Spindle cable/Single core | TPE | chainflex® CFROBOT

- For torsion applications
- TPE outer jacket
- Shielded
- Oil-resistant, bio-oil-resistant
- PVC-free
- UV-resistant
- Flame retardant
- 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**	-35 °C to +90 °C
	flexible	-45 °C to +100 °C (following DIN EN 60811-504)
	fixed	-50 °C to +100 °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	Extremely bend-resistant cable.
Core insulation	Mechanically high-quality TPE mixture.
Overall shield	Extremely torsion-resistant tinned braided copper shield. Coverage approx. 90 % optical
Outer jacket	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Jet black (similar to RAL 9005)

Electrical information

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

Properties and approvals

UV resistance	High.
Oil resistance	Oil resistant (following DIN EN 60811-404), bio-oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4.
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).

Example image

Class 6.1.4.3

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

UL/CSA	Style 10258 and 21387, 1000 V, 90 °C
NFPA	Following NFPA 79-2012 chapter 12.9.
EAC	Certificate no. RU C-DE.ME77.B.02324 (TR ZU)
CTP	Certificate no. C-DE.PB49.B.00420 (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 CF34.UL.25.04.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]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-35/-25	±150	±90	±30
-25/+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, also with bio-oils
- 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]
CFROBOT.035	(1x10.0)C	10.5	134	209
CFROBOT.036	(1x16.0)C	12.0	202	293
CFROBOT.037	(1x25.0)C	14.5	318	454
CFROBOT.038	(1x35.0)C	15.5	431	574
CFROBOT.039 [11)]	(1x50.0)C	18.0	601	781

[11)] 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

CFROBOT
TPE
± 180°/m