.5	31	77
Ethernet/CAT5e/PoE				
CFROBOT8.045	4x(2x0.15)C	9.5	48	96
Ethernet/CAT6/PoE				
CFROBOT8.049	4x(2x0.15)C	9.5	48	96
Ethernet/CAT6A				
CFROBOT8.050	4x(2x0.15)C	10.5	51	134
Ethernet/CAT7				
CFROBOT8.052	4x(2x0.15)C	10.5	51	134
Profinet				
CFROBOT8.060	(2x(2x0.34))C	8.5	34	74



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



Technical note on bus cables

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to diverse media.

The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, that greater value is placed on a high degree of EMC reliability.

It is also ensured that the electrical values remain stable over the long term in spite of permanent movement.

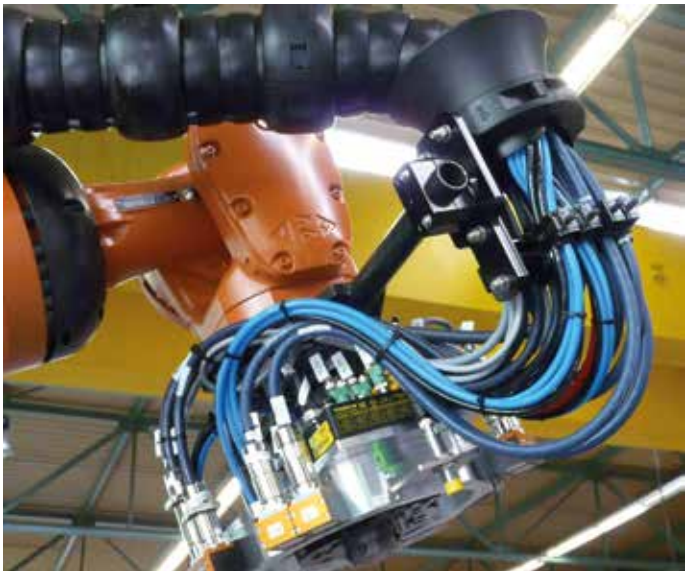
The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used.

What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals.

igus® advises you when you are designing your bus system to take all these factors into account and, with extensive tests, helps you to ensure the process reliability of your system from the very beginning.

Class 6.1.3.3

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
Profibus (1x2x0.64mm)			
CFROBOT8.001	150	(2x0.35)C	red, green
CAN-Bus			
CFROBOT8.022	120	(4x0.5)C	white, green, brown, yellow (star-quad)
DeviceNet			
CFROBOT8.030	120	(2xAWG24)C (2xAWG22)C	white/blue red/black
Ethernet/CAT5e/PoE			
CFROBOT8.045	100	4x(2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
Ethernet/CAT6/PoE			
CFROBOT8.049	100	4x(2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
Ethernet/CAT6A			
CFROBOT8.050	100	4x(2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
Ethernet/CAT7			
CFROBOT8.052	100	4x(2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
Profinet			
CFROBOT8.060	100	(2x(2x0.34))C	white/blue, yellow/orange



CFROBOT® cables used in robots for the automated systems in fuel tank production. These are supplied as fully harnessed readychain® systems.

